# Additional Supplemental Remedial Investigation Summary Report

Water Gremlin Company White Bear Lake Township MPCA Site ID SR0001534

Prepared for: Water Gremlin

4400 Otter Lake Road, White Bear Township, MN 55110



Prepared by:

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# **Table of Contents**

1.0	PURP	OSE AND SCOPE	1-1
	1.1 1.2	Purpose	
2.0	SITE	DESCRIPTION AND HISTORY	2-1
	2.1	Site Location	2-1
	2.2	Current Site Conditions and Use	
	2.3	Past Site Use	2-2
3.0	PROJE	ECT BACKGROUND	3-1
	3.1	2019 Wenck Phase I ESA Report	3-4
	3.2	2019 RI Work Plan	
	3.3	July 2019 RI Report	3-4
	3.4	2019 SRI Work Plan	
	3.5	2020 Supplemental RI Report	3-7
	3.6	April 2020 Additional SRI Work Plan	3-9
	3.7	Well Receptor Survey	
4.0	SITE F	PHYSICAL SETTING	4-1
	4.1	Topography	4-1
	4.2	Geology	
	4.3	Hydrogeology	
	4.4	Surface Water	4-3
5.0	SITE	NVESTIGATION METHODS AND PROCEDURES	5-1
	5.1	Rationale and Objective	5-1
	5.2	Field Investigation Overview	
	5.3	Deviations From Approved SRI Work Plan	5-2
	5.4	Soil Screening investigation	5-2
	5.5	Groundwater Screening Investigation	5- <i>6</i>
	5.6	Soil Vapor Screening Investigation	
	5.7	Sediment Sampling	5-9
	5.8	Surface Water Sampling	
	5.9	Groundwater to Surface Water Monitoring	
	5.10	Residential Well Sampling	5-11
6.0	INVES	STIGATION RESULTS	6-1
	6.1	Soil Investigation Results	6-1
		6.1.1 Surficial Geology	6-1
		6.1.2 Field Screening Results	
		6.1.3 Soil Analytical Results	
	6.2	Groundwater Investigation Results	6-3
		6.2.1 Hydrogeology	
		6.2.2 Groundwater Analytical Results	6-4

# Table of Contents (Cont.)

	6.3	Soil Vapor Investigation Results	6-5
		6.3.1 South Campus Sub-Slab Vapor Sampling Results	6-5
	6.4	Sediment Investigation Results	
		6.4.1 Sediment Description	6-6
		6.4.2 Sediment Analytical Results	6-6
	6.5	Surface Water Investigation Results	6-7
	6.6	Monitoring Well and Creek Water Level Results	6-7
	6.7	Residential Well Sampling Results	6-8
	6.8	Investigation Analytical Results Quality Assurance/Quality Control	6-9
		6.8.1 Blind Duplicate Sample Summary	6-9
		6.8.2 Matrix Spike/Matrix Spike Duplicate Sample Summary	6-9
		6.8.3 Trip Blank Summary	
		6.8.4 Rinsate Sample Summary	6-11
		6.8.5 QA/QC Summary	6-11
7.0	DISC	JSSION	7-1
	7.1	General	7 1
		General	/ - 1
	7.2	Soil Conditions	
	7.2 7.3		7-1
		Soil Conditions	7-1 7-1
	7.3	Soil ConditionsGroundwater Conditions	7-1 7-1 7-2
	7.3 7.4	Soil ConditionsGroundwater ConditionsSouth Campus Sub-Slab Vapor Conditions	7-1 7-1 7-2
	7.3 7.4 7.5	Soil Conditions	7-1 7-1 7-2 7-2
	7.3 7.4 7.5 7.6	Soil Conditions	7-1 7-2 7-2 7-2 7-3
8.0	7.3 7.4 7.5 7.6 7.7 7.8	Soil Conditions Groundwater Conditions South Campus Sub-Slab Vapor Conditions Sediment Conditions Surface Water Conditions Off-Site Groundwater Conditions	7-1 7-2 7-2 7-2 7-3 7-3
8.0 9.0	7.3 7.4 7.5 7.6 7.7 7.8	Soil Conditions Groundwater Conditions South Campus Sub-Slab Vapor Conditions Sediment Conditions Surface Water Conditions Off-Site Groundwater Conditions Exposure Pathway Analysis and Risk Assessment	7-1 7-2 7-2 7-2 7-3 7-3

# Table of Contents (Cont.)

## **FIGURES**

- 1 Site Location Map
- 2 Remedial Investigation Area Detail Map
- 3 2020 SRI Sample locations
- 4 Soil Boring Locations
- 5 Interior Soil Boring Locations
- 6 Soil Sample Locations
- 7 Groundwater Sample Locations
- 8 South Campus Sub-Slab Sample Locations
- 9 Sediment Sample Locations
- 10 Surface Water Sample Locations
- 11 Residential Well Sample Locations
- 12 Cross-Section Index Map
- 13 Geologic Cross-Section A-A'
- 14 Geologic Cross-Section B-B'
- 15 Geologic Cross-Section C-C'
- 16 Geologic Cross-Section D-D'
- 17 VOCs & 1,4-dioxane in Groundwater
- 18 Sediment Sample Results
- 19 Surface Water Sample Results

# **TABLES**

- 1 Investigation Sample Coordinates
- 2 Soil Boring Summary
- 3 Well and Stream Gauge Water Level Data Summary
- 4 Soil Analytical Results Summary
- 5 Groundwater Analytical Results Summary
- 6 South Campus Sub-Slab Vapor Analytical Results Summary
- 7 Sediment Analytical Results Summary
- 8 Surface Water Analytical Results Summary
- 9 Residential Well Sampling Results

#### **APPENDICES**

- A Soil Boring Logs
- B Vapor Sampling Forms
- C Residential Well Standard Operating Procedure
- D Level 2 Laboratory Analytical Reports
- E Validation reports and Electronic Data Deliverables (EDDs)

#### 1.1 PURPOSE

Wenck Associates, Inc. (Wenck) conducted this Additional Supplemental Remedial Investigation (SRI) of the Water Gremlin Company facility located at 4400 Otter Lake Road, White Bear Lake Township, Ramsey County, Minnesota (the Site) in accordance with the Additional SRI Work Plan dated April 2020 and approved by the Minnesota Pollution Control Agency (MPCA) with modifications on May 28, 2020. The investigation and related activities are being conducted under MPCA Site ID SR0001534 to meet the requirements of the March 1, 2019 Stipulation Agreement (STIP) between Water Gremlin Company and the Minnesota Pollution Control Agency (MPCA).

The purpose of the Additional SRI described herein was to further evaluate the extent and magnitude of soil, groundwater, vapors, sediment and surface water impacts previously identified at the Site during completion of the RI and SRI. The first phase of the RI completed in June 2019 identified volatile organic compounds (VOCs), including trichloroethylene (TCE) and vinyl chloride (VC), in the shallow groundwater on the property; the VOCs tetrachloroethene (PCE) and TCE in Site soils, and lead in soil, sediment and surface water samples on the Site, some of which were above applicable MPCA risk-screening criteria.

The previous SRI completed between August and December 2019 identified lead concentrations above regulatory screening criteria in the unconsolidated materials beneath the building and in sediment and surface water samples collected along Lambert Creek on the eastern portion of the property. Groundwater sampling completed during the SRI identified the VOCs 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethene (1,2-DCE), toluene, trans-1,2-dichloroethene (trans-1,2-DCE), TCE, VC, and semi-volatile compound 1,4-dioxane at concentrations exceeding their respective Health Risk Limits (HRLs) in groundwater at the Site.

#### 1.2 SCOPE OF SERVICES

The following scope of service was completed for this Additional SRI between April and July 2020:

- Preparation of the Additional SRI Work Plan and submittal to the MPCA for approval.
- ▲ The Site Safety and Health Plan (SSHP) prepared to cover all field work under the MPCA-approved RI Work Plan was referenced during completion of Additional SRI activities. The SSHP was modified to address safety and health requirements based on site-specific conditions encountered during the 2019 RI and SRI field activities. The SSHP included emergency phone numbers and directions to the local hospital.
- ▲ Cleared public and private utilities prior to implementation of each sampling event.
- ▲ Completed a total of 23 soil borings over the course of the Additional Supplemental Investigation for soil and/or groundwater sampling (six [6] interior borings and 17 exterior borings).
- ▲ Completed five (5) shallow push-probe soil borings to assess current soil conditions outside the North Campus building.



- ▲ Completed five (5) shallow push-probe soil borings and one (1) shallow boring using Geoprobe hand-driven coring equipment to assess current soil conditions inside the North Campus building.
- ▲ Completed 12 push-probe borings using a Geoprobe® Screen Point 15 (SP-15) screen for collection of multiple vertical groundwater samples from selected boring locations.
- ▲ Observed and collected soil samples recovered from the push-probe and/or hand tooling borings, created soil boring logs, and field-screened soil for the presence of volatile organics with a photoionization detector (PID).
- ▲ Collected soil samples from 15 push-probe and/or hand tooling borings.
- ▲ Collected a total of 18 soil samples, (15 soil samples for analysis of VOCs and 1,4-dioxane by EPA Method 8260B, and three (3) soil samples for analysis of lead by EPA Method 6010D).
- ▲ Collected groundwater samples from 12 push-probe borings.
- ▲ Collected a total of 53 groundwater samples from temporary well screens for analysis of VOCs by EPA Method 8260B, 1,4-dioxane by EPA Method 8270SIM and dissolved lead by EPA Method 6010D.
- ▲ Installed four (4) temporary sub-slab vapor pins within the research and development lab of the South Campus building and collected four samples (4) for laboratory analysis of VOCs by EPA method TO-15.
- ▲ Collected five (5) surface water samples, one (1) along County Ditch 14 west of Otter Lake Road and three (3) plus a duplicate sample from the west stormwater pond for laboratory analysis of lead by EPA Method 6010D and/or 6020B and 1,4-dioxane by EPA Method 8270SIM.
- ▲ Collected five (5) sediment samples, one (1) along County Ditch 14 west of Otter Lake Road, three (3) from the west stormwater pond, and one (1) from the west side of the South Campus stormwater pond for laboratory analysis of lead by EPA Method 6010D and/or 6020B and 1,4-dioxane by EPA Method 8260D.
- ▲ Collected appropriate QA/QC samples per the approved Additional SRI Work Plan
- ▲ Collected water level measurements from the shallow monitoring well and stream gauge adjacent to Lambert Creek on multiple occasions.
- ▲ Completed a water well receptor survey to identify the existence and location of drinking water wells within a one-mile radius of the Water Gremlin Facility. Contacted residents south of the Water Gremlin property as directed by the MPCA to verify the presence of wells on their properties and requested permission to sample identified drinking water wells.
- Prepared a Standard Operating Procedure (SOP) for collection of drinking water samples from private domestic wells at residences south of the Water Gremlin facility.
- ▲ Collection of drinking water samples from 44 residential properties within the city limits of Gem Lake for laboratory analysis of 1.4-dioxane by EPA Method 522.
- ▲ Prepared this Additional SRI report documenting the results of the investigation and providing recommendations for additional investigation.



# 2.0 Site Description and History

#### 2.1 SITE LOCATION

The Site is located in a commercial and residential area at 4400 Otter Lake Road White Bear Lake Township, Ramsey County, Minnesota. Additional addresses of the Site include: 0, 1596 and 1610 Whitaker Street; 4316, 4336, 4350 and 4370 Otter Lake Road. The Site is located in the East ½ of the Southwest ¼ of the Northeast ¼ of Section 22, Township 30 North, Range 22 West.

The Site consists of seven parcels occupied by two manufacturing buildings (the North Campus building and the South Campus building) with paved parking lots and drive areas, support structures, storage areas and landscaped areas along the western portion of the property. The eastern half of the Site primarily consists of undeveloped wetlands. County Ditch 14 (Lambert Creek) bisects the center of the Site in an approximate east-west configuration (between the North and South Campus buildings). A pedestrian bridge is located along Otter Lake Road providing access to the two buildings. The site is approximately 61.44-acres in size and is associated with the following parcel numbers:

- ▲ 1596 Whitaker Street: 22-30-22-13-0024 (2.77-acres)
- ▲ 1596 Whitaker Street: 22-30-22-14-0009 (0.69-acres)
- ▲ 4400 Otter Lake Road: 22-30-22-13-0022 (10.77-acres)
- ▲ 4316 Otter Lake Road: 22-30-22-22-42-0013 (6.9-acres)
- ▲ 4336 Otter Lake Road: 22-30-22-13-0007 (0.64-acres)
- ▲ 4370 Otter Lake Road: 22-30-22-13-0023 (4.62-acres)
- ▲ 0 Whitaker Street: 22-30-22-14-0008 (35.05-acres)

Areas previously investigated as part of the RI and SRI included the North Campus building and approximately 13-acres of the northeastern portion of the Site (portions of the 1596, 4400 and 4370 parcels).

Areas investigated as part of this Additional SRI included the North Campus building, South Campus building and off-site to the west of Otter Lake Road. The Site location is shown in **Figure 1**. A Remedial Investigation Area Detail Map is included as **Figure 2**.

#### 2.2 CURRENT SITE CONDITIONS AND USE

The Site currently consists of a North Campus and a South Campus. The North Campus is the primary manufacturing operation at 4400 Otter Lake Road. The existing North Campus building is approximately 90,000 square feet in size with the original building constructed in 1949. Building additions were made in approximately 1952, 1954, 1959, 1962, 1964, 1965, 1968, 1969, 1971, 1973, 1974, 1976, 1978, 1987, 1994, 1995, 1997 and 1998, with interior renovations in 2013 and 2018.

Manufacturing operations in the North Campus building include die casting, hot melt molding, hot melt extrusion, cold forming, coining, gravity casting and coating. Lead bars are melted into liquid via hot melt pots located on die cast machines. The molten lead is injected into a die (mold) forming custom lead parts. Scrap material is dropped into a conveyor that brings the scrap back to the lead melting pot for reclamation.



The coating operations consist of mixing a solvent with solid coating materials (Oppanol and wood resin) to produce a liquid material for application on lead parts. Coating operations are conducted within plexiglass enclosures, which are vented to a common duct. Prior to January 2019, TCE was used as the primary carrier in the coating process. Water Gremlin resumed coating operations in March 2019 using FluoSolv®, a proprietary blend of non-flammable hydrofluoroethers (HFEs) and trans-1,2-dichloroethylene (t-DCE).

The South Campus is currently improved with one approximately 84,000 square foot building at 4316 Otter Lake Road. The building was constructed between 2013 and 2014. Operations in the South Campus building primarily consist of warehousing, water-based coating, coining, light assembly, research and development and shipping and receiving. The majority of the building consists of warehouse space. Sinker assembly and product packaging activities are conducted in the southeastern portion of the building and research and development (R&D) laboratories are located along the southwestern portion of the building. Very small quantities of solvents and lead are used for process research in the R&D laboratory. All waste streams generated in the R&D lab are properly manifested (if required) and disposed off-site. All waste documentation is kept on site per state and federal requirements. Loading docks and shipping/receiving are located on the east side of the building.

#### 2.3 PAST SITE USE

According to reviewed sources of information, the Site was originally purchased by the Ratte family in 1918 for agricultural use. Small scale manufacturing operations of Rubbercor fishing sinkers began in a garage at the Site in approximately 1949. Operations increased over subsequent years and multiple building additions were completed. By approximately 1964 Water Gremlin began coining operations and expanded their facility to 12,000-square feet. By the early 1970s Water Gremlin was a leading manufacturer of fishing sinkers and the facility had expanded to approximately 24,000-square feet. Water Gremlin expanded operations to include custom lead parts in the mid to late 1970s and in approximately 1977 the facility was expanded to approximately 32,000-square feet to include custom parts manufacturing equipment. Between 1997 and 1998, additions totaling roughly 24,000-square foot were completed to the south and eastern portions of the North Campus building. Interior and exterior renovations were completed at the North Campus building in 2013, and in 2016 the west parking lot and stormwater ponds were completed. In 2018 an interior portion of the North Campus building floor was replaced.

Former dwellings on the northern portion of the Site were addressed as 1596 Whitaker Street, 4350 Otter Lake Road & 4370 Otter Lake Road. The residential structures were located adjacent to the west and northwest of the North Campus building from at least 1940 until 2015 when the structures were razed.

Residential structures were located on the southern portion of the Site in the vicinity of the current south building from at least 1940 until the early 1990s. The South Campus building was constructed at 4316 Otter Lake Road in 2013. A residential structure was located at 4336 Otter Lake Road, adjacent to the north of the South building, from 1924 until 2017 when the residence was razed.

The central and eastern portions of the Site have remained vacant wetlands, bisected by County Ditch 14 (Lambert Creek) from at least 1940 to the present. A pedestrian bridge was constructed over the county ditch and wetlands, along Otter Lake Road in 2017.



Between 1995 and 2004 Water Gremlin was enrolled in the MPCA Voluntary Investigation and Cleanup (VIC) program as VP5540 and RCRA Remediation as MND006167720. Previous subsurface investigations completed in the vicinity of the North Campus building at the Site identified lead soil impacts which were remediated by excavation conducted in September and November 1996. On June 20, 1997, a No Further Action (NFA) Letter related to soil was issued by the MPCA; however, additional assessment of groundwater was required before a site wide NFA letter could be issued.

Beginning in 1997, a series of soil and groundwater investigations were conducted in the vicinity of the Water Gremlin North Campus building. Multiple soil borings were advanced through the concrete floor inside the building as well as outside the building and six groundwater monitoring wells were completed at the Site.

Soil borings and monitoring wells completed under the North Campus building and along the south side of the North Campus building showed elevated concentrations of the chlorinated solvents TCE and 1,1,1-trichloroethane (1,1,1-TCA), which were used as solvents in the coating process at the time. Annual groundwater monitoring completed between 2000 and 2004 identified a southerly flow direction across the Site. Subsurface investigations identified a contiguous silty clay to clay confining unit across the Site that impeded vertical groundwater flow and confined known groundwater impacts to the water table aquifer at the Site.

Changes in the concentrations of chlorinated VOC concentrations in groundwater between 1997 and 2004 showed that natural biodegradation of these chemicals had occurred. Concentrations of VOCs in the groundwater at the Site had generally decreased and were below their respective, current at the time, 2004 Minnesota Department of Health (MDH) Health Risk Limits (HRLs) guidance values during the last groundwater sampling event completed in April 2004. On May 14, 2004, the MPCA VIC staff issued a NFA letter to Water Gremlin for the identified release of VOCs to groundwater at the Site.

In July 2018, Water Gremlin self-reported that the facility's air pollution control equipment (solvent recovery system) was not functioning properly, causing TCE to be emitted into the air at concentrations exceeding those allowed under its facility air permit. On March 1, 2019, the MPCA issued a Stipulation Agreement (STIP) related to alleged air emissions violations. Water Gremlin was required to pay a \$4.5-million dollar fine and fund two Supplemental Environmental Projects for a combined \$1.5 million. Water Gremlin is currently working with the MPCA to complete on-Site environmental investigation in accordance with the March 1, 2019 STIP.

The following previous environmental reports prepared for the Water Gremlin facility were reviewed prior to implementation of the 2019 STIP environmental investigations:

- ▲ Environmental Soils Evaluation Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; November 28, 1994. (1994 Soil Investigation Report)
- ▲ Phase I Environmental Site Assessment, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; April 10, 1995. (1995 Braun Phase I Report)



- ▲ Soil Excavation Observations and Documentation Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; September 26, 1995. (1995 Soil Excavation Report)
- ▲ Phase II Environmental Site Assessment, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; March 26, 1996. (1996 Braun Phase II Report)
- ▲ Response Action Plan, Water Gremlin Company, 1610 Whitaker, White Bear Lake, Minnesota. Prepared for Minnesota Pollution Control Agency. Braun Intertec Corporation; September 12, 1996. (1996 Response Action Plan)
- ▲ Appraisal of 4326 Ottertail Road, White Bear Township, MN 55110. Prepared for David Zinschlag, Water Gremlin Company. The Search Co. Appraisal Division. (1997 Appraisal)
- ▲ Response Action Plan Implementation, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; April 8, 1997. (1997 RAP Implementation)
- ▲ Letter Report to Mr. Douglas Johnson, Water Gremlin Company, RE: Water Gremlin Site, MPCA Project Number 5540, No Further Action Determination. Prepared for Water Gremlin Company. MPCA; June 20, 1997. (1997 NFA)
- ▲ Environmental Soil and Groundwater Evaluation, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; August 4, 1997. (1997 Soil and Groundwater Evaluation 1)
- ▲ Environmental Soil and Groundwater Evaluation Report 2, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; January 6, 1998. (1998 Soil and Groundwater Evaluation 2)
- ▲ Environmental Soil and Groundwater Evaluation Report 3, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; January 15, 1999. (1999 Soil and Groundwater Evaluation 3)
- ▲ Environmental Groundwater Evaluation Report 4, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; November 5, 1999. (1999 Soil and Groundwater Evaluation 4)
- ▲ Annual Groundwater Monitoring Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; February 25, 2000. (1999 Annual Monitoring Report)
- ▲ Annual Groundwater Monitoring Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; January 3, 2001. (2000 Annual Monitoring Report)
- Annual Groundwater Monitoring Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; April 30, 2002. (2001 Annual Monitoring Report)
- ▲ Annual Groundwater Monitoring Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; January 13, 2003. (2002 Annual Monitoring Report)
- ▲ Annual Groundwater Monitoring Report, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. Braun Intertec Corporation; February 19, 2004. (2003 Annual Monitoring Report)



- ▲ Draft Phase I Environmental Site Assessment, Water Gremlin, 1610 Whitaker Avenue, White Bear Lake Township, Minnesota. Prepared for Water Gremlin Company. April 2004. (2004 Phase I ESA)
- ▲ Letter Report to Mr. David Zinschlag, Water Gremlin Company, RE: Additional Groundwater Monitoring Assessment, Water Gremlin Company, 1610 Whitaker Avenue, White Bear Lake, Minnesota. Prepared for Water Gremlin Company. May 6, 2004. (2004 Groundwater Monitoring Report)
- ▲ Letter Report to Mr. David Zinschlag, Water Gremlin Company, RE: Water Gremlin Site, 1610 Whitaker Avenue, White Bear Lake, Minnesota, MPCA Project Number VP5540, No Further Action Determination. Prepared for Water Gremlin Company. MPCA; May 14, 2004. (2004 NFA)
- ▲ Phase II Environmental Sampling, Water Gremlin, White Bear Lake Township, Minnesota. Prepared for Water Gremlin Company. June 9, 2004. (2004 Phase II ESA)
- ▲ Facsimile message from Dave Zinschlag, Water Gremlin Co. to JoAnn Henry, MPCA Tanks Division regarding Water Gremlin Tank Inventory, October 5, 1999 & May 13, 2004. (1999-2004 Tank Inventory)
- ▲ Minnesota Pollution Control Agency AST Notification of Installation or Change in Status Form. October 10, 2012. (2012 MPCA Tanks Change In Status)
- ▲ Minnesota Department of Health Well and Boring Sealing Record, Minnesota Well and Boring Sealing No. H355975. American Engineering Testing.4-25-2018. (MWD Well Sealing)
- ▲ Report of Geotechnical Exploration, Die Cast Machine Foundation, Water Gremlin Company, 4400 Otter Lake Road, White Bear Township, Minnesota. Prepared for Water Gremlin Company. American Engineering and Testing; May 16, 2018. (2018 AET Geotechnical Report)

The reviewed documentation was summarized in Wenck's April 2019 Phase I Environmental Site Assessment (ESA).

Following the March 2019 STIP, the following environmental investigations have been completed at the Site:

- ▲ Phase I Environmental Site Assessment, Water Gremlin Company, 4400 Otter Lake Road, White Bear Lake Township, Minnesota. Prepared for Water Gremlin Company. Wenck Associates, Inc.; April 2019. (2019 Wenck Phase I Report)
- ▲ Remedial Investigation Work Plan, Water Gremlin Company, White Bear Lake Township. Prepared for Water Gremlin Company. Wenck Associates; May 2019. (2019 RI Work Plan)
- ▲ Remedial Investigation Summary, Water Gremlin Company, White Bear Lake Township. Prepared for Water Gremlin Company. Wenck Associates; July 2019. (July 2019 RI)
- ▲ Supplemental Remedial Investigation Work Plan, Water Gremlin Company, 4400 Otter Lake Road, White Bear Lake Township, MPCA Site ID SR0001534. Prepared for Water Gremlin Company. Wenck Associates; May 2019. (2019 SRI Work Plan)
- ▲ Supplemental Remedial Investigation Summary Report, Water Gremlin Company, 4400 Otter Lake Road, White Bear Lake Township, MPCA Site ID SR0001534. Prepared for Water Gremlin Company. Wenck Associates; February 2020. (2020 Supplemental RI Report)
- ▲ Additional Supplemental Remedial Investigation Work Plan, Water Gremlin Company, 4400 Otter Lake Road, White Bear Lake Township, MPCA Site ID SR0001534. Prepared for Water Gremlin Company. Wenck Associates; April 2020. (2020 Supplemental RI Report)



▲ Drinking Water Well Receptor Survey, Water Gremlin Company, 4400 Otter Lake Road, White Bear Lake Township, Ramsey County, Minnesota, MPCA Site ID SR0001534. Technical memorandum prepared by Wenck Associates; April 3, 2020. (Well Receptor Survey)

#### 3.1 2019 WENCK PHASE I ESA REPORT

Wenck completed a Phase I ESA for the Site in April 2019. The ESA identified no recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs) or historical recognized environmental conditions (HRECs) relative to the Subject Property, except for the following:

- ▲ "In 1982 the MPCA had investigated a complaint of alleged discharge of contaminated cooling water with oil from the Water Gremlin plant to a county ditch. Lead impacted soil was identified in the soil sample collected at the discharge point. The identified impacts associated with the discharge of contaminated cooling water is considered to represent a REC for the Subject Property.
- ▲ The potential for subsurface soil, groundwater and soil vapor impacts at the Subject Property associated with the former septic system is considered to represent a REC for the Subject Property.
- ▲ Previous lead contaminated soil and solvent impacted groundwater investigated as VP5540 is considered a CREC for the Subject Property.
- ▶ Petroleum impacts to soil and groundwater have been identified at the North Campus building of the Subject Property during previous subsurface investigations completed between 1995 and 2004. The identified petroleum impacts have not been investigated and therefore are considered to represent a REC.
- ▲ Oil staining in the vicinity of the die cast machines and along the wall of the tool room in the North Die Cast building is considered and REC.
- ▲ The air pollution control equipment at the North Campus building was found to be not functioning properly, causing TCE to be emitted into the air at concentrations exceeding Water Gremlin's air permit. Corrective actions are currently on-going. The identified TCE release is considered a REC for the Subject Property."

#### 3.2 2019 RI WORK PLAN

The RI Work Plan was prepared by Wenck Associates on behalf of Water Gremlin to meet the requirements of Section 10, paragraphs aa. and cc. of the March 1, 2019 Stipulation Agreement between Water Gremlin Company and the MPCA. The RI Work Plan was submitted to the MPCA Remediation staff for review and approved on May 14, 2019.

The scope of work outlined in the RI Work Plan was completed and summarized in the July 2019 RI Summary report (Discussed in Section 3.3 below).

#### 3.3 JULY 2019 RI REPORT

The purpose of the July 2019 RI was to assess soil, sediment, surface water, groundwater, sub-slab vapor and crawl space conditions identified as Areas of Concern (AOCs) in accordance with the approved 2019 RI Work Plan. The July 2019 RI consisted of the completion of 18 push-probe soil borings, 17 push-probe borings for vertical groundwater profiling, seven hand auger soil borings, 25 permanent sub-slab vapor pins, six crawl space air samples and two outdoor ambient air samples between June 4, 2019 and June 26, 2019. Soil, groundwater and soil vapor samples collected at the Site were analyzed for lead by



EPA method 6010D and/or VOCs modified list by EPA method 8260B. The following VOCs were included in the MPCA-approved modified 8260B list and analyzed for during the June 2019 RI:

▲ VOCs: chloroethane; 1,1-dichloroethane (1,1-DCA); 1,2-dichloroethane (1,2-DCA); 1,1-dichloroethene (1,1-DCE); *cis*-1,2-dichloroethene (*cis*-1,2-DCE); *trans*-1,2-dichloroethene (*trans*-1,2-DCE); tetrachloroethene (PCE); 1,1,1-trichloroethane (1,1,1-TCA); 1,1,2-trichloroethene (TCE); and vinyl chloride (VC).

The July 2019 RI activities identified soil profiles across the Site generally consisting of approximately 3 to 11 feet of fill comprised primarily of dark brown silty and clayey sand with gravel. The native soils below the fill generally consist of water bearing granular soils primarily comprised of fine- to medium-grained sand, silty sand and clayey sand to approximately 20 feet bg. Below the granular soils, Site soils consisted primarily of a semiconfining clay layer consisting of very fine-grained lacustrine deposits containing highly laminated beds of silts, clays and very fine sands.

During the July 2019 RI activities Wenck identified groundwater depths between approximately 3.9 feet bg to approximately 10.7 bg feet across the Site. The thickness of the perched water column was observed from approximately 9 to 27 feet above the top of the semi-confining clay layer.

#### **Soil Conditions**

A total of 31 soil samples were collected and analyzed for total lead. Lead was detected above laboratory reporting limits in all 31 of these samples. The Industrial Soil Reference Value (SRV) of 700 milligrams per kilogram (mg/kg) was exceeded at GP-16 (0-1') at 719 mg/kg, GP-18 (0-1') at 776 mg/kg, HA-1 (0-1') at 982 mg/kg and HA-5 (0-1') at 979 mg/kg. None of the detected total lead values exceeded the Tier 1 Soil Leaching Value (SLV) of 2,700 mg/kg.

VOCs were not detected above their respective laboratory reporting limits in any of the soil samples collected at the Site, with two exceptions. Specifically, GP-16 contained PCE at a detected concentration of 0.269 mg/kg, above the SLV of 0.042 mg/kg, and TCE at a concentration of 0.826 mg/kg, above the SLV of 0.0023 mg/kg.

#### **Groundwater**

A total of 58 groundwater samples collected from the soil borings were analyzed for VOCs. The VOC compounds including 1,1-DCA, chloroethane, *cis*-1,2-DCE, *trans*-1,2-DCE, TCE and VC were detected above their laboratory reporting limits during this investigation. TCE and VC were the only compounds identified at concentrations exceeding their respective HRLs. TCE exceeded the HRL in samples GP-1 (16-18), GP-2 (15-17), GP-3 (16-18), GP-6 (7-10), GP-6 (15-17), GP-7 (14-16), GP-8 (5-7), GP-8 (12-14), GP-9 (13-15), GP-10 90-5), GP-0 (10-12, GP-11 (15-17), GP-12 (22-24), GP-14 (9-14), GP-15 (8-13), GP-15 (18-20), GP-15 (32-34), GP-16 (10-15), GP-16 (20-22, GP-16 (34-36), 062619-A (blind duplicate of GP-16 [34-36]), GP-17 (17-19), GP-17 (24-26) and GP-18 (20-22). VC was identified above the HRL in samples GP-14 (9-14), GP-15 (8-13), GP-15 (18-20), GP-16 (10-15), GP-16 (20-22), GP-18 (10-15) and 062619-B (blind duplicate of GP-18 [10-15]).

#### Sub-Slab Soil Vapor

A total of 25 sub-slab soil vapor samples (SS-1 through SS-25) were analyzed for a modified list of VOCs by the EPA Method TO-15. Five individual VOCs (1,1,1-TCA, 1,1-DCA,



cis-1,2 DCE, PCE, trans-1,2,DCE and TCE were detected above the laboratory method reporting limits but below their respective Industrial Intrusion Screening Values (ISVs).

The following results were identified above 33X the Industrial Intrusion Screening Values (ISVs):

▲ TCE in the samples collected from: SS-1 through SS-4, SS-6, SS-8 through SS-15, SS-18 through SS-20 and SS-22 through SS-25.

The following results were identified above 33X the Industrial Expedited Intrusion Screening Values (EISVs):

▲ TCE in the samples collected from: SS-2, SS-6, SS-8 through SS-15, SS-18 through SS-20 and SS-22 through SS-24.

## **Indoor Air**

A total of eight ambient air samples (six crawl space and two background samples) were collected during the July 2019 RI activities and analyzed for a modified list of VOCS by EPA Method TO-15. All eight samples reported VOCs identified above their respective laboratory reporting limit.

The following results were identified above the Industrial ISVs:

▲ TCE in the samples collected from: AA-3, AA-4, AA-5, AA-7 and AA-8.

#### **Sediment**

VOCs were not detected above laboratory reporting limits in any of the sediment samples collected during this investigation. Lead concentrations were identified above the MPCA Level 1 Sediment Quality Target (SQTs) in four of the five sediment samples collected from the north bank of County Ditch 14 and in one of the samples collected from the eastern stormwater pond outlet. The two sediment samples collected from the eastern stormwater pond inlets identified lead concentrations above the MPCA Level II SQT.

#### **Surface Water**

VOCs were not detected above laboratory reporting limits in any of the six surface water samples collected from County Ditch 14 (Lambert Creek). Concentrations of lead in the six surface water samples collected from County Ditch 14 (Lambert Creek) ranged from non-detect to 12.5 micrograms per liter ( $\mu$ g/I). Lead was detected above the hardness adjusted Tier I Surface Water Criteria at two sample locations.

#### 3.4 2019 SRI WORK PLAN

The SRI Work Plan was prepared by Wenck Associates on behalf of Water Gremlin to further evaluate the extent and magnitude of vapor, soil, groundwater, sediment and surface water impacts at the Site. The SRI Work Plan took into consideration the comments made by the MPCA in its Remedial Investigation Summary letter dated August 8, 2019 related to the review of the Wenck Remedial Investigation Report, dated July 2019.

The 2019 SRI Work Plan was submitted to the MPCA Remediation staff for review and approved verbally in October and November 2019. The MPCA provided an email confirmation of their approvals on January 16, 2020.



#### 3.5 2020 SUPPLEMENTAL RI REPORT

The 2020 Supplemental Remedial Investigation was completed to further evaluate the extent and magnitude of vapor, soil, groundwater, sediment and surface water impacts previously identified at the Site during completion of the initial RI in June 2019. The first phase of the RI identified TCE in sub-slab vapor samples beneath the North Campus manufacturing building; VOCs, including TCE and VC, in the shallow groundwater on the property; the VOCs PCE and TCE in Site soils, and lead in soil, sediment and surface water samples on the Site, some of which were above applicable MPCA risk-screening criteria.

The SRI included the completion of 32 borings (17 interior borings and 15 exterior borings) over the course of the supplemental investigation for soil and/or groundwater sampling; completion of additional interior sub-slab vapor sampling, two rounds of exterior vapor sampling at 23 locations, collection of additional surface water and sediment samples along Lambert Creek and installation of a permanent monitoring well adjacent to Lambert Creek. Concurrent to the implementation of the additional SRI activities, a draft Interim Vapor Mitigation Work Plan (August 2019) documenting the proposed installation of a dual sub-slab depressurization (SSDS) and soil vapor extraction (SVE) system to mitigate potential vapor intrusion to the north manufacturing building was submitted to the MPCA for review. The MPCA provided comments in a letter dated August 20, 2020. The temporary system was initially started up in September 2019 and is still operating at the Site today. The temporary blower system will be replaced with a permanent SSD / SVE blower system in early May 2020.

Soil profiles across the Site were generally consistent with previous investigation results. Surficial fill consisting primarily of dark brown silty with gravel were identified in the upper 3 to 5 feet of the exterior borings and upper 2 to 12 feet of interior borings. Organic sediments and peat were also encountered in the upper 5 to 10 feet of soil borings completed in the wetland area to the south and southeast of the North Campus building.

Shallow fill and/or organic sediments were generally underlain by water bearing granular sediments comprised of poorly graded fine sand and silty sand. In general, the granular sediments were underlain by a semi-confining clay layer comprised of very fine-grained lacustrine deposits containing highly laminated beds of silts, clays and very fine sands.

During completion of the July 2019 RI groundwater levels were measured from 3.88 feet bg to 10.7 feet bg throughout the Site and during the SRI groundwater was measured between 0.8 and 11.5 feet bg. The previous subsurface investigations completed at the Site identified a southerly to southwesterly groundwater flow direction.

## **Soil Conditions**

A total of 32 soil samples, 14 exterior samples and 18 interior samples, were collected and analyzed for total lead during the SRI. Lead was identified in the shallow Site soils at concentrations in excess of Tier 2 Industrial SRV at several locations beneath the concrete floor of the North Manufacturing Building. The VOCs p-Isopropyltoluene, ethylbenzene and toluene were detected above laboratory reporting limits at one exterior soil boring location and TCE and trans-1,2-dichloroethene were detected above laboratory reporting limits at one interior soil boring location.

#### <u>Groundwater</u>

A total of 115 groundwater samples collected from the soil borings were analyzed for VOCs. The VOC compounds including 1,1-DCA, 1,1-DCE, 1,2-DCA, chloroethane, acetone,



ethylbenzene, toluene, TCE, p-isopropyltoluene, *cis*-1,2-DCE, *trans*-1,2-DCE and VC were detected above their laboratory reporting limits during the SRI. The low-level detected concentrations of 1,1-DCA, chloroethane, *cis*-1,2-DCE, *trans*-1,2-DCE and VC appear consistent with natural degradation of TCE. 1,1-DCA, toluene, TCE, *trans*-1,2-DCE and VC were the only compounds identified at concentrations exceeding their respective regulatory risk-screening criteria during the SRI.

A total of 98 groundwater samples collected from the soil borings were analyzed for 1,4-dioxane. 1,4-Dioxane was identified in 27 groundwater samples collected during the SRI above the HRL of 1.0 microgram per liter (ug/L).

#### **Exterior Vapor**

Two rounds of exterior soil vapor samples were collected from 3-5-feet bg at 23 locations throughout the Site to assess heating and non-heating season vapor conditions. Various VOCs were detected above laboratory reporting limits in the exterior soil vapor samples SV-1 through SV-23; however, none of the detected concentrations exceeded their respective 33X Residential/Industrial ISVs with the exception of two sample locations.

The second round of vapor sampling was completed between December 2<sup>nd</sup> and 5<sup>th</sup>, 2019. PCE was detected above 33x the Residential ISV at multiple locations during this sampling event. Naphthalene and ethylbenzene were also detected at concentrations in excess of their 33x the Residential ISVs. The PCE detections did not correlate to previous data, therefore, after corroboration with the MCPA, select locations were resampled. The additional sampling conducted on January 9<sup>th</sup> and 10<sup>th</sup> did not reveal PCE at concentrations exceeding the 33x Residential/Industrial ISV in any of the soil vapor sampled collected. Therefore, based on the lack of PCE detections identified at the resampled locations, the previous PCE detections do not appear to be indicative of a release at the Site.

#### Sub-slab Vapor

The results of the July 2019 RI found TCE and trans-1,2-DCE soil vapor concentrations above the EISVs beneath the north manufacturing building. Based on the results of the July 2019 RI, a full-scale vapor mitigation system has been operational at the North Campus facility building since September 2019.

Additional vapor sampling was completed as part of the SRI to further investigate previously un-delineated areas within the North Campus building. Multiple sub-slab samples as well as selected paired samples were collected pre and post mitigation from various locations throughout the course of the investigation. Evaluation of this data is being summarized as part of the Vapor Mitigation Response Action Implementation Report and will be submitted to the MCPA for review under separate cover.

# Wetland Sediment

A total of 14 sediment samples were collected at the Site. The SRI sediment samples were collected east of the previous sample locations and the east stormwater pond further evaluate the nature of the lead identified during the July 2019 RI. Total lead concentrations were identified above the MPCA Level 1 SQT in 10 of the 14 sediment samples collected from the Site. The Level I SQTs are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms (i.e., benthic invertebrates) are unlikely to be observed. Three of the 14 sediment samples identified lead concentrations above the MPCA Level II SQT. The Level II SQTs are intended to identify contaminant concentrations above which harmful effects on sediment-dwelling organisms are likely to be observed.



## **Surface Water**

During the implementation of the SRI, 14 surface water samples were collected from the Lambert Creek on the eastern portion of the property. Total lead concentrations ranged from non-detect to a high of 640 ug/L and exceeded the Tier 1 Surface Water Screening Criteria in six of 18 samples collected from Lambert Creek.

A part of the SRI, two stormwater roof downspout samples were collected as part of the last round of investigation activities. Two samples were collected during an October 21, 2019 rain event to evaluate the roof as a potential source for lead impacts to the stormwater pond and possibly the adjacent wetland. Lead was detected above laboratory reporting limits in both downspout samples; however, the detected concentrations did not exceed the hardness adjusted Tier I Surface Water Criteria. Based on the very low levels of lead in these samples it does not appear at this time that the roof is a significant source of lead to the pond or adjacent wetland.

#### 3.6 APRIL 2020 ADDITIONAL SRI WORK PLAN

The April 2020 Additional SRI Work Plan was prepared by Wenck Associates on behalf of Water Gremlin to further evaluate the extent and magnitude of soil, groundwater, sediment and surface water impacts previously identified at the Site during completion of the RI and SRI. The Additional SRI Work Plan took into consideration the comments made by the MPCA in its Supplemental Remedial Investigation Summary letter dated March 9, 2020 related to the review of the Wenck Supplemental Remedial Investigation Report, dated February 2020.

The April 2020 Additional SRI Work Plan was submitted to the MPCA Remediation staff for review and approved with comments in a letter dated May 28, 2020.

#### 3.7 WELL RECEPTOR SURVEY

Wenck completed a water well receptor survey on behalf of Water Gremlin to identify the existence and location of drinking water wells within a one-mile radius of the facility.

During completion of the initial RI low levels of TCE were identified in the groundwater primarily beneath and to the south of the North Campus building. The MDH sampled 13 private wells in the vicinity of the Water Gremlin facility for the presence of VOCs in April 2019 and no VOCs were identified in the sampled wells.

The semi-volatile compound 1,4-dioxane was identified in the groundwater at the Water Gremlin facility at concentrations above the MDH HRL of 1.0 ug/L during completion of the SRI between August and December 2019. In January-February 2020, the MDH sampled seven (7) private wells near the Water Gremlin facility for the presence of 1,4-dioxane. 1,4-dioxane was detected in three (3) of the seven (7) wells sampled at concentrations slightly above the laboratory reporting limits but below the MDH HRL.

In an email dated February 21, 2020 the MPCA requested Water Gremlin to complete a well receptor survey of drinking water wells within a one-mile radius of the Water Gremlin facility due to the low level detections of 1,4-dioxane in private domestic wells in the area, and the presence of 1,4-dioxane identified in the groundwater at the Water Gremlin facility above the established HRL.



Publicly available information was compiled from multiple regulatory databases. In addition, the Gem Lake, White Bear Township and White Bear Lake utility departments were contacted to verify the presence and use of wells. The water well survey identified 168 properties within one mile of the Water Gremlin facility as having active wells, assumed active wells or unknown well status.

In May 2020, a letter questionnaire was sent to 100 residents requesting verification of the existence of wells for potable water supply or other use, connection or lack of a connection to a public water supply source and interest in participation of potential future well testing for 1,4-dioxane. Responses were received from 47 verifying the presence of a well on their property and requested water testing.

#### 4.1 TOPOGRAPHY

The Site has a general slope to the east toward Goose Lake and White Bear Lake with the approximate elevation ranging from 920 to 910 feet above mean sea level. Site surface drainage is either toward the municipal stormwater sewer system associated with adjacent public streets, towards designed stormwater ponds located at the facility and/or via infiltration in the wetland areas on the eastern portion of the Site. Historic development may have included grading or filling of the Site to improve the location for construction and drainage.

Stormwater retention ponds are located to the east and west of the North Campus building. The east stormwater pond receives runoff from the parking lot areas located on the east, north and southeast sides of the building, as well as roof drain runoff and the southwest stormwater pond receives runoff from the shipping and receiving docks, covered dumpsters, and diesel generator on the southwest portion of the facility. A stormwater retention pond is located to the northeast of the South Campus building which primarily receives runoff from perimeter swales.

County Ditch 14 (Lambert Creek) is in an east-west configuration and bisects through the approximate center of the Site (between the North and South Campus buildings). County Ditch 14 receives drainage from the adjacent wetlands, residential developments and Goose Lake to the east and flows southwest through Rice Lake and eventually drains into East Vadnais Lake, located approximately 3.5-miles southwest of the Site.

#### 4.2 GEOLOGY

Published references indicate White Bear Lake Township is located within quaternary-aged glacial deposits that overlie Paleozoic sedimentary formations. Surficial deposits in the vicinity of the Site consist of glacial sandy lake sediments, outwash, and tills associated with the Grantsburg Sub-lobe deposited during the Late Wisconsinian ice advance and glacial tills and outwash deposited by the Wisconsin-age Superior Lobe. Organic deposits associated with wetlands commonly overlay glacial deposits. These sediments accumulate in poorly drained areas to form peat and are common along Lambert Creek (US Geological Survey 1994).

According to the Ramsey County Geologic Atlas surficial geology on the northwestern portion of the Site (in the vicinity of the North Campus building) is described as sandy lake sediment comprised of fine to medium silt and clay deposits of a former lake that may have been partially confined by stagnant ice. Surficial geology on the southeastern portion of the Site consists of organic sediment comprised of peat, shallow lakes and/or marshes. The Ramsey County Atlas indicates some areas may have been excavated and/or artificially filled (Minnesota Geological Survey, 1992).

Based on geologic references the unconsolidated glacial deposits overlay Ordovician St. Peter Sandstone and Prairie du Chien sedimentary bedrock units located approximately 200 feet bg.



During completion of the multiple phases of investigation at the Site to date surficial fill composed primarily of dark brown silty sand with gravel have been observed in the upper 5 to 10 feet across the Site. Fill material beneath the North Campus Building has been observed at thicknesses ranging from approximately 2 to 12.5 feet. Organic sediments and peat have been encountered in the upper 5 to 10 feet of the borings completed in the wetland area to the south and southeast of the North Campus building.

The general geologic setting on the North Campus property consists of fill material underlain by water bearing granular sediments comprised of poorly graded fine sand and silty sand. Generally, the thickness of granular sediments was observed to be approximately 15 to 30 feet thick on the northern portion of the North Campus area to approximately 5 to 10 feet thick on the southern portions of the North Campus Area. This semi-confining unit is comprised of very fine organic silt and clay sediments containing highly laminated beds of silts, clays and very fine sands indicative of lacustrine deposits. The upper portions of the semi-confining unit include numerous layers of silt, silty sand, fine sand, clayey sand, fat clay and lean clay with high moisture content. Silt and clay content typically increased with depth becoming denser with fewer lenses of granular sediments. The semi-confining layer is estimated to be approximately 45 to 65 feet thick. Beneath this semi-confining layer is a clayey to silty sand unit overlaying a deeper buried glacial aquifer.

South of Lambert Creek the sandy sediments transition into a clay to silty/sandy clay unit that extends from the surface to approximately 30 to 40 feet bg. Alternating layers varying from thin lenses of silt, silty sand, clayey sand, fat clay and lean clay varying from 2 to 4 feet thick were commonly observed with the upper clay unit on the South Campus property. In general, the upper clay unit contained fewer saturated lenses on the southern portion of the South Campus Property. The upper clay unit was underlain by poorly graded water bearing sand unit which was encountered from 30 to 100-feet bg.

Published references describe the first-encountered bedrock unit beneath the northwestern portion of the property as the Ordovician-aged St. Peter Sandstone. The St. Peter Sandstone units ranges in thickness from approximately 155 to 165 feet in Ramsey County. The upper portion of the St. Peter Sandstone consists of fine- to medium-grained sandstone. The lower portion of this unit is composed of fine-grained units of mudstone, siltstone and shale interbedded with coarse-grained sandstone. The first encountered bedrock unit in the southeastern portion of the property is the Prairie du Chien Group consists of thinly to thickly-bedded dolostone (Minnesota Geological Survey, 1992). Depth to bedrock is anticipated to be approximately 200 feet bg (Minnesota Geological Survey, 1992).

#### 4.3 HYDROGEOLOGY

According to available hydrogeologic references, the general direction of shallow groundwater flow in the area of the Site is to the west (Minnesota Geological Survey, 1992). Local conditions may vary due to surface water features, perched groundwater conditions or artificially created drainage systems. Depth to regional groundwater is noted to be between approximately 10 to 20 feet bg (Minnesota Geological Survey, 1992).

Previous investigation data indicate two distinct aquifers are present in the vicinity of the North Campus building. The shallow watertable aquifer has historically been identified within approximately 10 feet of the surface and is underlain by a semi-confining clay layer located between approximately 20 to 40 feet bg. The semi-confining layer is estimated to be



approximately 45 to 65 feet thick. Beneath this semi-confining layer is a clayey to silty sand unit overlaying a deeper buried glacial aquifer.

On the South Campus portion of the Site a silty/sandy clay unit was observed from the surface to a depth of approximately 30 to 40 feet bg. The upper unconsolidated watertable aquifer does not exist on this portion of the property. The clay unit contains numerous water-bearing seams ranging from two (2) to four (4) feet in thickness. Beneath the clay unit is a water-bearing sand unit that extends to a depth of at least 100 feet bg.

#### 4.4 SURFACE WATER

The Site consists of a mix of permeable and impermeable surfaces including buildings, paved areas, retention ponds, wetlands, and landscaped areas. Surface water features at the Site include stormwater retention ponds, wetlands and County Ditch 14 (Lambert Creek) which flows between the North and South Campus buildings.

Runoff from impermeable surfaces on the North Campus generally flows to two main retention ponds located southwest and southeast of the building. Stormwater from the southwest portion of the North Campus, including the shipping and receiving docks, covered dumpsters, and diesel generator flows to the west retention pond. The retention pond has an outlet on the south side and water flows under the drive via a culvert and then flows overland to Lambert Creek. All other runoff from significant materials exposed at the North Campus eventually flows to the east retention pond which overflows to the surrounding wetlands and then to Lambert Creek, which runs between the north and South Campuses.

Runoff from the South Campus primarily flows to perimeter swales that discharge to a pond at the northeast corner of that property. Surface flow from the drive areas and parking areas drain through curb cuts into the swales. Roof drain discharge flows through an underground pipe and discharges to the swale north of the building. An overflow structure is located on the east side of the pond that leads to the east wetlands and then Lambert Creek.

Based on a review of the digital United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (<a href="http://www.fws.gov/wetlands/data/Mapper.html">http://www.fws.gov/wetlands/data/Mapper.html</a>), the Site has designated wetland areas onsite. The predominant wetlands onsite are described as freshwater emergent and freshwater forested/shrub wetlands. According to the Vadnais Lake Area Water Management Organization (VLAWMO) the wetlands on and adjacent to the southeast of the Site are described as the Sobota Slough freshwater emergent wetland complex.

Lambert Creek runs east west between the North Campus and South Campus properties. A permanent drainage easement is currently in place allowing the City of White Bear Lake to conduct ditch maintenance, including tree removal. According to VLAWMO the headwaters of Lambert Creek are Whitaker Pond, located adjacent to the northeast of the Site along Whitaker Street, and West Goose Lake via an unnamed ditch to the southeast of the Site. Lambert Creek flows approximately four (4) miles to the southwest towards its outlet at Vadnais Lake and receives water from multiple side streams including Branches 1, 2, 3, 4 5A and 5 and storm drains. Lambert Creek is listed as a 303(d) impaired water body with an impairment for aquatic recreation due to fecal coliform.



# 5.0 Site Investigation Methods and Procedures

#### 5.1 RATIONALE AND OBJECTIVE

The objective of the Additional SRI at the Site was to further assess soil vapor, soil, groundwater, sediment and surface water conditions on and off-site. The general scope of services associated with the SRI consists of the following tasks:

- Preparation of the Additional SRI Work Plan.
- Advancement of push-probe soil cores for the purpose of collecting soil samples for lab analysis.
- Advancement of push-probe soil cores for the purpose of collecting grab groundwater samples.
- ▲ Collection of surface water samples from the Lambert Creek and the west stormwater pond.
- ▲ Collection of sediment samples from the Lambert Creek, the west stormwater pond and South Campus stormwater pond.
- ▲ Installation of four (4) temporary sub-slab vapor points within the R&D Laboratory of the South Campus building to assess sub-slab vapor conditions beneath the building.
- ▲ Collection of (4) sub-slab vapor samples for laboratory analysis of VOCs using EPA method TO-15.
- On-going water level monitoring of the shallow groundwater monitoring well and stream gauge in Lambert Creek.
- ▲ Completion of a water well receptor survey within a one-mile radius of the Water Gremlin Facility and submittal to the MPCA for review and approval.
- ▲ Mailed a letter questionnaire to approximately 100 Gem Lake residents to verify the presence of wells and requested permission to sample on-site wells.
- Prepared a Standard Operating Procedure (SOP) for the collection of drinking water samples from private domestic wells at residences south of the Water Gremlin facility.
- ▲ Collection of drinking water samples from 44 residential properties with the city limits of Gem Lake for laboratory analysis of 1,4-dioxane by EPA Method 522.
- Preparation of an Additional SRI report documenting SRI activities and recommendations.

Procedures for soil, soil vapor, sediment, surface water and groundwater sampling activities are detailed in the MPCA-approved Additional SRI Work Plan.

# 5.2 FIELD INVESTIGATION OVERVIEW

The Additional SRI focused on further evaluation of the extent and magnitude of lead contamination in sediments; 1,4-dioxane contamination in surface water, fluvial sediment, soil, shallow groundwater and deep groundwater; and VOC contamination is deep groundwater. The Additional SRI activities discussed in this report were conducted during multiple mobilizations to the Site between the dates of June 22, 2020 and July 15, 2020. The 2020 SRI Sample locations are shown on **Figure 3** and cumulative soil boring locations are shown on **Figure 4**.

The following table summarizes chronological order of the SRI sampling activities:



Investigation Activity	Dates	Sample IDs	Media Sampled	Contractor
Push-probe borings with groundwater profiling	June 22 through July 9, 2020	GP-34 through GP-37, GP-43, GP-44, and GP- 48 through GP-50	Groundwater	Midwestern
North Campus shallow push-probe borings (exterior)	June 29-30, 2020	GP-36, GP-38 through GP-42	Soil	Midwestern
South Campus push- probe borings	July 1-2, 2020	GP-45 through GP-47	Soil and Groundwater	Midwestern
North Campus shallow push-probe borings (Interior)	July 7, 2020	SB-18 through SB-23	Soil	Midwestern
Surface water sampling	July 9 and July 15, 2020	SW-21 through SW-24	Surface Water	Wenck
Sediment sampling	July 9, 2020	SED-23 through SED-27	Sediment	Wenck
South Campus sub- slab vapor sampling	July 10, 2020	SS-1 through SS-4	Vapor	Wenck
Residential Well Sampling	July 20 through August 1, 2020	Multiple Gem Lake residences	Drinking Water	Wenck

Procedures for soil, groundwater and vapor sampling activities followed Wenck's Standard Operating Procedures (SOP) dated June 2016, the MPCA QAPP dated September 2014 and the. Residential well sampling was completed in accordance with the SOP dated July 2020. Standard operating procedures were adhered to and methods and procedures are described below. Deviations from the approved Additionally SRI Work Plan during the implementation of the work are described below in **Section 5.3**.

#### 5.3 DEVIATIONS FROM APPROVED SRI WORK PLAN

There were no deviations from the April 2020 SRI Work Plan.

## 5.4 SOIL SCREENING INVESTIGATION

The soil investigation activities were conducted between June 22 and July 9, 2020. Additional SRI activities included the advancement of 23 borings (17 exterior [GP] and six (6) interior borings [SB]) by Midwestern Drilling, LLC (Midwestern) over the course of the supplemental investigation. The 17 exterior borings GP-34 through GP-50 and the interior borings SB-18 through SB-22 were completed using Geoprobe push-probe methods. Due to limited access and ceiling clearance the interior soil boring SB-23 was advanced using Geoprobe hand-driven coring equipment.

Field boring locations were placed based on the MPCA comments in the Supplemental Remedial Investigation Summary letter dated March 9, 2020 and the Supplemental Remedial Investigation Work Plan letter dated May 28, 2020. The locations of the public and private underground utilities were verified prior to drilling to ensure the safe advancement of each boring. The locations of the interior borings and exterior borings are shown on **Figures 5 and 6**, respectively.



During the previous SRI 1,4-dioxane was identified in the groundwater at concentrations exceeding the MDH HRL. In an attempt to identify the possible source(es) of the 1,4-dioxane observed in the groundwater at the Site, five (5) exterior and six (6) interior shallow soil borings were completed to the unconfined water table between 10 and 15-feet bgs and soil samples were collected for 1,4-dioxane laboratory analysis. The five (5) shallow exterior soil borings GP-38 through GP-42 were completed around the North Campus building perimeter to further evaluate soil conditions for the presence of 1,4-dioxane. The six (6) shallow interior soil borings SB-18 through SB-23 were completed in the vicinity of a historic 1,1,1-TCA release near the present-day shipping and receiving portions of the North Campus building. The shallow soil borings were terminated once the unconfined water table was reached between 10 and 15-feet bgs.

The exterior push-probe soil borings GP-45, GP-46 and GP-47 were completed to the south, east and west of the South Campus building to assess soil and groundwater conditions at the South Campus facility. The borings were completed to 40-feet bg and soil samples were collected for laboratory analysis of lead in the upper 0-1-foot interval and just above the unconfined water table between nine (9) and 15-feet bg for VOC and 1,4-dioxane analysis.

The soil borings GP-43, GP-44 and GP-48 were completed to 40-feet bg and the borings GP-34, GP-35, GP-36, GP-37, GP-49 and GP-50 were completed between 70 and 100-feet bg to further evaluate the shallow unconfined and deeper confined aquifer conditions at the Site and to the southwest. Soil samples were not collected for laboratory analysis.

Interior and exterior push-probe soil borings were advanced to depths ranging from approximately 10 feet to 100 feet bg. Soil was collected continuously in five-foot drives using a push-probe with a solid-barrel Macro-Core™ sampler. A new acetate liner was used for each five-foot sampling interval. Upon reaching each interval, the nature of the recovered soil was assessed to conduct soil classification and observe for evidence of potential contamination (i.e., odors, visible staining, etc.).

Geoprobe hand-driven coring equipment was used to complete the interior soil boring SB-23 located just outside the coining room. A slide hammer anvil was utilized to manually drive 1.25-inch probe rods in two-foot intervals. A new acetate liner was used for each two-foot sampling interval. Manual driven tooling was retrieved using a probe rod jack and the nature of the recovered soil was assessed to conduct soil classification and observe for evidence of potential contamination. The manual boring was completed to the water table encountered at 6-feet bg.

Soil samples were collected from the acetate sleeves by hand using clean dedicated nitrile gloves. A portion of the sample was placed into dedicated sealable polyethylene storage bags for headspace screening. Vapor headspace readings were collected from the first plastic storage bag using a PID equipped with a 10.6 eV source lamp calibrated to an isobutylene gas standard. Soil samples from each boring were collected in dedicated glassware, placed in a cooler with ice and submitted under chain-of-custody control to Pace Analytical Services, LLC (Pace) for laboratory analysis. Samples sent to the laboratory were analyzed for lead by EPA Method 6010D, 1-4-Dioxane and VOC by EPA Method 8260B.

Upon completion of all sampling activities, each environmental borehole was appropriately abandoned in accordance with MDH sealing requirements. A boring log was created for each soil boring showing stratigraphic sequence and associated field screening notes and observations (**Appendix A**). Geographic coordinates for each sampling location are summarized in **Table 1**. A boring summary table is included as **Table 2**.



The boring location rationale and analytical parameters sampled for soil are as follows, sample depths were selected based on field observations and the depth of the water table:

Boring ID	Rationale	Sample Depth	Laboratory Analysis
GP-34	Boring advanced near the northwest corner of the South Campus building to 100-feet bg to assess potential impacts from past releases in the deeper confined aquifer downgradient of the North Campus building. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-35	Boring advanced south of Lambert Creek to 90-feet bg to assess potential impacts from past releases in the deeper confined aquifer downgradient of the North Campus building. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-36	Boring advanced near the southwest corner of the North Campus building to 100-feet bg to assess potential impacts from past releases in the deeper confined aquifer at the Site. Soil sample collected above the unconfined water table to further evaluate soil conditions for the presence of 1,4-dioxane.	3-5′	VOC, 1,4- Dioxane
GP-37	Boring advanced north of the North Campus building to 100-feet bg to assess potential impacts from past releases in the deeper confined aquifer upgradient of the North Campus building. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-38	Boring advanced adjacent to the north of the North Campus building to further evaluate soil conditions for the presence of 1,4-dioxane.	3-4'	VOC, 1,4- Dioxane
GP-39	Boring advanced adjacent to the west-southwest of the North Campus building to further evaluate soil conditions for the presence of 1,4-dioxane.	3-4'	VOC, 1,4- Dioxane
GP-40	Boring advanced adjacent to the northeast of the North Campus building to further evaluate soil conditions for the presence of 1,4-dioxane.	3-4'	VOC, 1,4- Dioxane
GP-41	Boring advanced adjacent to the east-northeast of the North Campus building to further evaluate soil conditions for the presence of 1,4-dioxane.	3-4'	VOC, 1,4- Dioxane
GP-42	Boring advanced adjacent to the east of the North Campus building to further evaluate soil conditions for the presence of 1,4-dioxane.	3-4'	VOC, 1,4- Dioxane
GP-43	Boring advanced off-site to southwest of the North Campus building along the west side of Otter Lake Road to further assess and delineate the extent of 1,4-dioxane and VOC impacts downgradient of the facility. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA



Boring ID	Rationale	Sample Depth	Laboratory Analysis
GP-44	Boring advanced near the northeast corner of the South Campus building to further assess and delineate the extent of 1,4-dioxane and VOC impacts in the shallow unconfined groundwater table downgradient of the facility. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-45	Boring advanced to the south of the South Campus building to assess soil and groundwater conditions at the South Campus facility.	0-1′ 11-12′	Pb VOC, 1,4- Dioxane
GP-46	Boring advanced to the east of the South Campus building to assess soil and groundwater conditions at the South Campus facility.	0-1′ 9-10′	Pb VOC, 1,4- Dioxane
GP-47	Boring advanced to the east of the South Campus building to assess soil and groundwater conditions at the South Campus facility.	0-1′ 14-15′	Pb VOC, 1,4- Dioxane
GP-48	Boring advanced along the south bank of Lambert Creek to further assess and delineate the extent of 1,4-dioxane and VOC impacts in the shallow unconfined groundwater table downgradient of the facility. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-49	Boring advanced south-southeast of the North Campus building and south of Lambert Creek to 75-feet bg to assess potential impacts from past releases in the deeper confined aquifer downgradient of the North Campus building. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
GP-50	Boring advanced off-site to southwest of the North Campus building along the west side of Otter Lake Road to 100-feet bg to assess potential impacts from past releases in the deeper confined aquifer downgradient of the North Campus building. Field screening only and groundwater sampling only, no soil analytical samples collected.	NA	NA
SB-18	Boring advanced near the chemical storage room to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	2-4'	VOC, 1,4- Dioxane
SB-19	Boring advanced in the east die cast to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	8-10′	VOC, 1,4- Dioxane
SB-20	Boring advanced in the vicinity of a historic 1,1,1-TCA release near the present-day shipping and receiving area to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	1-3′	VOC, 1,4- Dioxane
SB-21	Boring advanced in the vicinity of a historic 1,1,1-TCA release near the present-day shipping and receiving area to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	3-5′	VOC, 1,4- Dioxane



Boring ID	Rationale	Sample Depth	Laboratory Analysis
SB-22	Boring advanced in the northwest die cast to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	2-4'	VOC, 1,4- Dioxane
SB-23	Boring advanced near the coining room to further evaluate soil conditions for the presence of 1,4-dioxane beneath the North Campus building.	2-4′	VOC, 1,4- Dioxane

Per the approved Additional SRI work plan, soil samples for 1,4-dioxane and VOC analysis were collected at the interval(s) revealing the highest PID response or at intervals revealing visual evidence of potential contamination. In the absence of obvious soil impacts (i.e., elevated PID readings) a soil sample was collected just above the observed unconfined water table. Field observations and PID observations are included in the boring logs included in **Appendix A**.

Per the approved Additional SRI work plan, a minimum of one (1) soil sample was collected from the three soils borings at the South Campus building for total lead analysis by EPA Method 6010D. Total lead samples were collected from the zero to one-foot zone at each boring location. Field observations are included in the boring logs included in **Appendix A**.

#### 5.5 GROUNDWATER SCREENING INVESTIGATION

Groundwater quality data collected during the previous RI and SRI identified the VOCs 1,1-DCA, 1,2-DCE, toluene, trans-1,2-DCE TCE and VC at concentrations exceeding their respective HRLs in shallow groundwater at the Site. Dissolved lead samples were collected from seven locations beneath the main coating room during the SRI and lead concentrations ranged from a low concentration of 0.21 mg/l to high of 3.5 mg/l. The semi-volatile compound 1,4-dioxane was identified in the shallow groundwater in excess of the HRL of 1.0 ug/L at 27 sample locations.

The VOCs in groundwater were detected near and down-gradient (south and southwest) of the suspected historic source areas located beneath the North Campus building. The distribution of the VOC impacts indicates a southerly to southwesterly flow direction.

During completion of this Additional SRI 12 push-probe groundwater samples were primarily collected at locations south and southwest, or downgradient of the North Campus Facility to further delineate the vertical and horizontal extent of VOC and 1,4-dioxane impacts previously identified at the Site. Additionally, five (5) of the soil borings were completed through the confining layer and into the buried groundwater aquifer to depths ranging from 70 to 100-feet bg to evaluate the deeper confined potable aquifer for potential impacts from past releases.

Groundwater sampling was completed between June 22 and July 9, 2020. A total of 53 groundwater samples were collected during this phase of investigation. Groundwater depths varied between approximately five (5) feet below grade to approximately 40 feet below grade throughout the areas investigated during this Additional SRI. Groundwater sample locations are shown on **Figure 7**. Geographic coordinates for each sampling location are summarized in **Table 1**.

Discrete groundwater samples were collected in a separate hole location (from soil probe) within approximately five (5) feet of the soil boring hole using a Geoprobe™ Screen Point 15



(SP-15) stainless-steel screen and drive rods. Teflon® tape was used at each of the drive rod threaded joints to prevent water infiltration from shallower groundwater. To facilitate groundwater sample collection, the SP-15 screen-point sampler was used for sampling groundwater at all locations. The SP-15 sampler was driven to the shallowest desired sampling depth, based on lithology and PID readings. The screen was generally placed such that bottom of the screen was approximately three feet below the initial water table and then every five (5) feet thereafter. The rods and screen sheath were then retracted to expose a minimum of two feet and a maximum of five (5) feet of stainless-steel sampling screen. The length of screen exposed was dependent on the availability of water. In more permeable zones a smaller section of the screen was exposed as an adequate amount of water was available for sampling. If the zone was less permeable a larger section of screen was exposed in order to obtain enough water for sampling.

At each well screen sampling depth, a minimum of three (3) sample tube volumes were purged prior to sample collection using a check ball and dedicated polyethylene tubing. After purging, groundwater samples were collected from each well screen directly into laboratory-provided dedicated glassware, placed in a cooler with ice and submitted under chain-of-custody control to Pace Analytical Services, LLC for laboratory analysis for VOCs using EPA Method 8260, 1,4-dioxane using EPA Method 8270SIM, and dissolved lead EPA Method 6010D. Blind duplicate and trip blank samples were submitted with the groundwater samples for QA/QC purposes. After each screened interval was sampled, the groundwater sampler was retracted, and the screen and all rod equipment were decontaminated. A new drive point was then installed to allow the screen to be re-driven through the borehole to the next deeper progressive depth for sampling.

All reusable sampling equipment was cleaned with Alconox® solution and triple-rinsed with deionized water between temporary well screen intervals. The boreholes were sealed by the drilling contractor as the drive rods were retracted from the final well interval depth in accordance with MDH regulations.

A general groundwater sampling summary is provided below:

Boring ID	Boring Depth	Screen Depth	Groundwater Laboratory Analysis
GP-34	100′	47-50' 75-78' 97-100'	VOC, 1,4-dioxane, dissolved lead
GP-35	90′	14-17' 47-50' 68-72' 88-90'	VOC, 1,4-dioxane, dissolved lead
GP-36	70′	8-10' 13-17' 24-26' 38-40' & DUP063020 55-57' 68-70'	VOC, 1,4-dioxane, dissolved lead
GP-37	100′	15-18' 23-26' & DUP062920 31-34' 38-40' 65-69' 80-84'	VOC, 1,4-dioxane, dissolved lead



Boring ID	Boring Depth	Screen Depth	Groundwater Laboratory Analysis
		96-100′	
GP-43	40′	6-9' 14-17' 22-25' 30-33' 38-40'	VOC, 1,4-dioxane, dissolved lead
GP-44	40′	24-27′ 37-40′	VOC, 1,4-dioxane, dissolved lead
GP-45	40′	11-14' 29-32' 37-40' & DUP070120	VOC, 1,4-dioxane, dissolved lead
GP-46	40′	9-12' 17-20' 30-33' 38-40'	VOC, 1,4-dioxane, dissolved lead
GP-47	40′	38-40′	VOC, 1,4-dioxane, dissolved lead
GP-48	40′	8-12' 25-27' 31-34'	VOC, 1,4-dioxane, dissolved lead
GP-49	<b>7</b> 5′	10-12' 17-20' 45-47' 57-59' 73-75'	VOC, 1,4-dioxane, dissolved lead
GP-50	100′	15-18' 35-38' 45-47' 58-60' & DUP070920 78-80' 98-100'	VOC, 1,4-dioxane, dissolved lead

#### 5.6 SOIL VAPOR SCREENING INVESTIGATION

Vapor assessment activities were completed inside the research and development portion of the building South Campus building per the MPCA Work Plan Approval letter dated May 28, 2020. Temporary sub-slab vapor pins were advanced at four locations within the R&D laboratory of the South Campus building on July 10, 2020. The temporary sub-slab vapor sampling ports were installed using Vapor-Pin™ kit methodology by drilling a 5/8-inch hole through the concrete slab with a rotary-hammer drill. After the 5/8″ hole was drilled, a stainless-steel vapor pin equipped with a silicone sleeve was installed in the 5/8″ hole to seal the sample space below the slab from the atmosphere above. A water dam was then installed around each vapor pin by sealing a two-inch diameter PVC collar to the concrete floor using non-VOC putty. Water was then placed inside the PVC collar and around the vapor pin. The water dam remained in place until the entire process finished.

Laboratory provided purge manifold assemblies were utilized at all sample locations. The sampling train was then connected to the Summa can as follows: A two-way valve was connected to the vapor pin and a three-way valve was connected in-line between the two-way valve and the Summa canister. A syringe for purging was then connected to the three-way valve using new silicone tubing. This setup allowed the sample train to be a closed



system, not allowing air inside the building to contaminate or dilute the sample. Shut-in tests were performed prior to sampling at each location to ensure each the system was free of leaks.

Following completion of the shut-in test, at least three volumes of air were purged out of the sample line with the syringe prior to sample collection. The samples were collected in 1-L summa canisters equipped with 200 ml/min flow regulators and dedicated in-line moisture filters. The sub-slab vapor samples were submitted under chain-of-custody control to Pace Analytical for analysis of VOCs by method EPA TO-15. A PID equipped with a 10.6 eV source lamp was connected to the tubing for field screening purposes upon the completion of the summa can sample collection. Sub-slab soil vapor locations are shown on **Figure 8.** Soil Vapor Field Sampling forms are included in **Appendix B**.

Multiple sub-slab samples were collected from various locations throughout the course of this investigation. A general soil vapor sampling summary is provided below:

Vapor Probe ID	Rationale	Sample Depth	Laboratory Analysis	PID Reading (ppm)
SS-1	Assess potential soil vapor impacts on Subject Property associated with solvent use in the R&D Laboratory of the South Campus building.	Sub-slab (6-8'')	TO-15 VOCs	0.0
SS-2	Assess potential soil vapor impacts on Subject Property associated with solvent use in the R&D Laboratory of the South Campus building.	Sub-slab (6-8'')	TO-15 VOCs	0.2
SS-3	Assess potential soil vapor impacts on Subject Property associated with solvent use in the R&D Laboratory of the South Campus building.	Sub-slab (6-8'')	TO-15 VOCs	0.1
SS-4	Assess potential soil vapor impacts on Subject Property associated with solvent use in the R&D Laboratory of the South Campus building.	Sub-slab (6-8'')	TO-15 VOCs	0.1

#### 5.7 SEDIMENT SAMPLING

During the initial RI, lead was identified at concentrations in excess of the Tier 1 SQT along the north bank of Lambert Creek and above the Tier 2 SQT within the east stormwater retention basin. Sediment samples were collected east of the previous RI sample locations and the east stormwater pond during the SRI to determine if lead concentrations observed on the property are consistent with a naturally occurring lead concentrations. During the SRI total lead concentrations were identified above the MPCA Level 1 SQT in 10 of the 14 sediment samples collected from the Site and three sediment samples identified lead concentrations above the MPCA Level II SQT.

Sediment samples were collected from the west stormwater pond, south stormwater pond and from Lambert Creek per the MPCA comments in the Supplemental Remedial Investigation Summary letter dated March 9, 2020 and the Supplemental Remedial Investigation Work Plan letter dated May 28, 2020.

To assess potential lead and 1,4-dioxane sediment impacts three (3) sediment samples were collected from the west stormwater pond at the North Campus, one (1) sample was



collected from the south stormwater pond at the South Campus and one (1) sample was collected from the north bank of Lambert Creek to the west of Otter Lake Road.

Sediment samples were collected from the upper 0.5' to 1' of sediment on July 9, 2020 and July 15, 2020 using a hand push-probe sampling device. The sediment sample locations are shown on **Figure 9** and geographic coordinates for each sampling location are summarized in **Table 1**. The sediment samples were collected directly in dedicated glassware, placed in a cooler with ice and submitted under chain-of-custody control to Pace Analytical for laboratory analysis of total lead by EPA Method 6010D and 1,4-dioxane by EPA Method 8260D. Blind duplicate and trip blank samples were submitted with the sediment samples for QA/QC purposes.

A general sediment summary is provided below:

Sample ID	Sample Location	Sample Collection Date	Laboratory Analysis
Sed-23	North bank of Lambert Creek, west of Otter Lake Road	July 9, 2020	Pb, 1-4- Dioxane
Sed-24	South side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane
Sed-25	East side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane
Sed-26	North side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane
Sed-27	West side of the south stormwater pond at the South Campus facility	July 9, 2020	Pb, 1-4- Dioxane

# 5.8 SURFACE WATER SAMPLING

Lead was detected above the Tier 1 Surface Water Screening Criteria in three (3) of the six (6) samples collected from Lambert Creek during the initial RI. During completion of the SRI, Wenck collected 14 surface water samples from Lambert Creek at locations to the east of the previous RI sample locations. Additionally, two (2) roof drain downspout samples were collected during a rain event on October 21, 2019 to assess the stormwater runoff from the North Campus building roof discharging to the east stormwater pond.

Lead was detected above the Tier 1 Surface Water Screening Criteria of 6.72 ug/L in six (6) of the samples collected from Lambert Creek. Total lead concentrations observed in the 14 surface water samples ranged from non-detect to a high of 640 ug/L. The highest total lead concentration was observed within a tributary of Lambert Creek located upgradient of the facility along the very eastern edge of the property. The downspout samples revealed very low levels of lead (1.6 and 2.7 ug/L) indicating the facility roof does not appear to be a significant source of lead to the eastern stormwater pond or adjacent wetland.

To assess potential lead and 1,4-dioxane impacts to surface water, three samples were collected from the west stormwater pond at the North Campus, and one sample was collected from the north bank of lambert creek to the west of Otter Lake Road.

The surface water samples were collected using a dedicated disposable polyethylene bailer on July 9, 2020 and July 15, 2020. Locations of surface water samples are depicted on **Figure 10** and geographic coordinates for each sampling location are summarized in **Table 1**. The surface water samples were collected directly in dedicated glassware, placed in a



cooler with ice and submitted under chain-of-custody control to Pace Analytical for laboratory analysis of total lead by EPA Method 6010D/6020B, total hardness by EPA method 2340B and 1,4-dioxane by EPA Method 8270SIM. Blind duplicate and trip blank samples were submitted with the surface water samples for QA/QC purposes.

A general surface water soil sampling summary is provided below:

Sample ID	Sample Location	Sample Collection Date	Laboratory Analysis
SW-21	North bank of Lambert Creek, west of Otter Lake Road	July 9, 2020	Pb, 1-4- Dioxane
SW-22	South side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane
SW-23	East side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane
SW-24	North side of the west stormwater pond at the North Campus facility	July 9, 2020	Pb, 1-4- Dioxane

# 5.9 GROUNDWATER TO SURFACE WATER MONITORING

During the SRI one groundwater monitoring well was installed adjacent to Lambert Creek and a stream staff gauge was installed in Lambert Creek to allow the measurement of the creek level. In an effort to determine if Lambert Creek is gaining or losing system groundwater measurements were collected from the shallow monitoring well and stream gauge adjacent to Lambert Creek on multiple occasions between November 2019 and February 2020 during the SRI.

; however, it is inconclusive whether groundwater at the Site discharges to the ditch located south of the North Campus building.

Continuous water level monitoring is on-going to further assess the groundwater and surface water interaction. On April 24<sup>th</sup>, 2020 pressure transducers were installed in the monitoring well (MW-1) and on the creek gauge. Based on the data collected between April and September 2020, Lambert Creek appears to be exhibiting a losing characteristic. The water levels observed in the creek appear to be generally higher than the levels observed in the monitoring well. Groundwater and creek level data are summarized in **Table 3**.

## 5.10 RESIDENTIAL WELL SAMPLING

In January/February 2020, the MDH sampled seven (7) private wells near the Water Gremlin facility for the presence of 1,4-dioxane. The MDH sampling the compound in three (3) of the seven (7) wells sampled. 1,4-Dioxane was detected at a concentration of 0.12 ug/L in a sample collected from a residence at 1416 Birchcrest Drive, located approximately 0.3-mile west-northwest of the North Campus facility; at a concentration of 0.059 ug/L in a sample collected from a residence at 1543 Goose Lake Road, located approximately 0.55-mile south-southwest of the North Campus Facility; and at a concentration of 0.1 ug/L in a sample collected from a residence at 1433 Goose Lake Road, located approximately 0.86-mile southwest of the North Campus facility.

Based on the results of the MDH domestic well sampling a well receptor survey of drinking water wells within a one-mile radius of the Water Gremlin facility was completed. The April



2020 well receptor survey identified 168 properties within 1-mile of the Water Gremlin facility as having wells. The wells identified were in one of the status types; active, assumed active or unknown well status. In May 2020, a letter questionnaire was sent to approximately 100 of the residents with wells identified at their properties requesting participation in water quality testing. As a result, 47 residents verified the presence of a well on their property and requested water testing.

Residential well sampling was completed between July 20 to 31, 2020 at 44 properties (one resident was moving and changed their mind on sampling and two residents did not respond to our request to access the property to collect a sample) in the Gem Lake area. Samples were collected prior to any type of ancillary water treatment system located within the residence.

Samples were collected using the Standard Operating Procedure (SOP) included in **Appendix C**. The samples were collected from exterior faucets or spigots with the shortest distance outdoor plumbing "run" from the well holding tank where possible. Prior to sample collection the well was purged by running the tap for 15-20 minutes on high to remove water from the pressure tank and cause the well pump to activate. This allowed for the collection of a sample representative of the aquifer in which the well has been constructed.

After the initial purging period, the flow was reduced to minimize disturbance / turbulence during sample collection. After purging, the drinking water samples were collected in prepreserved laboratory-provided dedicated glassware, placed in a cooler with ice and submitted under chain-of-custody control to Pace Analytical Services, LLC for laboratory analysis for 1,4-dioxane using EPA Method 522. Blind duplicate and trip blank samples were submitted with the drinking water samples for QA/QC purposes.

Locations of residential wells sampled during this investigation are shown on Figure 11.



#### 6.1 SOIL INVESTIGATION RESULTS

#### 6.1.1 Surficial Geology

During the Additional SRI activities, 23 soil borings were advanced throughout the Site including the North Campus, South Campus and off-site to the west-southwest of Otter Lake Road to obtain geologic information. Soil boring locations are shown in **Figures 3,4** and **5.** Soil boring logs were prepared for each boring and are included in **Appendix A**. A cross-section index map is depicted in **Figure 12**, and geologic cross-sections of the Site are provided in **Figures 13 through 16**.

Unconsolidated sediment profiles across the Site varied from the north and south parcels. In the shallow interior borings (SB-18 through SB-23) and exterior borings (GP-38 through GP-42) surficial fill materials are comprised primarily of dark brown silty with gravel were identified from approximately 3 to 5 feet bg. Traces of concrete and a slight organic odor was noted in the upper 10 feet of the interior boring SB-19, completed in the east die cast area of the North Campus building. In general, the fill material was underlain by poorly graded fine sand.

In the soil boring GP-37 completed along the northern property boundary, fine- to very-fine grained sand/silty sand was observed in the upper 35-feet and groundwater was first encountered at approximately 15-feet bg. Silt and clay content increased with depth and from approximately 40 to 90-feet bg alternating layers of silt, fat clay and sandy lean clay lacustrine sediments were observed. Moisture levels varied from slightly moist to saturated within the silty/clayey sediments and deep groundwater samples were collected from 65-69-feet bg and from 80-84-feet bg. The fine silty and clayey sediments were underlain by poorly graded sand which was medium to coarse grained, very dense and water bearing. Probe GP-37 was terminated at a depth of 100-feet bg.

At boring locations GP-36, GP-43 and GP-48, completed southwest of the North Campus building, soils consisted primarily of very-fine organic silt and clay sediments containing laminated beds of silts, clays, sandy clay and fine silty sands in the upper 40-feet bg. Limited granular sediments were observed in the upper 10-feet bg at GP-36, completed adjacent to the southwest corner of the North Campus building. Saturated conditions were commonly observed within the silty/clayey sediments and multiple groundwater samples were collected from various intervals within the upper 40-feet of GP-36, GP-43 and GP-48. At GP-36 the lacustrine sediments were underlain by poorly graded sand from approximately 40-feet bg feet to 60-feet where a five-foot sandy clay layer was encountered and from approximately 65-feet to the boring terminus at 70-feet bg.

In the borings GP-34, GP-35, GP-44, GP-45, GP-46, GP-47, GP-49 and GP-50 completed on the southern portion of the Site (south of Lambert Creek) sandy clay till was observed in the upper 35 to 40-feet. Thin lenses of silt, silty sand, clayey sand, fat clay and lean clay (commonly two [2] to four [4]-feet in thickness) were observed with the upper clay unit. In general, the upper clay unit contained fewer saturated lenses on the southern portion of the Site. The sandy clay was underlain by poorly graded water bearing sand which was encountered from 40 to 100-feet bg at GP-34, from 40 to 90-feet bg at GP-35, from 35 to 75-feet bg at GP-49 and from 45 to 100-feet bg at GP-50.



# 6.1.2 Field Screening Results

Soil headspace readings and field observations are included on the soil boring logs in **Appendix A**. Total organic vapor screening results ranged from non-detect to 6.4 partsper-million (ppm) in the soil borings GP-34 through GP-50 completed throughout exterior portions of the Site and SB-18 through SB-23 completed within the North Campus building.

In SB-19 fill soil with a slight organic odor was observed in the upper 10-feet; however, no elevated PID readings or evidence of staining were observed.

In the boring GP-37 slightly elevated PID readings ranging from 3.7 to 8.9 ppm were observed from 70 to 90-feet bg; however, the readings were observed to be from the plastic baggies and not related to soil conditions. PID readings collected from empty baggies for verification purposes exhibited readings up to 20 ppm. The bags were discarded and new baggies were purchased for headspace screening.

Per the approved Additional SRI Work Plan, soil samples for VOC and 1,4-dioxane analysis were collected at the interval(s) revealing the highest PID response or at intervals revealing visual evidence of potential contamination. In the absence of obvious soil impacts (i.e., elevated PID readings) a soil sample was collected just above the observed unconfined water table.

# 6.1.3 Soil Analytical Results

Soil samples were collected from the shallow push probe soil borings GP-38 through GP-42, SB-18 through SB-23 and the boring GP-36 for laboratory analysis of VOCs and 1,4-dioxane. At the soil boring locations GP-45, 46, and GP-47 (completed near the South Campus building) soil samples were collected from the upper 0-1-foot interval for analysis of total lead and just above the unconfined water table between 9 and 15-feet bg for VOC and 1,4-dioxane analysis.

Soil lead and VOC data were compared to the Minnesota Pollution Control Agency's Tier 2 Industrial Soil Reference Values (SRVs) and Soil Leaching Values (SLVs) for evaluation of potential risk to groundwater at the Site from the soil-to-groundwater leaching pathway.

### <u>Lead</u>

Lead was detected above laboratory reporting limits in all three (3) of the soil samples collected during this Additional SRI. Lead was detected at a concentration of 17.8 in GP-45 (0-1), at a concentration of 5.7 mg/kg in GP-46 (0-1) and at a concentration of 5.9 mg/kg in GP-47 (0-1). The detected concentrations of lead did not exceed their respective Tier 2 SRV or SLV.

#### **VOCs**

VOCs were not detected above their respective laboratory reporting limits in any of the soil samples collected during this phase of investigation.

# 1,4-Dioxane

Fifteen soil samples were collected for analysis of 1,4-dioxane during this Additional SRI. 1,4-Dioxane was not detected above laboratory reporting limits in any of the soil samples collected at the Site during phase of investigation.



Cumulative soil sample results are summarized in **Table 4**. Laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

#### 6.2 GROUNDWATER INVESTIGATION RESULTS

# 6.2.1 Hydrogeology

During completion of the multiple phases of investigation conducted to date shallow groundwater levels have been measured from as shallow as 0.8 feet bg and as deep as 11.5 feet bg throughout the Site.

At the soil boring GP-34 completed on the southern portion of the Site, clayey soils with alternating layers of sandy clay and fat clays were encountered in the upper 40-feet underlain by poorly graded sand. Saturated lenses were not observed within the upper clayey sediments and groundwater samples were collected from the buried sand aquifer from 47-50-feet bg, 75-78-feet bg and 97-100-feet bg.

Similar conditions were observed at GP-35 with the exception of one (1) groundwater sample was able to be collected from the upper clayey sediments from 14-17-feet bg. Groundwater samples were collected from the buried sand aquifer from 47-50-feet bg, 68-72-feet bg and 88-90-feet bg.

At the soil boring location GP-36, completed adjacent to the southwest corner of the North Campus building, limited granular sediments were observed in the upper 10-feet bg underlain by clayey lacustrine sediments. Groundwater samples were collected from the shallow unconfined aquifer and from saturated lenses within the clayey lacustrine sediments from 8-10-feet bg, 13-17-feet bg, 24-26-feet bg and 38-40-feet bg. Groundwater samples were collected from the underlaying buried sand aquifer from 53-57-feet bg and 68-70-feet bg.

In the soil boring GP-37 completed along the northern property boundary, groundwater was encountered in the upper water bearing granular sediments from approximately 15 to 35-feet bg. Multiple groundwater samples were collected from this shallow unconfined aquifer at 15-18-feet bg, 23-26-feet bg, 31-34-feet bg and from 38-40-feet bg. Saturated zones were observed within the underlaying clayey lacustrine sediments and groundwater samples were collected from 65-69-feet bg and from 80-84-feet bg and one sample was collected from the underlaying buried sand aquifer at 96-100-feet bg.

The soil boring GP-43 was completed off-site to the west of Otter Lake Road (west-southwest of the North Campus building). Soils consisted of primarily of clayey lacustrine sediments with multiple saturated lenses to the boring terminus at 40-feet bg. Groundwater samples were collected from 6-9-feet bg, 14-17-feet bg, 22-25-feet bg, 30-33-feet bg and from 38-40-feet bg.

GP-44 was completed on the southern portion of the Site, near the northeast corner of the South Campus building. Sandy clay soils with alternating layers of fat clay were encountered in the upper 34-feet underlain by poorly graded sand from 34 to 40-feet bg. Few saturated lenses were observed within the clayey sediments and only one groundwater sample was collected from above the buried sand aquifer at 24-27-feet bg. A sample was also collected from the underlaying buried sand aquifer from 37-40-feet bg.



In the soil boring GP-45 completed adjacent to the south of the South Campus building, clayey soils with alternating layers of silt and fat clays were encountered in the upper 30-feet underlain by poorly graded sand from 30 to 40-feet bg. A groundwater sample was collected from the upper clayey sediments from 11-14-feet bg and groundwater samples were collected from the buried sand aquifer from 29-32-feet bg and 37-40-feet bg.

Similar conditions were observed at GP-46 completed to the east of the South Campus building. Groundwater samples were collected from the upper clayey sediments from 9-12-feet bg and 17-20-feet bg and groundwater samples were collected from the buried sand aquifer from 30-33-feet bg and 38-40-feet bg.

At GP-47 completed to the west of the South Campus building, sandy clay soils with alternating layers of fat clay were encountered in the upper 34-feet underlain by poorly graded sand from 34 to 40-feet bg. Groundwater samples were attempted from 15-18-feet bg and 31-34-feet bg; however, there was insufficient water for sampling. A groundwater sample was collected from the buried sand aguifer from 38-40-feet bg.

Groundwater was encountered at approximately 11.4-feet bg in the boring GP-48 which was completed adjacent to the southern bank of Lambert Creek. Water bearing soils were observed between approximately 11 and 34-feet bg in GP-48 and underlain by clayey sediments to the boring terminus at 40-feet bg. Groundwater samples were collected from 9-12-feet bg, 25-27-feet bg and 31-34-feet bg and a deeper sample was attempted from 39-41-feet bg; however, there was insufficient water for sampling.

At the soil boring GP-49 completed on the southern portion of the Site, clayey soils with alternating layers of sandy clay, silt and fat clays were encountered in the upper 35-feet underlain by poorly graded sand to the boring terminus at 75-feet bg. Groundwater samples were collected from the upper clayey sediments from 10-12-feet bg and 17-20-feet bg and groundwater samples were collected from the buried sand aquifer from 45-47-feet bg, 57-59-feet bg and 73-75-feet bg.

The soil boring GP-50 was completed off-site to the west of Otter Lake Road and southwest of the North Campus building. Soils consisted of primarily of organic peat underlain by clayey lacustrine sediments with multiple saturated lenses to 45-feet bg and underlain by poorly graded sand from 45 to 100-feet bg. Groundwater samples were collected from the upper clayey lacustrine sediments at 15-18-feet bg and 35-38-feet bg and groundwater samples were collected from the buried sand aquifer from 45-47-feet bg, 58-60-feet bg, 78-80-feet bg and 98-100-feet bg.

Water levels are noted in the boring logs included as **Appendix A** and shown on cross-sections **Figures 13 through 16**.

# **6.2.2 Groundwater Analytical Results**

A total of 53 groundwater samples collected from the soil borings were analyzed for VOCs, 1,4-dioxane and dissolved lead. Groundwater investigation data was compared to drinking water standards: Minnesota Department of Health's (MDH's) Health Risk Limits (HRLs) and Health Based Values (HBVs) as well as the EPA's Maximum Contaminant Levels (MCLs) to assess potential human health risks from exposures to chemicals in groundwater.



# **VOCs**

VOC compounds including 1,1-DCA, 1,1-DCE, TCE and toluene were detected above their laboratory reporting limits during this investigation.

At GP-36 (24-26) 1,1-DCA was detected above laboratory limits but below the HRL of 80 ug/L at a concentration of 2.85 ug/L and 1,1-DCE was detected above laboratory limits but below the HRL of 200 ug/L at a concentration of 1.98 ug/L.

TCE was detected above the MDH HRL of 0.4 ug/L in GP-36 (13-17) at a concentration of 1.30 ug/L.

Toluene was detected above laboratory reporting limits but below its HRL of 200 ug/L at the following sample locations: GP-43 (38-40) at 1.58 ug/L, GP-44 (37-40) at 1.04 ug/L, GP-45 (11-14) at 1.41 ug/L, GP-45 (37-40) at 1.16 ug/L, DUP070120 (duplicate of GP-45 (37-40)) at 1.23 ug/L, and GP-46 (30-33) at 1.15 ug/L.

### 1,4-Dioxane

1,4-Dioxane was detected above laboratory reporting limits in 26 of the 53 samples collected and analyzed during this phase of investigation. At 13 locations 1,4-dioxane was detected above the MDH HRL of 1 ug/L at the following concentrations: 28.5 ug/L at GP-34 (97-100), 1.2 ug/L at GP-36 (13-17), 1.1 ug/L at GP-36 (24-26), 3.0 ug/L at GP-36 (38-40) and the duplicate sample Dup 063020, 2.6 ug/L at GP-37 (38-40), 2.8 ug/L at GP-37 (65-69), 9.7 ug/L at GP-37 (80-84), 1.1 ug/L at GP-37 (96-100), 3.2 ug/L at GP-44 (37-40), 1.4 ug/L at GP-46 (30-33), 1.1 ug/L at GP-50 (58-60) and 2.4 ug/L at GP-50 (78-80).

#### **Dissolved Lead**

Dissolved lead was not detected above laboratory reporting limits in any of the 53 groundwater samples collected and analyzed.

Cumulative groundwater laboratory analytical results are summarized in **Table 5**. VOC data are also presented in plan view in **Figure 17** and in cross-sectional view in **Figures 13 through 16**. Laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

# 6.3 SOIL VAPOR INVESTIGATION RESULTS

The soil vapor data collected from within the South Campus research and development space was compared to the MPCA's 33x ISVs to evaluate potential vapor intrusion risk. These guidelines were developed by the MPCA and serve as the state regulatory screening values for vapor intrusion risk in residential and commercial/industrial settings. If soil gas concentrations are equal to or greater than 33x the applicable ISVs (Residential or Industrial), more thorough soil gas investigation and/or considerations for vapor mitigation may be required.

#### 6.3.1 South Campus Sub-Slab Vapor Sampling Results

Vapor assessment activities were completed at four locations (SS-1 through SS-4) inside the research and development portion of the building South Campus building per the MPCA Work Plan Approval letter dated May 28, 2020.



Various VOCs were detected in the four sub-slab soil vapor samples SS-1, SS-2, SS-3 and SS-4; however, none of the detected concentrations of VOCs exceeded 33x their respective Industrial ISVs.

Sub-slab soil vapor laboratory analytical results for the South Campus building are summarized in **Table 6.** Complete laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

#### 6.4 SEDIMENT INVESTIGATION RESULTS

## 6.4.1 Sediment Description

A total of five (5) sediment samples were collected during this phase of investigation. The sediment sample SED-23 was collected off-site to the west of Otter Lake Road and from the north bank of Lambert Creek. The samples SED-24, SED-25 and SED-26 were collected from the south, east and north sides of the west stormwater pond, respectively. The sample SED-27 was collected from the inlet on the on the west side of the South Campus stormwater pond.

Sediments encountered along the north bank of Lambert Creek generally consisted of saturated, dark brown to black organic rich clays containing organics (roots, pieces of wood and decomposing plant parts) with organics odors.

The sediment samples collected from the west stormwater pond consisted of gray, poorly graded fine sand with organics. The sample collected from the south stormwater pond consisted of gray, very fine-grained clayey sand with organics.

# 6.4.2 Sediment Analytical Results

Sediment sample analytical results were compared to SQTs criteria established by the MPCA and its collaborators as sediment assessment tools. MPCA guidance for the development of the SQTs is used to characterize the toxicity of the sediment to sediment-dwelling organisms based on the data collected at the site. For VOCs, which do not currently have Level II SQTs, the MPCA Residential SRVs are used as a surrogate SQT for the purposes of this evaluation.

**Level I SQTs** are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms (i.e., benthic invertebrates) are unlikely to be observed. Chemical concentrations at SQT Level 1 concentrations or lower are unlikely to have an adverse effect on benthic invertebrates.

**Level II SQTs** are intended to identify contaminant concentrations above which some harmful effects on sediment-dwelling organisms are likely to be observed.

#### Lead

Low levels of lead were detected in all five (5) of the sediment samples collected at the Site. Lead was identified at a concentration exceeding the MPCA Level I SQT of 36 mg/kg in the sample collected from Lambert Creek, west of Otter Lake Road (SED-23) at a concentration of 86.1 mg/kg.



In the sediment samples collected from the west stormwater pond lead concentrations ranged from 4.3 to 26 mg/kg and lead was detected at a concentration of 5.5 mg/kg in the sample collected from the south stormwater pond.

Sediment sample results are summarized on **Table 7** and depicted on **Figure 18**. Complete laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

#### 6.5 SURFACE WATER INVESTIGATION RESULTS

Surface water sample analytical results were compared to the MPCA Tier I Surface Water Screening Criteria for non-Outstanding International Resource Waters (ORVW) and Outstanding Resource Value Waters (OIRW) waters. Lambert Creek is identified within the Mississippi River Basin – Twin Cities watershed as "Unnamed Creek (Lambert Creek); Highway 96 to Vadnais Lk: #07010206-801." The MPCA Beneficial Use Classification for Lambert Creek is classified a 2B, 3C, 4A, 4B, 5 and 6 water body.

The surface water sample SW-21 was collected off-site from the north bank of Lambert Creek and west of Otter Lake Road. The surface water samples SW-22, SW-23 and SW-24 were collected from the south, east and north sides of the west stormwater pond, respectively.

# <u>Lead</u>

Lead was detected above laboratory reporting limits in all of the surface water samples collected during this phase of investigation.

The detected concentration of 0.62 ug/L in SW-21 did not exceed the hardness adjusted Tier I Surface Water Criteria. Lead was detected above the hardness adjusted Tier I Surface Water Criteria of 6.72 ug/L in SW-22 at 618 ug/L, at 802 ug/L in SW-23 and at 2,780 in the SW-23 duplicate sample (SW-DUP-070920), and at 4,040 ug/L in SW-24.

#### 1,4-Dioxane

There are no established Tier I Surface Water Criteria for 1,4-dioxane; however, the detected concentration of 1,4-dioxane of 1.1 ug/L at SW-23 exceeded the MDH HRL of 1 mg/kg. 1,4-Dioxane was detected at a concentration of 0.62 ug/L in SW-21, below the MDH HRL and 1,4-dioxane was not detected above laboratory reporting limits in the samples SW-22 or the duplicate sample SW-DUP-070920 or SW-24.

# **Total Hardness**

Total hardness was detected at a concentration of 87,600 ug/L in SW-21, at a concentration of 151,000 ug/L in SW-22 and the duplicate sample SW-DUP-070920, at a concentration of 107,000 ug/L in SW-23 and at a concentration of 765,000 ug/L in SW-24.

Surface water analytical results are summarized on **Table 8**. Sample results are depicted on **Figure 19**. Complete laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

# 6.6 MONITORING WELL AND CREEK WATER LEVEL RESULTS

Groundwater and stream level measurements were collected using pressure transducers between April and August 2020. Manual groundwater measurements were taken using an electronic tape to a precision of 0.01 feet and referenced the top of the PVC riser pipe until



April 2020 when the transducers were installed in the monitoring well and to the stream gauge. The data was downloaded from the transducers on multiple occasions and have been summarized in **Table 3**. Manual water level measurements are summarized in the table below.

Date	Depth to Water (feet)	Elevation (feet above MSL)	Stream Level (feet)	Stream Elevation (feet above MSL)
November 21, 2019	0.8	912.14	9.02	912.35
December 5, 2019	2.62	912.74	Frozen conditions	
December 11, 2019	2.61	912.75	Frozen conditions	
January 7, 2020	2.62	912.74	Frozen conditions	
January 31, 2020	2.35 (frozen)	913.01	Frozen conditions	
April 24, 2020	2.71	912.65	2.65	912.71
May 1, 2020	2.63	912.73	2.57	912.79

Based on the manual and transducer data collected to date, Lambert Creek appears to be losing surface water to groundwater. When creek elevations exceed the groundwater elevation, groundwater is being discharged from the creek base into the shallow groundwater environment. It is anticipated that this condition can vary throughout the year, but based on the data collected to date, Lambert Creek appears to exhibit a losing characteristic.

#### 6.7 RESIDENTIAL WELL SAMPLING RESULTS

Due to the low level detections of 1,4-dioxane identified in private domestic wells during the MDH well sampling event in January/February 2020 and the presence of 1,4-dioxane previously identified in the groundwater above the established HRL at the Water Gremlin facility, private domestic wells were sampled between July 20 to 31, 2020.

The private domestic well sampling was completed at 44 residential properties located approximately 0.3- to 1-mile south and southwest of the North Campus building. The drinking water samples were collected from exterior faucets/spigots prior to any type of ancillary water treatment system located within the residence for laboratory analysis for 1,4-dioxane using EPA Method 522.

# 1,4-Dioxane

1,4-Dioxane was detected at a concentration of 0.23 ug/L in a sample collected from a residence at 1430 Goose Lake Road, located approximately 0.95 mile southwest of the North Campus Facility; at a concentration of 0.8 ug/L in a sample collected from a residence at 1337 Goose Lake Road, located approximately 1.06-mile southwest of the North Campus Facility; and at a concentration of 0.95 ug/L in a sample collected from a residence at 1299 Goose Lake Road, located approximately 1-mile southwest of the North Campus facility.

1,4-Dioxane was not detected above laboratory reporting limits in the samples collected from the remaining 41 residences.



Residential well analytical results are summarized in **Table 9** and sample results are depicted on **Figure 11**. Complete laboratory reports and supporting chain-of-custody documentation are included in **Appendix D**.

# 6.8 INVESTIGATION ANALYTICAL RESULTS QUALITY ASSURANCE/QUALITY CONTROL

During the Additional SRI field activities Wenck collected numerous QA/QC samples that were submitted to the lab for analysis. Wenck collected matrix spike (MS) and matrix spike duplicate (MSD) samples, blind duplicate samples, trip blanks and rinsate samples. Samples QA/QC samples for this project are identified in the sections below.

# 6.8.1 Blind Duplicate Sample Summary

Sample ID	Parent Sample ID	Date	Lab ID	Sample Type
Dup 06302020	GP-36 (38-40)	6/30/2020	10523355008	Groundwater
Dup 062920	GP-37 (23-26)	6/29/2020	10523363004	Groundwater
DUP070120	GP-45 (37-40)	7/1/2020	1052352011	Groundwater
DUP_070920	GP-50 (58-60)	7/9/2020	10524484007	Groundwater
SW-DUP-070920	SW-22	7/9/2020	10524485004	Surface Water
DUP073120	780334	7/31/2020	10527002002	Drinking Water
Dup072820	1000023758	7/28/2020	10526538002	Drinking Water
DUP200724	1633 Goose Lk Rd	7/24/2020	10526218002	Drinking Water
DUP072920	1624 Goose LK Rd	7/29/2020	10526688002	Drinking Water
DUP072120	4140 Otter Lk Rd	7/21/2020	10525692002	Drinking Water
DUP072320	4100 Scheuneman Rd	7/23/2020	10526073002	Drinking Water

# 6.8.2 Matrix Spike/Matrix Spike Duplicate Sample Summary

Sample ID	Date	Lab ID	Analysis
GP-35 (47-50)	6/25/2020	10522971002	VOC, 1,4-Dioxane, Dissolved lead
GP-40 (3-4)	6/30/2020	10523363010	VOC, 1,4-Dioxane, Dissolved lead
GP-37 (96-100)	7/1/2020	10523518003	VOC, 1,4-Dioxane, Dissolved lead
SB-21 (3-5)	7/7/2020	10523948004	VOC, 1,4-Dioxane
GP-50 (45-47)	7/9/2020	10524484004	VOC, 1,4-Dioxane, Dissolved lead

Sample ID	Date	Lab ID	Analysis
SW-23	7/9/2020	10524485006	VOC, 1,4-Dioxane, Dissolved lead, Total hardness
SED-26	7/9/2020	10524485007	1,4-Dioxane, Total lead
823988	7/31/2020	10526991001	1,4-Dioxane
641460	7/24/2020	10526212001	1,4-Dioxane
1624 Goose LK Rd	7/29/2020	10526688001	1,4-Dioxane
4136 Scheuneman Rd	7/22/2020	10525818001	1,4-Dioxane

# 6.8.3 Trip Blank Summary

Sample ID	Sampling Event Date	Lab ID	Organic Detections
Trip Blank	6/23/2020	10522729005	No Detections
HCL Trip Blank	6/25/2020	10522971005	No Detections
Trip Blank	6/29/2020	10523355010	No Detections
Trip Blank	6/29/2020	10523355011	No Detections
Water Trip Blanks	6/29/2020	10523363007	No Detections
Soil Trip Blanks	6/29/2020	10523363008	No Detections
HCL Trip Blank	6/30/2020	10523518005	No Detections
Trip Blank	7/2/2020	10523661004	No Detections
Trip Blank	7/2/2020	10523658004	No Detections
Trip Blank	7/2/2020	10523658005	No Detections
MeOH Trip Blank	7/7/2020	10523948008	No Detections
Trip Blank	7/7/2020	10524056006	No Detections
TRIP BLANK	7/1/2020	1052352017	No Detections
TRIP BLANK	7/1/2020	1052352018	No Detections
HCL TRIP BLANK	7/9/2020	10524484009	No Detections
MeOH TRIP BLANK	7/9/2020	10524485010	No Detections

Note: The laboratory provided all trip blanks.



# 6.8.4 Rinsate Sample Summary

Rinsate Summary			
Sample ID	Sampling Event	Lab ID	Detections
Rinsate-06232020	6/23/2020	10522729003	1,4-Dioxane @ 2.1 ug/L
Rinsate 06302020	6/30/2020	10523355003	No Detections
Rinsate 070720	7/7/2020	10523948006	No Detections
RINSATE-070120	7/1/2020	1052352011	No Detections
RINSATE-070120-B	7/1/2020	1052352015	No Detections
Rinsate-070920	7/9/2020	10524484001	2-Butanone (MEK) @ 16.1 ug/L

## 6.8.5 QA/QC Summary

The data quality objectives outlined in the Additional SRI Work Plan were followed throughout the investigation. Wenck contracted Diane Short & Associates to review the laboratory reports and QA/QC data. Upon review of the laboratory data qualifiers applicable to this investigation, with any exceptions noted on the validation forms and the text below, it is Wenck's opinion that the qualified data does not affect the outcome of the Additional SRI activities discussed in this report. The validation forms and EDD reports associated with the 2020 Additional SRI sampling lab data are included in **Appendix E**.

# 6.8.5.1 Validation Summary - Air

Sample Data Groups (SDGS): 10524499

Data in the above-referenced SDGs are considered to be usable for project purposes. No qualifiers are added data tables. Data are fully usable with consideration of the potential biases.

# 6.8.5.2 Validation Summary - Inorganics (Water and Soil)

SDGs: 10523363, 10523661, 10523518, 10522729, 10522971, 10523355

The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV. The laboratory has complied with the requested method. Data are fully usable with consideration of the qualifiers that have been applied.

### <u>Deliverables:</u>

The following are noted for clarification:

Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead, including 2 field



duplicates and 2 field blanks. Hard copy data were not required, and the full package was provided as pdf. Results are incorporated into the associated EDD.

There were no case narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

# Chain of Custody and Sample Preservation:

Chain of Custody documents met criteria.

Cooler temperatures were within acceptance limits. For soil samples there is no additional preservation required for lead. For water samples, the COCS request lab filtration for dissolved lead. Although the lab filtration is not documented in the report, dissolved lead is reported so the validator must assume the filtration was conducted in the lab.

# Field Blanks:

The following field blanks were identified in the data set.

SDG	FB
10522729	Rinsate-06232020
10523355	Rinsate 063020

The field blanks had no detections of lead.

#### Matrix Spikes and Matrix Duplicates:

The samples used for MS/MSDs in this set are shown below.

SDG	Matrix MS/MSD Parent Sam	
10522971	Water	GP-35 (47-50)
10523363	Water	GP-37 (15-18)
10523518	Water	GP-37 (96-100)

# Serial Dilution:

All samples are non-detects for lead. Serial dilutions are not required.

#### Field Duplicates:

The client has identified field duplicate sets as shown in the table below:

	Field Duplicate	
SDG	ID	Sample ID
10523355	Dup 063020	GP-36 (38-40)
10523363	Dup 062920	GP-37 (23-26)

Field duplicates met criteria.



SDGs: 10523520, 10523658, 10524056, 10524484, 10524485, 10524981.

#### Deliverables:

Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead in water, including 2 field duplicates and 3 field blanks. 7 samples for total lead in solids. Hard copy data were not required, and the full package was provided as pdf. Results are incorporated into the associated EDD.

There are no Case Narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

# Chain of Custody and Sample Preservation:

Cooler temperatures were within acceptance limits. For soil samples there is no additional preservation required for lead. For water samples, the COCS request lab filtration for dissolved lead. Although the lab filtration is not documented in the report, dissolved lead is reported so the validator must assume the filtration was conducted in the lab.

#### Field Blanks:

The following field blanks were identified in the data set.

SDG	FB
10523520	RINSATE-070120
10523520	RINSATE-070120-B
10524484	Risate-070920

No lead contamination was observed in field blanks.

# Matrix Spikes and Matrix Duplicates:

The samples used for MS/MSDs in this set are shown below. Other MS/MSDs are present in the report but are not reviewed since they are associated with different SDGs.

SDG	Matrix	MS/MSD Parent Sample
10524056	Water	GP-49 (10-12)
10524484	Water	GP-50 (45-47)
10524485	Solid	SED-26
10524485	Water	SW-23
10524981	Water	SW-21

All MS/MSD recoveries were within criteria.



# Field Duplicates:

The client has identified field duplicate sets as shown in the table below. There are no field duplicates in this set or the previous set to meet the overall project frequency of 1/20.

SDG	Field Duplicate ID	Sample ID	Matrix
10523520	DUP070120	GP-45 (37-40)	Water
10524484	DUP_070920	GP-50 (58-60)	Water
10524485	SW-DUP- 070920	SW-22	Water

There are no outliers requiring qualification. If the RPD is >50%, the qualifier added is JFD#, where # is the RPD observed. As the RPD increases, the precision decreases.

Validation qualifiers have been added to the appropriate inorganic data tables.

# 6.8.5.3 Validation Summary - Organics (Water and Soil)

SDGs:10523363, 10523661, 10523518, 10522729, 10522971, 10523355

The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV. The laboratory has complied with the requested method. The laboratory has complied with the requested method. Data are fully usable; qualifiers were added in the data tables as necessary.

#### Deliverables:

The following are noted for clarification:

This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and one (1) compound (1,4-dioxane) by method 8270E-SIM. Data were provided for eight (8) solid and 38 aqueous samples for 8260D which includes two (2) aqueous field duplicates, two (2) methanol solids trip blanks, six (6) aqueous trip blanks, and two (2) rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including two (2) field duplicates and 2 rinsate blanks. Hard copy data were not required, and the full packages were provided as pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.

None of the main project reports include a case narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.

A case narrative is included in the Pace National data packages (VOA analysis). However, it is really not a case narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a case narrative. In addition, it is inaccurate in that it states that samples were all properly preserved and received at the proper temperature.



Pace National was used for the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

# Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements.

#### pH:

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within seven (7) days of the collection dates. Any deviations from this are listed below.

10522729: A note on the COC indicated that for GP-34 (97-100), there were three (3) vials that did not have HCl added due to a strong reaction. The sample checklist shows that VOA sample to be out of compliance with preservation requirements. However, on the preparation log the pH check for that sample indicates that the pH was < 2.

10522971: GP-35 (14-17) was shown on the VOA prep log as having a pH of 7. The COC indicates that 3 vials did not have HCl added but did not indicate which ones. Since all other samples had a pH of <2, the assumption seems reasonable that this is the only sample impacted. The sample was run in less than seven (7) days from collection, so no qualifiers are required.

10523355: GP-36 (8-10), GP-36 (24-26), and GP-36 (53-57) are shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. Samples were analyzed within seven (7) days of collection, so no qualifiers are required.

10523363: GP-43 (30-33) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed within seven (7) days of collection, so no qualifiers are required.

10523518: GP-37 (65-59) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10523661: GP-48 (8-12) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed on



the 9th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

# **Initial Calibration:**

Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full 8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30% (with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of > 0.99 is also acceptable for compounds not meeting a % RSD of < 20%.

1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and calibration checks is very low. The response of this analyte is known to be low due to its high water solubility and consequential poor purging behavior. The laboratory has calibrated using higher levels for this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the LCS. Therefore, it is qualified as JC# instead of rejected for low response. Results tabulated within this report have been qualified. The professional opinion of the validator is that there is not a significant low bias, despite the qualifiers.

# **Continuing Calibration:**

Method 8260D: There are several high responses for tetrachloroethene and trichloroethene. All but one (1) of these are associated with non-detected results in samples and require no qualifiers. One (1) of them, however, required a qualification for trichloroethene as shown below.

Method 8270E-SIM: Continuing calibrations are all in control.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-36 (13- 17)	10523355004	Trichloroethene	1.3	ug/L	0.19	JC29	J+

# **Internal Standards:**

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard. Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

# Surrogates:



All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits anyway. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

#### Matrix Spikes and MS Duplicates:

Method 8260D: There are no MS/MSDs provided for method 8260D. There are MS/MSDS present, but they are for different SDGs and are not evaluated The MSD for GP-35(47-50) is recovered high at 155%. The spiked sample contains no detectable 1,4-dioxane so this possible high bias does not require qualification. Detected data would be qualified JMS#, where # is the value of the %R. In this case there are no qualifiers required.

#### <u>Laboratory Control Samples:</u>

Several percent recoveries were outside the project QC limits of 60-130% for tetrachloroethene, but all associated samples are non-detects. No qualifiers are required for this apparent high bias.

# Equipment Rinse Blank, Trip Blanks or other Field Blanks:

All field blanks are acceptable.

#### Field Duplicates

The client has identified field duplicate sets as shown in the table below:

	Field Duplicate	
SDG	ID	Sample ID
10523355	Dup 063020	GP-36 (38-40)
10523363	Dup 062920	GP-37 (23-26)



Field duplicate criteria were met in all cases.

# SDGs: <u>10523520, 10523658, 10523948, 10524056, 10524484, 10524485, 10524981</u>

#### Deliverables:

The following are noted for clarification:

This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and 1 compound (1,4-dioxane) by method 8270E-SIM. Data were provided for 18 solid and 31 aqueous samples for 8260D which includes two (2) aqueous field duplicates, four (4) methanol solids trip blanks, four (4) aqueous trip blanks, and four (4) rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including three (3) field duplicates and 4 rinsate blanks. Hard copy data were not required, and the full packages were provided as pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.

Note that in SDG 10524485, only 1,4-dioxane is reported in the solids VOA analysis. Volatiles were not requested on the COC, only 1,4-dioxane. The lab performed this analysis in soils by method 8260D.

None of the main project reports include a Case Narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.

A Case Narrative is included in the Pace National data packages (VOA analysis). However, it is really not a Case Narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a Case Narrative.

Pace National was used for some of the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

# Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements.

#### pH:

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within seven (7) days of the collection dates. Any deviations from this are listed below.



10523520: Several water samples were shown as having a pH of approximately 7. Samples were analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10524056, 10524484, 10523658: Several water samples were shown as having a pH of approximately 7. Samples were analyzed in seven (7) days or less. No qualifiers are required.

# **Holding Time**

One trip blank for 8260 in SDG 10523520 was analyzed after 16.6 days from the sample date. Since trip blanks are prepared in the laboratory, and consist of laboratory water, the holding time is not as meaningful as it is for field samples as no biodegradation is expected and the sample is kept refrigerated in some manner for the majority of the time. No qualifiers are added.

#### Calibrations:

Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full 8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30% (with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of > 0.99 is also acceptable for compounds not meeting a % RSD of < 20%.

1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and calibration checks in the data from Pace National is very low. The response of this analyte is known to be low due to its high-water solubility and consequential poor purging/extraction behavior. The laboratory has calibrated using higher levels for this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the LCS. Therefore, it is qualified as JC# instead of rejected for low response. The results tabulated in the body of this report have been qualified. The professional opinion of the validator is that there is not a significant low bias, despite the qualifiers.

In the data from Pace Minnesota, the laboratory also reports 1,4-dioxane from soils using Method 8260D. However, the laboratory uses 1,4-dioxane-d8 as the internal standard and the response factors are not low. No qualifiers are applied to these results for calibration response.

# **Internal Standards:**

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard.



Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

## Surrogates:

All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

# Matrix Spikes and MS Duplicates:

Method 8260D: There is one MS/MSD for water and one MS/MSD for solids. A second MS/MSD is present for water, but it was conducted on a rinsate blank and is not representative of the site matrix. The frequency requirement of MS/MSDs is met for soils, but not for waters. In order to meet the Representativeness criteria for the PARCCs, the client is required to choose the MS/MSD sample to best represent the current event and designate it to the laboratory.

There are two MS/MSDS provided for 1,4-Dioxane by 8270E SIM. This meets the frequency requirements for this method.

There are other MS/MSDs present for both methods, but they are associated with other projects and are not evaluated.

SDG	Matrix	MS/MSD sample	Methods
10523948	Solid	SB-21 (3-5)	8260D
	Water	Rinsate 070720	8260D



SDG	Matrix	MS/MSD sample	Methods
10524484	Water	GP-50 (45-47)	8260D
	Water	GP-50 (45-47)	8270E-SIM
10524485	Solid	SED-26	8260D
10524485	Water	SW-23	8270E-SIM

All MS/MSDS are in control.

# Equipment Rinse Blank, Trip Blanks or other Field Blanks:

No contamination of client compounds was detected in field blanks.

# Field Duplicates:

Field duplicate criteria were met in all cases for water. There are no field duplicates for the soils in this set or the previous set and the project frequency is not met.

In SDG 10524485, sample SW-23 had 1,4-dioxane reported twice in the EDD and the report. One of the results shows a reporting limit of 0.25 ug/L and the other a limit of 0.5 ug/L. The lower RL result is 1.1 ug/L and the other is a non-detect. The laboratory has offered no explanation of the reason for the reanalysis or any comment about which result should be used (no Case Narrative). Qualifiers in the laboratory report, as well as the run log, indicates that an emulsion was present in the lower RL result analysis. The original run (that with the detected analyte) had low surrogate and internal standard recoveries, which may be the reason for the reanalysis given the presence of emulsions.\

Where there were detected targets, the match with the library spectra were acceptable and retention times were within limits. The exception is with the 8270E data for 1,4-dioxane, where the reference spectra appear to be contaminated with non-target masses. Despite this issue, the ratios of the quantitation and confirmation masses used are consistent with those in the reference spectrum. No qualifiers are added.

The run with detected analyte shows the expected masses for 1,4-dioxane. However, it is not possible to appropriately compare it to the reference because the reference spectrum shown appears to contain extraneous mass peaks.

Validation qualifiers have been added to the appropriate organic data tables.



#### 7.1 GENERAL

Wenck's professional opinions on the locations of known contamination and affected media are based on the field observations and laboratory analytical results during the investigation. The results for each of the sampled environmental media are presented on the attached tables and discussed in the sections below. SRI sample locations are shown on **Figures 3 through 11**.

#### 7.2 SOIL CONDITIONS

A total of 18 soil samples were collected during this phase of investigation, 15 soil samples for analysis of VOCs and 1,4-dioxane by EPA Method 8260B, and three (3) soil samples for analysis of lead by EPA Method 6010D).

The detected concentrations of lead identified in the three (3) samples collected from the South Campus building appeared to be within what is typically considered "naturally occurring" levels and did not exceed the Industrial SRV or Screening SLV.

VOCs and 1,4-dioxane were not detected above their respective laboratory reporting limits in any of the soil samples collected at the Site during this phase of investigation.

#### 7.3 GROUNDWATER CONDITIONS

A total of 53 groundwater samples collected from soil borings were analyzed for VOCs, 1,4-dioxane and dissolved lead.

The detected concentrations of 1,1-DCA and 1,1-DCE at GP-36 (24-26) and toluene at GP-43 (38-40), GP-44 (37-40), GP-45 (11-14), GP-45 (37-40) and DUP070120, and GP-46 (30-33) did not exceed their respective HDH HRL/HBVs or EPA MCLs. TCE was detected above the MDH HRL of 0.4 ug/L at one location (GP-36 13-17') at a concentration of 1.30 ug/L. No other VOC compounds were detected above their respective laboratory reporting limits during this investigation.

Dissolved lead was not detected above laboratory reporting limits in any of the 53 groundwater samples collected and analyzed.

The compound 1,4-dioxane (Method 8270SIM) was identified in 13 groundwater samples collected during this phase of investigation above the HRL of 1.0 ug/L.

VOCs in groundwater were detected near and down-gradient (south and southeast) of the suspected historic source areas located beneath the building. The installation of permanent groundwater monitoring wells is recommended to monitor volatile, semi-volatile (1,4-dioxane) and natural attenuation parameters in the shallow groundwater table aquifer.

Additional assessment of the deeper confined aquifer (potable) should be evaluated for potential impacts from past releases. This evaluation will focus on the on-site, upgradient and downgradient conditions of the Site.



#### 7.4 SOUTH CAMPUS SUB-SLAB VAPOR CONDITIONS

Various VOCs were detected in the four sub-slab soil vapor samples SS-1, SS-2, SS-3 and SS-4 all of which were well below the respective 33X Industrial ISVs. Per MPCA guidance, one additional round of sub-slab vapor samples (heating season) will be collected to confirm the non-heating season sample results.

### 7.5 SEDIMENT CONDITIONS

A total of five (5) additional sediment samples were collected at the Site during the most-recent SRI activities. Total lead concentrations were identified above the MPCA Level 1 SQT in one (1) sample collected from the north bank of Lambert Creek, to the west of Otter Lake Road. Lead was not identified above the Level 1 SQTs in the sediment samples collected from the west ponds located adjacent to the North Campus building or the south stormwater pond associated with the South Campus Building.

Level I SQTs are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms (i.e., benthic invertebrates) are unlikely to be observed. Chemical concentrations at SQT Level 1 concentrations or lower are unlikely to have an adverse effect on benthic invertebrates. Level II SQTs are intended to identify contaminant concentrations above which some harmful effects on sediment-dwelling organisms are likely to be observed.

Based on the data collected to date it appears that anthropogenic deposition of lead has occurred in the wetland area south and east of the facility and within Lambert Creek. The highest concentrations of lead were observed at the inlet to and south of, the east stormwater pond between the pond outfall and Lambert Creek. Lead levels along Lambert Creek ranged from a low of 3.1 mg/kg to a high 137 mg/kg. The average of the 13 samples collected within Lambert creek is 67.0 mg/kg with a standard deviation of 38.8 mg/kg. Four (4) background samples (SED-9, SED-19, SED-20 and SED-21) were collected as part of the SRI activities. The background samples ranged from a low concentration of 9.9 mg/kg to a high of 103 mg/kg with an average of 42.8 mg/kg and a standard deviation of 33.1 mg/kg.

Based on the data set generated to date it appears anthropogenic lead deposition has likely occurred on the property. This phenomenon may have been a result of past and present lead production and/or aerial deposition of lead during the period when leaded gasoline automobiles traversed the area.

#### 7.6 SURFACE WATER CONDITIONS

County Ditch 14 is identified in the 2018 Inventory of Impaired Waters published by the MPCA as "Unnamed Creek (Lambert Creek) with the Assessment United Identifier (AUID) #07010206-801. The creek is listed as impaired for aquatic recreation due to fecal coliform and has been listed on the impaired water inventory since 2008. In the sample SW-21 collected from Lambert Creek to west of the North Campus building, lead was not detected above the Tier 1 Surface Water Screening Criteria of 6.72 ug/L. 1,4-Dioxane was detected at a concentration of 0.62 ug/L at SW-21, there is currently not an established Tier I Surface Water Criteria for 1,4-dioxane.

Lead was detected above the Tier I Surface Water Criteria of 6.72 ug/L in all four (4) samples collected from the west stormwater pond. The compound 1,4-dioxane was detected



at a concentration of 0.35 ug/L in the sample collected from Lambert Creek, west of Otter Lake Road (SW-21).

Wenck does not recommend additional surface water assessment for dissolved lead or 1,4-dioxane sampling at this time. Wenck does however recommend the east stormwater pond be cleaned out as a routine maintenance activity to reduce additional loading of leadimpacted sediments into the adjacent wetland and ultimately Lambert Creek.

# 7.7 OFF-SITE GROUNDWATER CONDITIONS

The semi-volatile compound 1,4-dioxane was identified in three (3) of the 44 residential wells sampled. The detected concentrations were below the MDH HRL of 1.0 ug/L. Well details were the 1,4-dioxane detections were observed is provided below.

According to available well records the well located at 1430 Goose Lake Road is associated with the unique well ID #641778 and was completed in May 2000. The well was completed to a depth of 169-feet bg and is screened from 160 to 169-feet bg in a sand and gravel unit. Static water was measured at 50-feet bg following installation of the well.

The well located at 1299 Goose Lake Road is associated with the unique well ID #654313. The well was completed in May 2003 and static water was measured at 92-feet bg. The well was completed to 155-feet bg and is screened in fine sand from 151 to 155-feet bg.

Well records were not identified for the well located at 1337 Goose Lake Road.

#### 7.8 EXPOSURE PATHWAY ANALYSIS AND RISK ASSESSMENT

The CSM for fate and transport formulated during the multiple phases of investigation conducted on and off-site have provided basis in identifying and evaluating the contamination mechanism, source media, transport mechanisms, and potential exposure media. The contaminated media identified to date includes soil vapor, glacial sediments, fluvial sediment, surface water and groundwater. These impacted media act as potential sources of contamination for transport to various receptors. Contaminants in sub-surface vapor may migrate into the breathing air space within the on-Site building, in soil to air via fugitive dust, to sediment via erosion, surface water through migration in groundwater, and to groundwater via leaching. The exposure pathways to a human receptor from the potential source media are discussed below:

A Vapor intrusion pathway: Indoor air exposure of VOCs through vapor intrusion could occur if sub-surface vapors migrate upward through the vadose zone into the interior spaces of the building, contaminating indoor air. Vapor may travel through the vadose zone and into the structure through the soils or through preferential pathways such as utility corridors that lead to a structure, utility connections at the structure, through the drain tile system and sump, through cracks or gaps in the building foundation, etc. Known vapor risk is currently being mitigated through subslab vapor depressurization. System monitoring is conducted on a regular basis to determine if the system is providing the required negative pressure differential beneath the building to ensure adequate protection for the occupants of the building. Deeper soil vapor extraction will commence as soon as the permanent vapor mitigation system is installed. The deeper vapor extraction is designed to remove vadose zone source(s) of volatile contamination beneath the building.



- ▲ Direct contact exposure pathway: Potential exposure of lead would likely occur from soil disturbance during any future excavation activities (e.g., building construction, utility installation, etc.) that could occur at the Site. Lead exposure may also occur during pond maintenance activities or potential creek dredging or rerouting activities.
- ▶ Drinking water exposure pathway: Potential impacted groundwater exposure would occur from the leaching of contaminated soil into the groundwater system, the migration of the contaminated groundwater to a potable water well, and the consumption or dermal contact of the withdrawn contaminated water. Groundwater quality data collected during the most-recent phase of investigation was consistent with past investigation findings. Testing of potable water supply wells located southwest of the Site has shown detectable levels of 1,4-dioxane. However, the levels were found to be below current drinking water standards. It is currently unclear as to whether the 1,4-dioxane found in the residential wells is originating from the Water Gremlin property. Additional investigation of the deeper potable water supply aquifer is warranted. This additional assessment will include a series of additional temporary and permanent monitoring wells.
- ▲ Groundwater to surface water risk pathway: During the SRI one groundwater monitoring well was installed adjacent to Lambert Creek. In addition, a stream staff gauge was installed in Lambert Creek to allow the measurement of the creek level. Based on the data obtained to date, it appears Lambert Creek loses water through its base into the local unconfined water table aquifer during the non-frozen months. Additional assessment is recommended during frozen months to determine if any seasonal variability exists between the creek and shallow groundwater.

Based on the field observations and laboratory analysis of soil, groundwater, surface water, sediment, soil vapor and indoor air samples collected and analyzed from the Site, Wenck submits the following conclusions:

- 1. The general geologic setting on the North Campus property consists of fill material underlain by water bearing granular sediments comprised of poorly graded fine sand and silty sand. Generally, the thickness of granular sediments was observed to be approximately 15 to 30 feet thick on the northern portion of the North Campus area to approximately 5 to 10 feet thick on the southern portions of the North Campus Area. This semi-confining unit is comprised of very fine organic silt and clay sediments containing highly laminated beds of silts, clays and very fine sands indicative of lacustrine deposits. The upper portions of the semi-confining unit include numerous layers of silt, silty sand, fine sand, clayey sand, fat clay and lean clay with high moisture content. Silt and clay content typically increased with depth becoming denser with fewer lenses of granular sediments. The semi-confining layer is estimated to be approximately 45 to 65 feet thick. Beneath this semi-confining layer is a clayey to silty sand unit overlaying a deeper buried glacial aguifer. South of Lambert Creek the shallow sandy sediments transition into a clay to silty/sandy clay unit that extends from the surface to approximately 35 to 40 feet bg. Alternating layers varying from thin lenses of silt, silty sand, clayey sand, fat clay and lean clay varying from two (2) to four (4) feet thick were commonly observed with the upper clay unit on the South Campus property. In general, the upper clay unit contained fewer saturated lenses on the southern portion of the South Campus Property. The upper clay unit was underlain by poorly graded water bearing sand unit which was encountered from approximately 35 to 100-feet bg.
- 2. Soil samples collected during the June July 2020 investigation activities did not reveal total lead, 1,4-dioxane or any individual VOC above applicable risk-screening criteria.
- 3. Groundwater impacts by VOCs were observed generally consistent with past investigations. The distribution of the VOCs in the groundwater environment on the Water Gremlin property continues to indicate a predominant southerly flow direction. The installation of permanent groundwater monitoring wells is recommended to 1) evaluate flow characteristics in the shallow and deep aquifers, 2) monitor concentrations and overall distribution of dissolved-phase VOCs and 3) assess monitored natural attenuation.
- 4. During the most-recent phase of investigation, the semi-volatile compound 1,4-dioxane was identified in the shallow and deeper groundwater aquifers in excess of the HRL of 1.0 ug/L on the Water Gremlin property south of Lambert Creek. Additional investigation in the shallow unconfined and deeper confined aquifer is warranted. Wenck recommends the collection of additional grab water samples to further evaluate the 1,4-dioxane plume configuration surrounding the Water Gremlin Property to the north and south.



- 5. Forty-four (44) residential wells were sampled in the Gem Lake area south of the Water Gremlin property. Three (3) of the 44 wells sampled revealed 1,4-dioxane above the laboratory limits. None of the three (3) detections were above the HRL of 1.0 ug/L. Wenck does not recommend further evaluation of off-site drinking water receptors at this time.
- 6. During the most-recent phase of investigation activities associated with the South campus building four (4) sub-slab vapor samples were collected during the non-heating season within the research and development space in the South Campus building. None of the samples collected revealed the presence of soil vapors in excess of applicable risk-screening criteria requiring additional investigation or active mitigation. A second round of sub-slab vapor samples will be collected during the upcoming heating season as required by MPCA guidance.
- 7. During the most-recent phase of investigation, lead was identified in sediment sample SED-23 collected in Lambert Creek west of Otter Lake Road at a concentration in excess of the Tier 1 SQT. Three (3) sediment samples were collected from the west stormwater pond and one (1) from the South Campus pond with none revealing lead above the Tier 1 SQT of 36 mg/kg. Wenck does not believe the west stormwater pond is a source of lead impacts observed in Lambert Creek. Based on all past investigation related to lead in sediment, the highest concentrations of lead have been identified within and downgradient of the east stormwater pond. No additional sediment evaluation is recommended at this time; however, it is recommended the east stormwater pond be dredged to remove lead-impacted sediment.
- 8. During the most-recent phase of investigation of the Site, lead was not identified at concentrations in excess of Tier 2 Surface Water Screening Criteria in Lambert Creek west of Otter Lake Road. No further evaluation of lead in surface water is recommended at this time.
- 9. Assessment of the Lambert Creek shallow groundwater interaction during the non-frozen months has revealed that Lambert Creek generally exhibits a losing characteristic. Additional evaluation is recommended during the frozen months to determine if there is any seasonal variability.
- 10. A full-scale temporary vapor mitigation system has been operational at the facility since September 2019. The final sub-slab depressurization / soil vapor extraction system has been installed and will become operational by the end of October 2020. Vapor mitigation detail will be provided to the MPCA for review under separate cover.

# 9.0 Standard of Care

The standard of care for all professional services performed by Wenck and presented within this report is the care, skill, and diligence used by members of the consulting services profession practicing under similar circumstances at the same time and in the same locality. Wenck makes no warranties, express or implied, with respect to this report or otherwise, in connection with Wenck's services.

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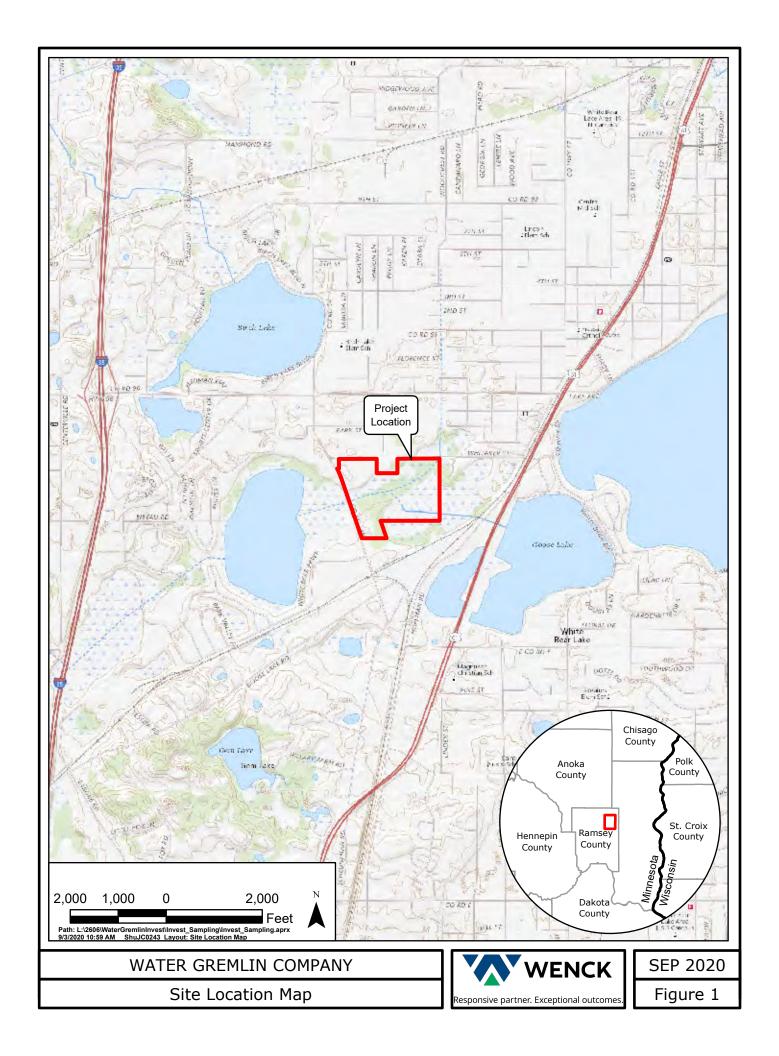
# **Figures**

Site Location Map Figure 1 Figure 2 Remedial Investigation Area Detail Map Figure 3 2020 SRI Sample locations Figure 4 Soil Boring Locations Figure 5 **Interior Soil Boring Locations** Figure 6 Soil Sample Locations Figure 7 Groundwater Sample Locations Figure 8 South Campus Sub-Slab Sample Locations Figure 9 Sediment Sample Locations Figure 10 Surface Water Sample Locations Figure 11 Residential Well Sample Locations Figure 12 Cross-Section Index Map Figure 13 Geologic Cross-Section A-A' Figure 14 Geologic Cross-Section B-B' Figure 15 Geologic Cross-Section C-C' Figure 16 Geologic Cross-Section D-D'

Figure 17 VOCs & 1,4-dioxane in Groundwater

Figure 18 Sediment Sample Results

Figure 19 Surface Water Sample Results





Remedial Investigation Area Detail Map



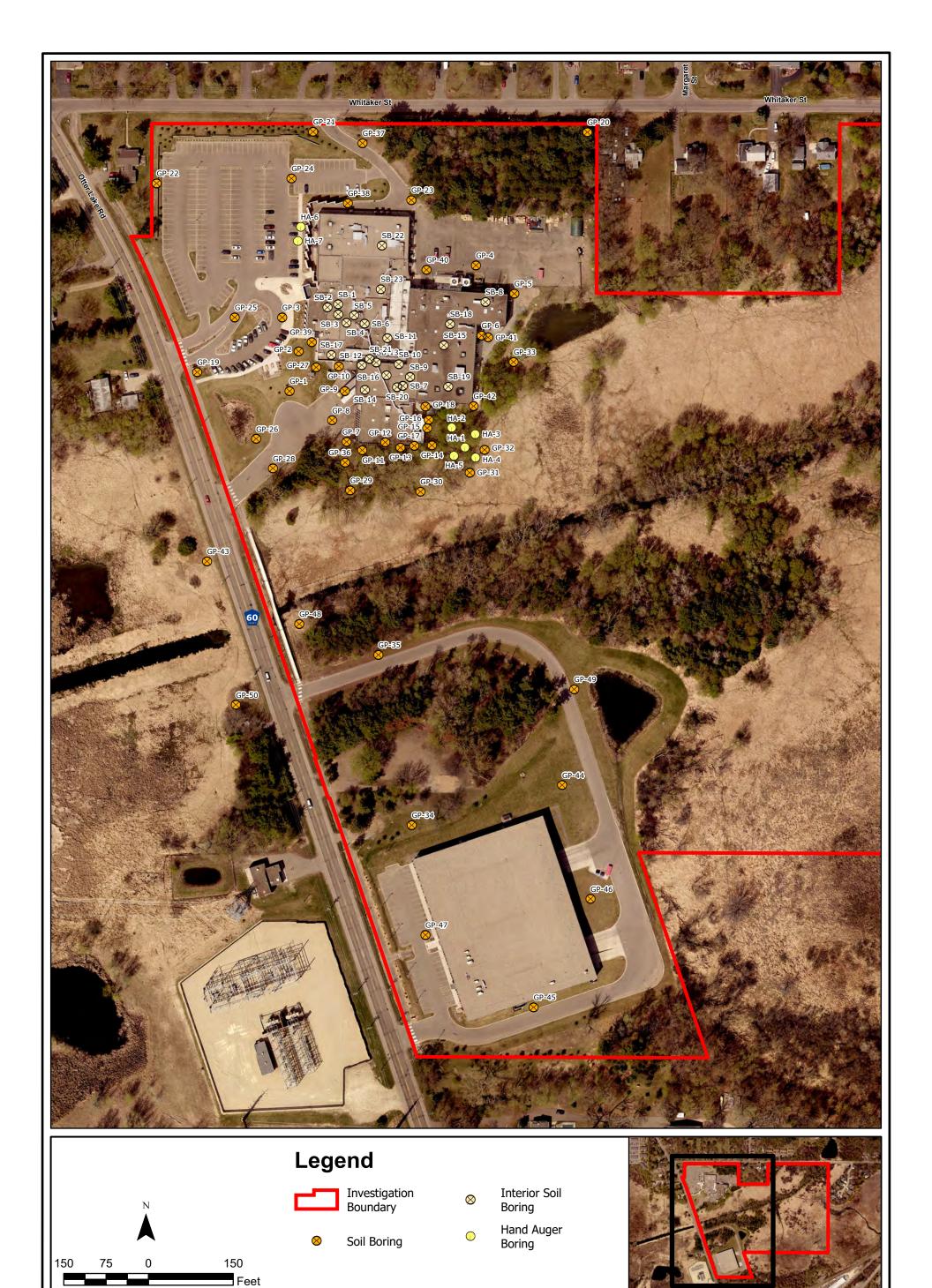
SEP 2020



2020 SRI Sample Locations



SEP 2020



Soil Boring Locations



SEP 2020



Interior Soil Boring Locations



SEP 2020





Investigation Boundary

Soil Sample Locations

- Interior Soil
  Boring
- Hand Auger Boring



# WATER GREMLIN COMPANY

Soil Sample Locations



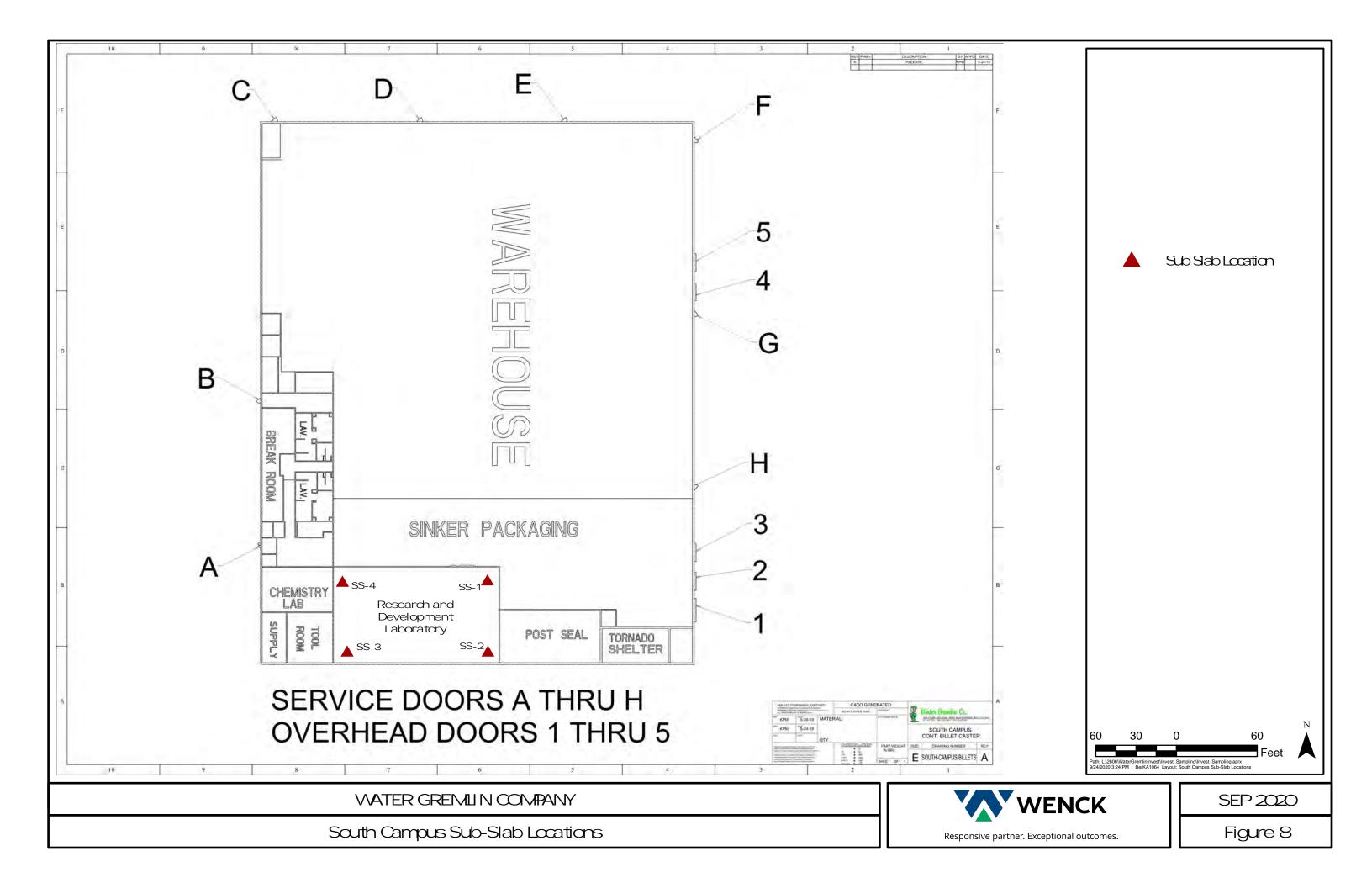
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**Groundwater Sample Locations** 



SEP 2020





WATER GREMLIN COMPANY

Sediment Sample Locations



SEP 2020

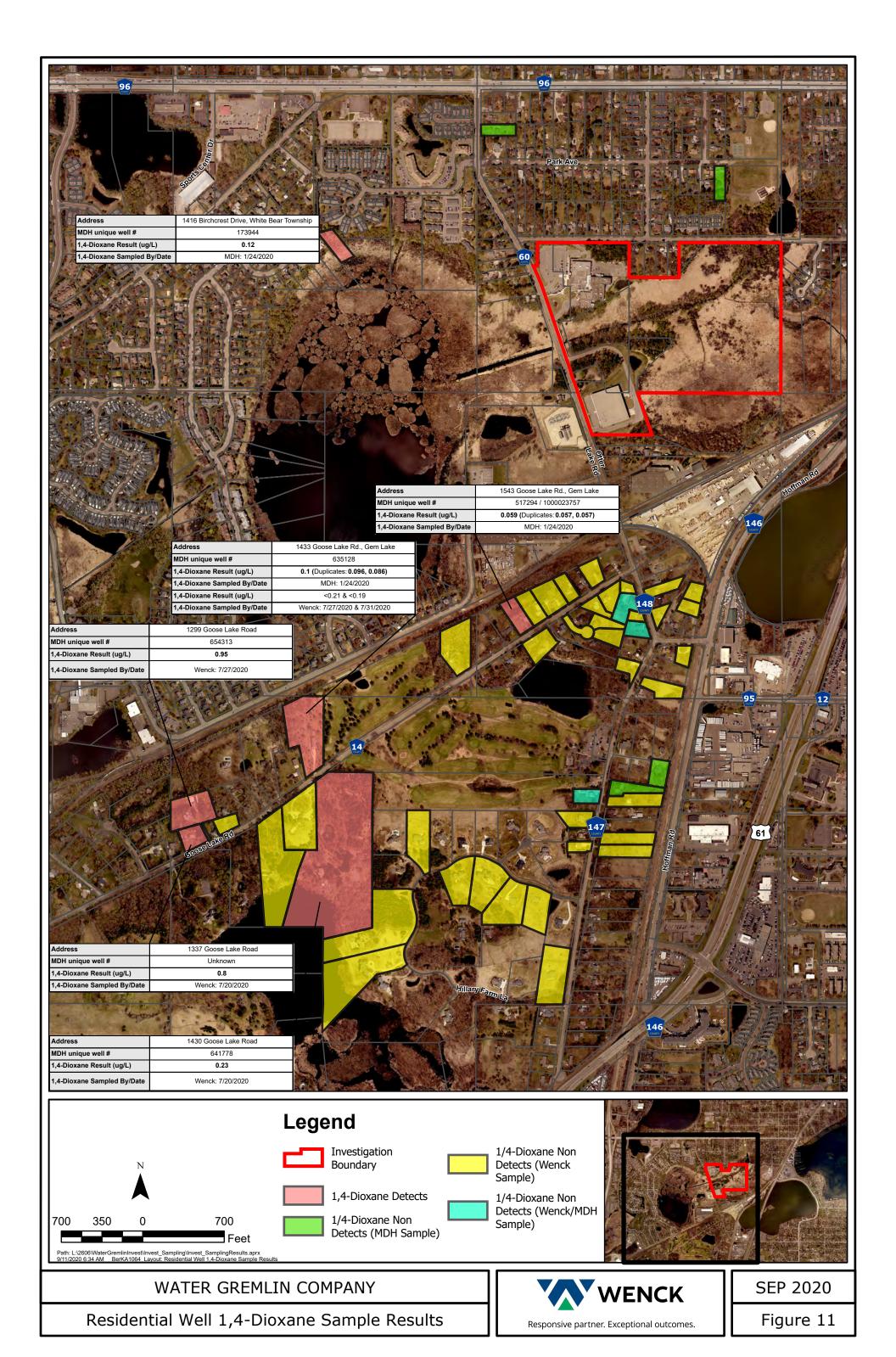


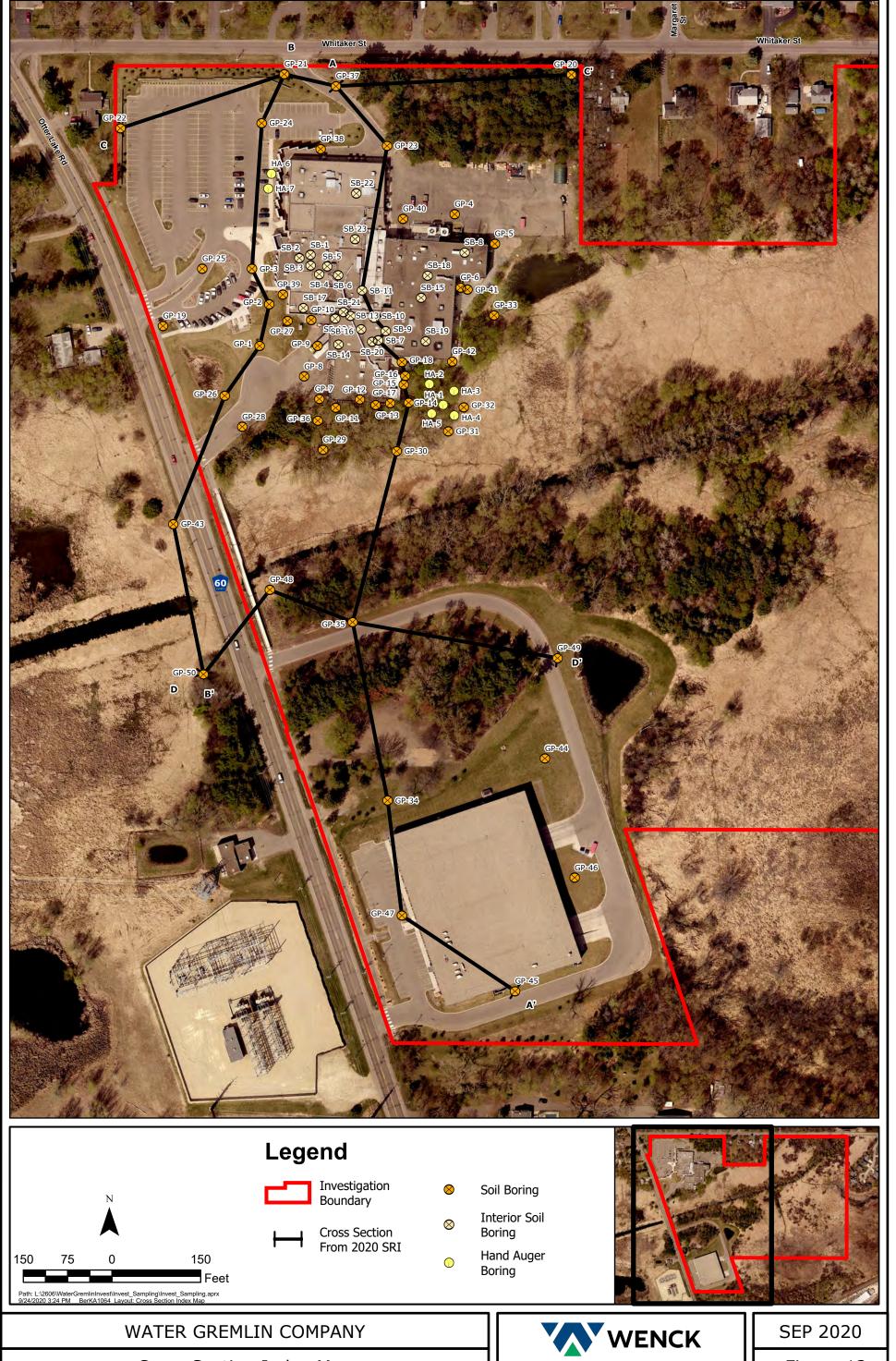
WATER GREMLIN COMPANY

Surface Waters Sample Locations



SEP 2020





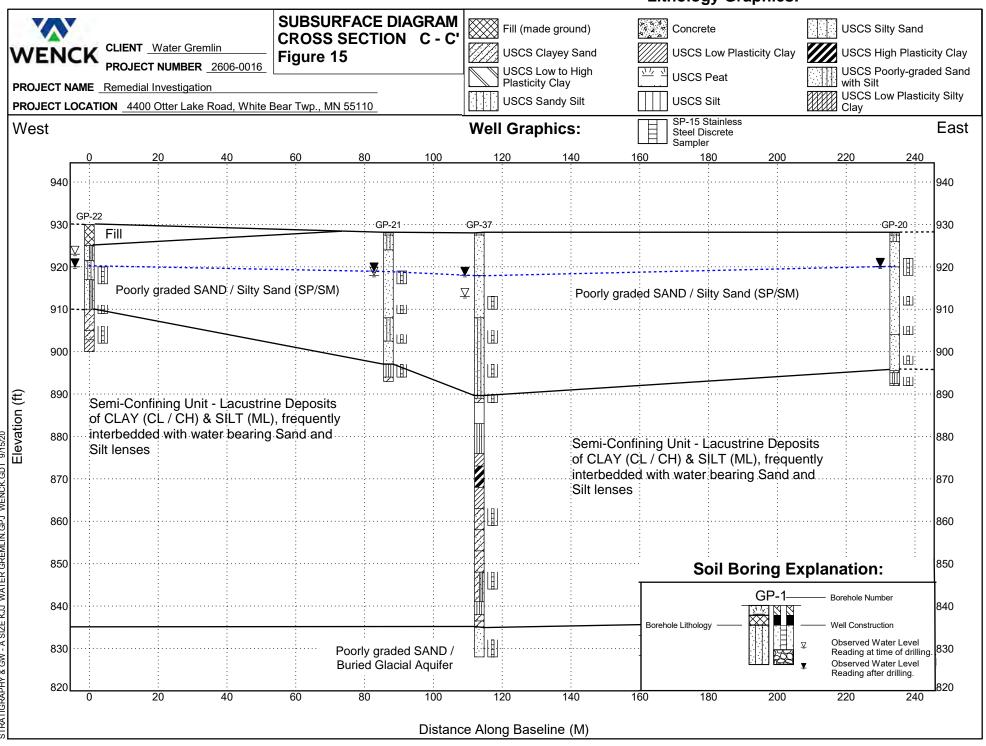
Cross Section Index Map



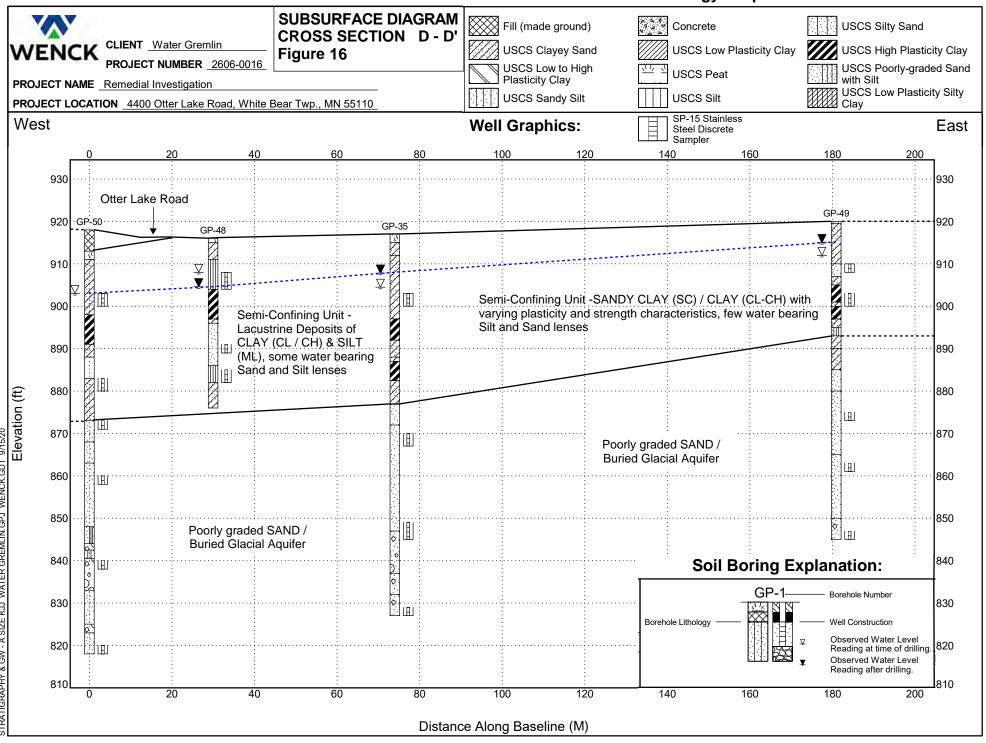
**Soil Boring Explanation: Lithology Graphics: SUBSURFACE DIAGRAM** CLIENT Water Gremlin GP-1-Fill (made ground) Concrete USCS Silty Sand PROJECT NUMBER 2606-0016 CROSS SECTION A - A' USCS High Plasticity Clay WENCK PROJECT NAME Remedial Investigation Borehole Lithology **USCS Clayey Sand** USCS Low Plasticity Clay Figure 13 Observed Water Level Reading at time of drilling USCS Low to High Plasticity Clay USCS Poorly-graded Sand with Silt **PROJECT LOCATION** 4400 Otter Lake Road, White Bear Twp., MN 55110 USCS Peat Observed Water Level USCS Low Plasticity Silty Clay Well Graphics: Reading after drilling. Steel Discrete **USCS Sandy Silt** USCS Silt North South 940 North Campus Building: SB-11 SB-10SB-9 930 930 **GP-37 GP-23** Fill South Campus Building Lambert Creek **GP-47 GP-45** 920 920 GP-35 **GP-34** Poorly graded SAND / Silty Sand (SP/SM) SANDY CLAY (SC) few water □ Peat bearing Silt and Sand lenses 910 900 Elevation Semi-Confining Unit -SANDY CLAY (SC) / CLAY (CL-CH) with varying plasticity and strength Щ characteristics Semi-Confining Unit - Lacustrine Deposits of CLAY (CL / CH) & SILT (ML), frequently interbedded with water bearing Sand and Silt lenses 870 870 Ħ 860 860 Poorly graded SAND / Buried Glacial Aquifer 850 850 840 840 830 830 Poorly graded SAND / Buried Glacial Aquifer 820 820 810 200 150 Distance Along Baseline (M)

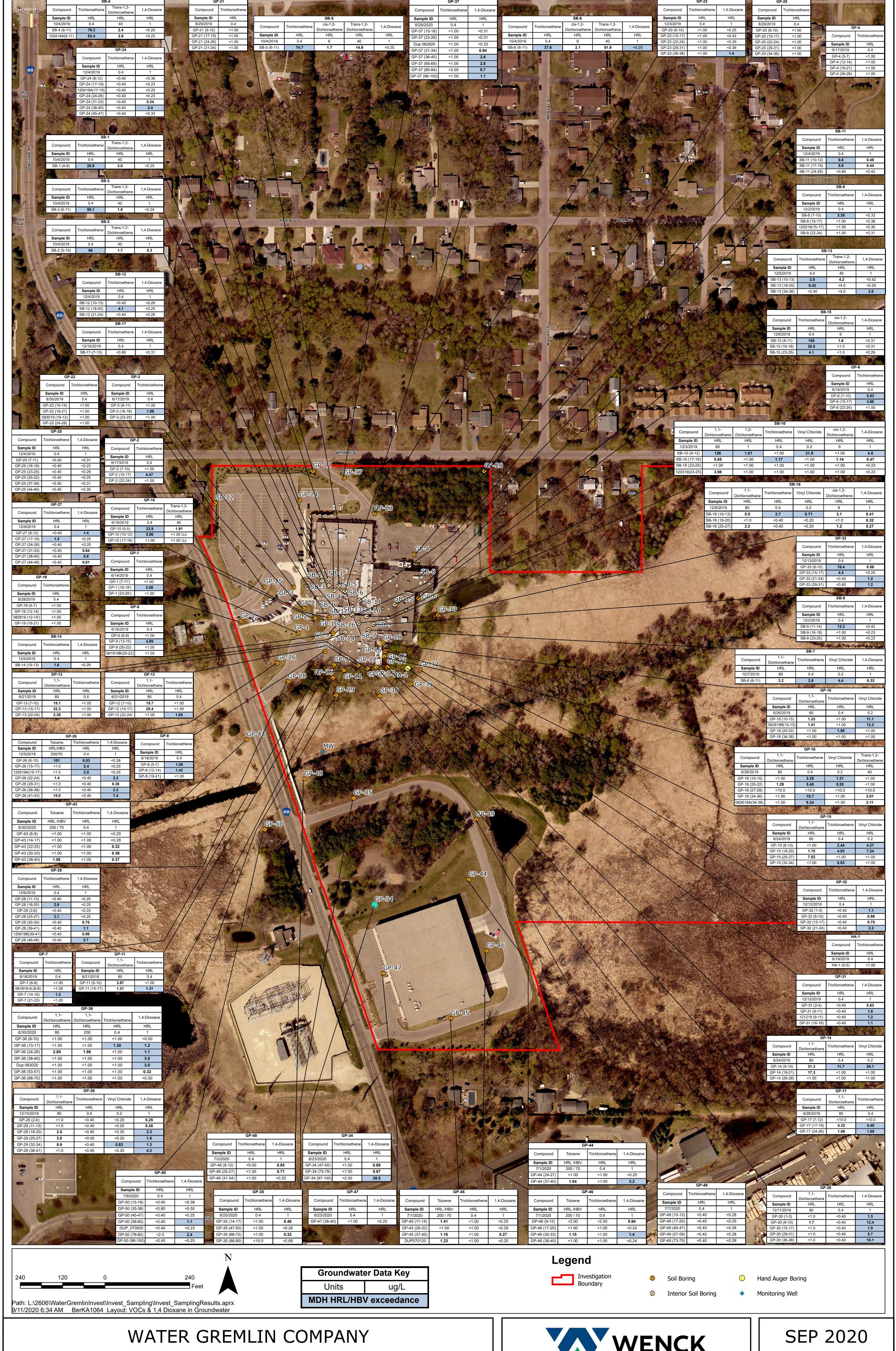
**Soil Boring Explanation: Lithology Graphics: SUBSURFACE DIAGRAM** CLIENT Water Gremlin GP-1-USCS Poorly-graded Sand with Silt Fill (made ground) **CROSS SECTION B-B'** PROJECT NUMBER 2606-0016 USCS Clayey Sand WENCK PROJECT NAME Remedial Investigation Borehole Lithology USCS Silty Sand USCS Sandy Silt Figure 14 Observed Water Level USCS Low to High Plasticity Clay USCS High Plasticity Clay PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 USCS Silt Reading at time of drilling. SP-15 Stainless Steel Discrete Sampler Observed Water Level Well Graphics: USCS Clayey Sand Reading after drilling. USCS Poorly-graded Sand USCS Low Plasticity Clay North South 940 North Campus Building GP-3 GP-2 930 930 **GP-21 GP-24** GP-1 Otter Lake Road Fill **GP-26** . . 🛮 . . 920 GP-50 Lambert Creek Ħ **GP-43** (SP/SM) Poorly graded SAND / Silty Sand (SP/SM) Ш . [ . 🛮 . ] 910 772 900 900 Semi-Confining Unit - Lacustrine Deposits of CLAY (CL / CH) & Semi-Confining Unit - Lacustrine Deposits of CLAY Elevation (ft) SILT (ML) (CL / CH) & SILT (ML), frequently interbedded with 890 water bearing Sand and Silt lenses 870 860 Poorly graded SAND / **Buried Glacial Aquifer** 850 840 830 830 820 810 250 200 Distance Along Baseline (M)

## **Lithology Graphics:**



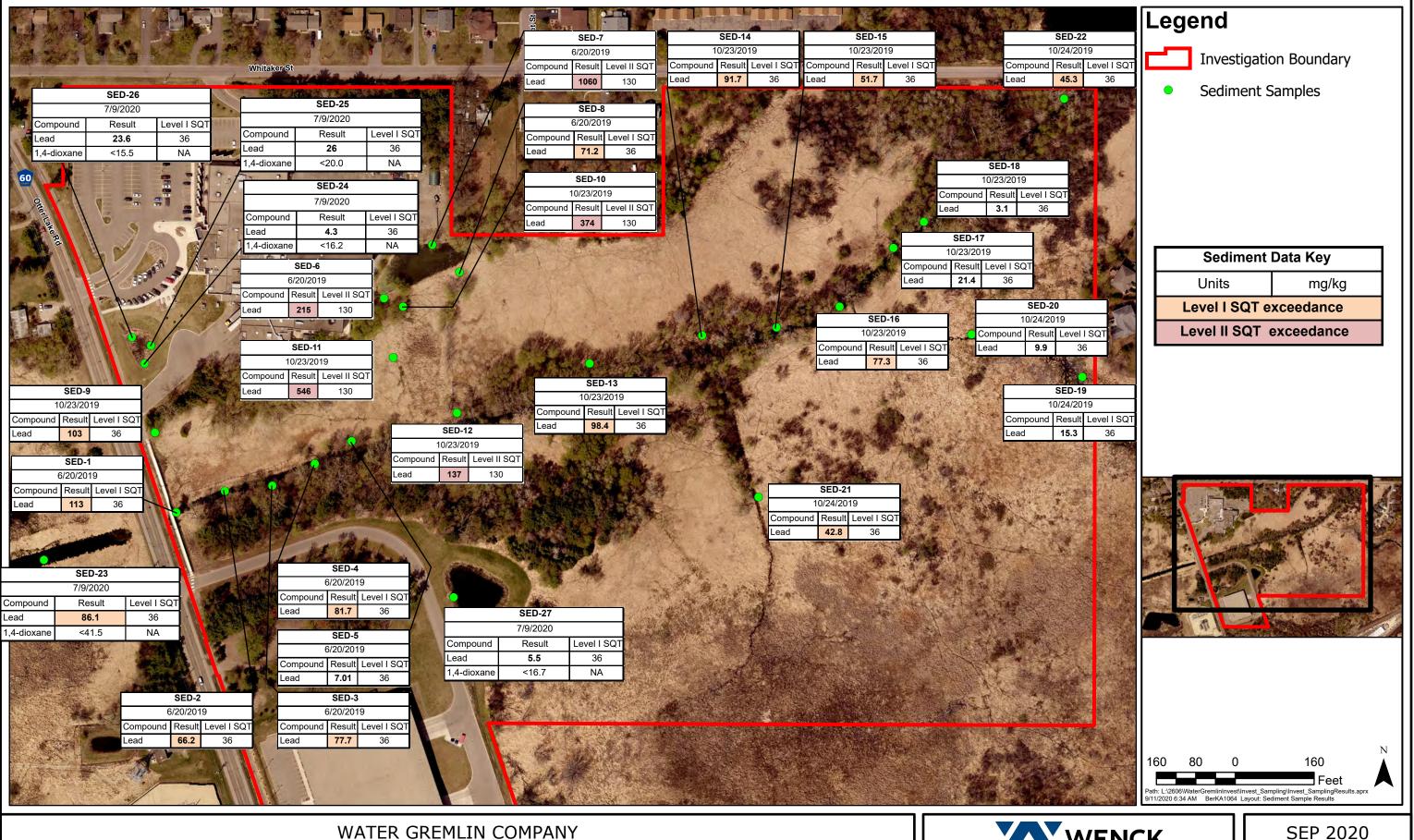
## **Lithology Graphics:**





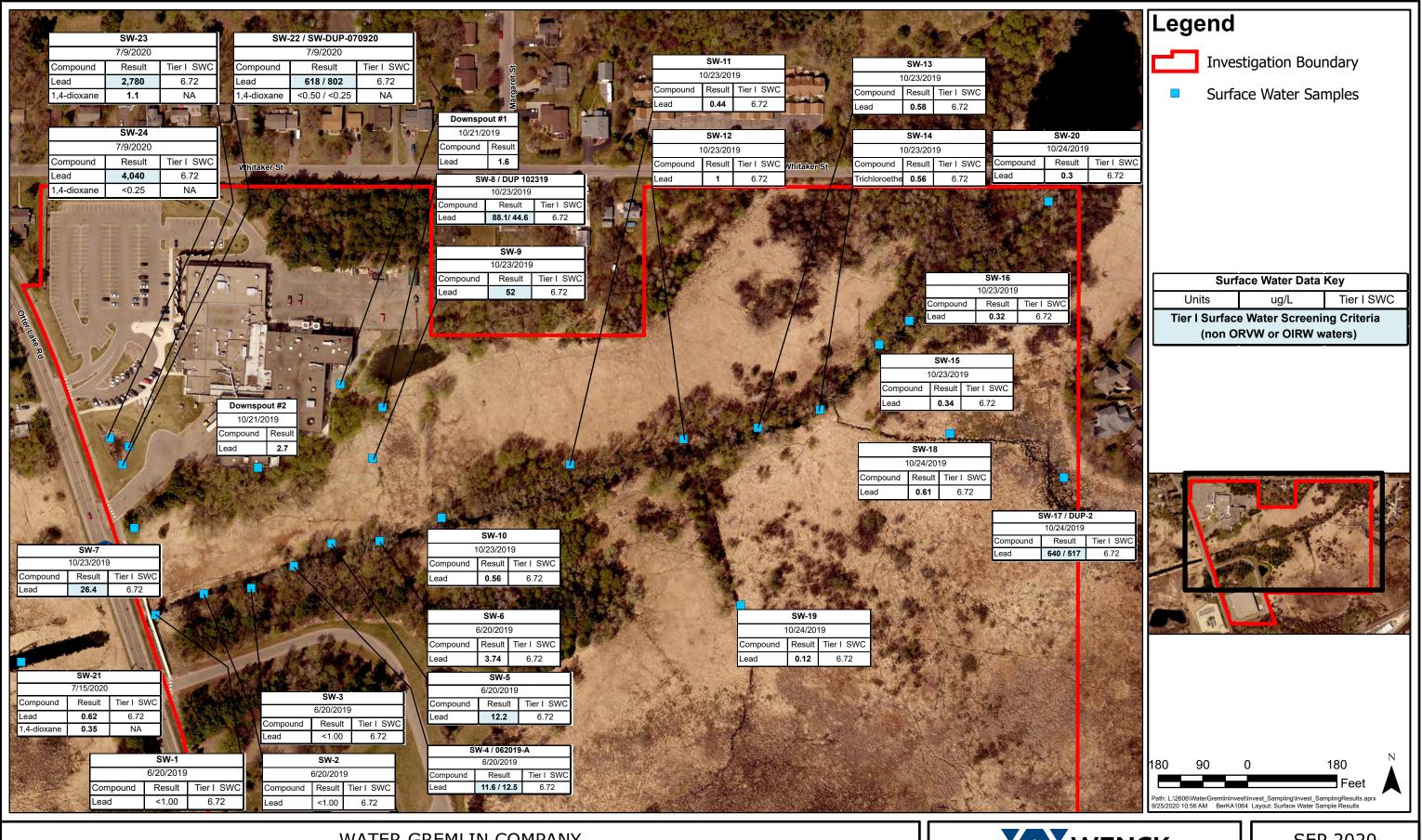
VOCs & 1,4 Dioxane in Groundwater





Sediment Sample Results





WATER GREMLIN COMPANY

Surface Water Sample Results



SEP 2020

## Tables

Table 1	Investigation Sample Coordinates
Table 2	Soil Boring Summary
Table 3	Well and Creek Gauge Data Summary
Table 4	Soil Analytical Results Summary
Table 5	Groundwater Analytical Results Summary
Table 6	South Campus Sub-Slab Vapor Analytical Results
Summary	
Table 7	Sediment Analytical Results Summary
Table 8	Surface Water Analytical Results Summary
Table 9	Residential Well Sampling Results

Exterior Sol Borning	3 2001004838 9 2001004840 1 2001004841 2 2001004842 3 2001004843 4 2001004844 5 2001004845 6 2001004846 4 2001004846 4 2001004849 6 2001004850 7 2001004851 8 2001004853 0 2001004854 1 2001004854 1 2001004854
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Exterior Soil Boring         GP-17         497485.2387         4991166.399         -93.031948         45.073955         200100494           Exterior Soil Boring         GP-18         497491.2599         4991187.462         -93.031872         45.074144         200100494           Exterior Soil Boring         GP-19         497368.1243         4991206.036         -93.034362         45.07431125         NA           Exterior Soil Boring         GP-20         497578.6853         4991335.627         -93.037618         45.07547855         NA           Exterior Soil Boring         GP-21         497430.6788         4991335.822         -93.03264216         45.07547857         NA           Exterior Soil Boring         GP-22         497346.201         4991308.052         -93.03371526         45.07547879         NA           Exterior Soil Boring         GP-23         497483.6521         4991299.014         -93.03371526         45.075149         200100495           Exterior Soil Boring         GP-23         497483.86521         49913910.704         -93.032791         45.075245         200100495           Exterior Soil Boring         GP-25         497388.3843         4991235.547         -93.033179         45.074577         200100495           Exterior Soil Boring         GP-26	2001004854 2001004855 2001004856
Exterior Soil Boring         GP-18         497491.2599         4991187.462         -93.031872         45.074144         200100494           Exterior Soil Boring         GP-19         497388.1243         4991206.036         -93.0334362         45.07431125         NA           Exterior Soil Boring         GP-20         497578.6853         4991335.627         -93.0307618         45.07547855         NA           Exterior Soil Boring         GP-21         497430.6788         4991335.822         -93.0324216         45.07547979         NA           Exterior Soil Boring         GP-22         497346.201         4991308.052         -93.03371526         45.0752295         NA           Exterior Soil Boring         GP-23         497483.6521         4991299.014         -93.031969         45.075149         200100495           Exterior Soil Boring         GP-24         497418.9816         4991310.704         -93.032791         45.075254         200100495           Exterior Soil Boring         GP-26         497389.8921         4991170         -93.033179         45.074577         200100495           Exterior Soil Boring         GP-27         497432.3215         4991208.682         -93.032621         45.073384         200100496           Exterior Soil Boring         GP-28         497	2001004855 2001004856
Exterior Soil Boring GP-19 497368.1243 4991206.036 -93.0334362 45.07431125 NA Exterior Soil Boring GP-20 497578.6853 4991335.627 -93.0307618 45.07547855 NA Exterior Soil Boring GP-21 497430.6788 4991335.622 -93.03264216 45.07547979 NA Exterior Soil Boring GP-22 497346.201 4991308.052 -93.03371526 45.0752295 NA Exterior Soil Boring GP-23 497483.6521 4991299.014 -93.031969 45.075149 200100495 Exterior Soil Boring GP-24 497418.9816 4991310.704 -93.032791 45.075254 200100495 Exterior Soil Boring GP-25 497388.3843 4991235.547 -93.033179 45.074577 200100495 Exterior Soil Boring GP-26 497399.9021 4991170 -93.033032 45.073987 200100495 Exterior Soil Boring GP-27 497432.3215 4991208.682 -93.032621 45.074335 200100495 Exterior Soil Boring GP-28 497408.9477 4991154.073 -93.03287 45.07337 200100495 Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.07337 200100495 Exterior Soil Boring GP-31 497452.3215 4991141.636 -93.031906 45.07332 200100495 Exterior Soil Boring GP-31 49755.2107 4991151.809 -93.031667 45.07332 200100495 Exterior Soil Boring GP-32 497523.2181 4991141.636 -93.031667 45.07332 200100496 Exterior Soil Boring GP-33 497523.2181 4991164.211 -93.03166 45.07335 200100496 Exterior Soil Boring GP-34 497488.5751 4991141.636 -93.031667 45.07335 200100496 Exterior Soil Boring GP-33 497523.2181 4991164.211 -93.03166 45.07335 200100496 Exterior Soil Boring GP-33 497523.2181 4991164.211 -93.03166 45.07335 200100496 Exterior Soil Boring GP-33 497533.848 4991211.603 -93.031267 45.07393 NA Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.03196 45.07393 NA Exterior Soil Boring GP-36 497448.9379 499156.657 -93.032409 45.07393 NA Exterior Soil Boring GP-36 497448.9379 499126.483 -93.032295 45.075417 NA Exterior Soil Boring GP-38 497497.4423 499126.406 -93.031857 45.07445 200100548 Exterior Soil Boring GP-38 497497.4423 499126.406 -93.031857 45.074451 200100548 Exterior Soil Boring GP-39 497490.5473 499126.406 -93.031857 45.074451 200100548	2001004856
Exterior Soil Boring GP-20 497578.6853 4991335.627 -93.0307618 45.07547855 NA Exterior Soil Boring GP-21 497430.6788 4991335.822 -93.03264216 45.07547979 NA Exterior Soil Boring GP-22 497346.201 4991308.052 -93.03371526 45.0752295 NA Exterior Soil Boring GP-23 497483.6521 499129.014 -93.031969 45.075149 200100495 Exterior Soil Boring GP-24 497418.9816 4991310.704 -93.032791 45.075524 200100495 Exterior Soil Boring GP-25 497388.3843 4991235.547 -93.033179 45.074577 200100495 Exterior Soil Boring GP-26 497399.9021 4991170 -93.033179 45.074577 200100495 Exterior Soil Boring GP-26 497493.3215 4991208.682 -93.032621 45.073987 200100495 Exterior Soil Boring GP-28 497432.3215 4991208.682 -93.03261 45.073844 200100495 Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.073844 200100495 Exterior Soil Boring GP-30 497488.5751 4991143.636 -93.031906 45.073737 200100495 Exterior Soil Boring GP-31 497515.2107 4991164.030 -93.031667 45.073824 200100496 Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.03166 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.073824 200100496 Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031966 45.072102 NA Exterior Soil Boring GP-36 497488.5791 4991164.211 -93.031466 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.073822 200100496 Exterior Soil Boring GP-33 497488.5297 4990960.618 -93.031966 45.072102 NA Exterior Soil Boring GP-36 497484.5297 4990960.618 -93.031966 45.072102 NA Exterior Soil Boring GP-36 497484.8379 499156.647 -93.032499 45.075476 NA Exterior Soil Boring GP-36 497484.8379 499158.883 -93.032995 45.075417 NA Exterior Soil Boring GP-38 49749.9952 4991288.883 -93.032997 45.075475 NA Exterior Soil Boring GP-38 497449.9952 4991288.883 -93.032643 45.07445 200100548 Exterior Soil Boring GP-39 497490.5473 4991260.406 -93.031857 45.074801 200100548 Exterior Soil Boring GP-39 497490.5473 4991260.406 -93.031857 45.074801 200100548	_
Exterior Soil Boring         GP-21         497430.6788         4991335.822         -93.03264216         45.07547979         NA           Exterior Soil Boring         GP-22         497346.201         4991308.052         -93.03371526         45.0752295         NA           Exterior Soil Boring         GP-23         497483.6521         4991299.014         -93.031969         45.075149         200100495           Exterior Soil Boring         GP-24         497418.9816         4991310.704         -93.032791         45.075254         200100495           Exterior Soil Boring         GP-25         497388.3843         4991235.547         -93.033179         45.074577         200100495           Exterior Soil Boring         GP-26         497399.9021         4991170         -93.033032         45.073987         200100495           Exterior Soil Boring         GP-27         497432.3215         4991208.682         -93.032621         45.073335         200100495           Exterior Soil Boring         GP-28         497408.9477         4991154.073         -93.032387         45.073373         200100495           Exterior Soil Boring         GP-29         497450.6614         4991142.207         -93.032387         45.073373         200100496           Exterior Soil Boring         GP-30	
Exterior Soil Boring         GP-22         497346.201         4991308.052         -93.03371526         45.0752295         NA           Exterior Soil Boring         GP-23         497483.6521         4991299.014         -93.031969         45.075149         200100495           Exterior Soil Boring         GP-24         497418.9816         4991310.704         -93.032791         45.075254         200100495           Exterior Soil Boring         GP-25         497388.3843         4991235.547         -93.033179         45.074577         200100495           Exterior Soil Boring         GP-26         497399.9021         4991170         -93.033032         45.074335         200100495           Exterior Soil Boring         GP-27         497432.3215         4991208.682         -93.032621         45.074335         200100495           Exterior Soil Boring         GP-28         497408.9477         4991154.073         -93.032917         45.073335         200100495           Exterior Soil Boring         GP-29         497450.6614         4991141.636         -93.031906         45.073737         200100496           Exterior Soil Boring         GP-30         497488.5751         4991141.636         -93.031906         45.07332         200100496           Exterior Soil Boring         GP-31	2001004857
Exterior Soil Boring         GP-23         497483.6521         4991299.014         -93.031969         45.075149         200100495           Exterior Soil Boring         GP-24         497418.9816         4991310.704         -93.032791         45.075254         200100495           Exterior Soil Boring         GP-25         497388.3843         4991235.547         -93.033179         45.074577         200100495           Exterior Soil Boring         GP-26         497399.9021         4991170         -93.033032         45.073987         200100495           Exterior Soil Boring         GP-27         497432.3215         4991208.682         -93.032621         45.074335         200100495           Exterior Soil Boring         GP-28         497408.9477         4991154.073         -93.032917         45.073844         200100495           Exterior Soil Boring         GP-29         497450.6614         4991142.207         -93.032987         45.073737         200100496           Exterior Soil Boring         GP-30         497488.5751         4991141.636         -93.031906         45.073732         200100496           Exterior Soil Boring         GP-31         497515.2107         4991151.809         -93.031567         45.073824         200100496           Exterior Soil Boring         GP-33 <td>2001004858</td>	2001004858
Exterior Soil Boring GP-24 497418.9816 4991310.704 -93.032791 45.075254 200100495 Exterior Soil Boring GP-25 497388.3843 4991235.547 -93.033179 45.074577 200100495 Exterior Soil Boring GP-26 497399.9021 4991170 -93.033032 45.073987 200100495 Exterior Soil Boring GP-27 497432.3215 4991208.682 -93.032621 45.074335 200100495 Exterior Soil Boring GP-28 497408.9477 4991154.073 -93.032917 45.073844 200100495 Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.073737 200100495 Exterior Soil Boring GP-30 497488.5751 4991141.636 -93.031906 45.073732 200100496 Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496 Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496 Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031966 45.072102 NA Exterior Soil Boring GP-36 497468.4668 4991052.544 -93.032186 45.07293 NA Exterior Soil Boring GP-36 497468.9379 4991156.657 -93.032409 45.073867 200100548 Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.03295 45.075417 NA Exterior Soil Boring GP-38 49749.9952 499129.6483 -93.032643 45.07445 200100548 Exterior Soil Boring GP-39 497430.5473 499126.406 -93.031857 45.074801 200100548	2001004859
Exterior Soil Boring GP-25 497388.3843 4991235.547 -93.033179 45.074577 200100495 Exterior Soil Boring GP-26 497399.9021 4991170 -93.033032 45.073987 200100495 Exterior Soil Boring GP-27 497432.3215 4991208.682 -93.032621 45.07384 200100495 Exterior Soil Boring GP-28 497408.9477 4991154.073 -93.032917 45.073844 200100495 Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.073737 200100495 Exterior Soil Boring GP-30 497488.5751 4991141.636 -93.031906 45.073732 200100496 Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496 Exterior Soil Boring GP-32 497523.2181 4991146.211 -93.031466 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496 Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031956 45.072102 NA Exterior Soil Boring GP-36 497448.9379 499156.657 -93.032409 45.07293 NA Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.03295 45.075417 NA Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.03297 45.075126 200100548 Exterior Soil Boring GP-38 497430.5473 499121.407 -93.032643 45.07445 200100548 Exterior Soil Boring GP-39 497430.5473 4991260.406 -93.031857 45.074801 200100548 Exterior Soil Boring GP-30 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004867
Exterior Soil Boring	2001004868
Exterior Soil Boring GP-27 497432.3215 4991208.682 -93.032621 45.074335 200100495 Exterior Soil Boring GP-28 497408.9477 4991154.073 -93.032917 45.073844 200100495 Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.073737 200100495 Exterior Soil Boring GP-30 497488.5751 4991141.636 -93.031906 45.073732 200100496 Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496 Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496 Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031966 45.072102 NA Exterior Soil Boring GP-35 497466.4668 4991052.544 -93.032186 45.07293 NA Exterior Soil Boring GP-36 497448.9379 4991156.657 -93.032409 45.073867 200100548 Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.032295 45.075417 NA Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.03297 45.074512 200100548 Exterior Soil Boring GP-39 497430.5473 499121.407 -93.032643 45.07445 200100548 Exterior Soil Boring GP-39 497430.5473 499121.407 -93.032643 45.07445 200100548 Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004869
Exterior Soil Boring	2001004870
Exterior Soil Boring GP-29 497450.6614 4991142.207 -93.032387 45.073737 200100495 Exterior Soil Boring GP-30 497488.5751 4991141.636 -93.031906 45.073732 200100496 Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496 Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496 Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496 Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031956 45.072102 NA Exterior Soil Boring GP-35 497466.4668 4991052.544 -93.032186 45.07293 NA Exterior Soil Boring GP-36 497448.9379 4991156.657 -93.032409 45.073867 200100548 Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.032295 45.075417 NA Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.03297 45.075126 200100548 Exterior Soil Boring GP-39 497430.5473 499121.407 -93.032643 45.07445 200100548 Exterior Soil Boring GP-39 497430.5473 4991221.407 -93.032643 45.07445 200100548 Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004871
Exterior Soil Boring GP-30 497488.5751 4991141.636 -93.031906 45.073732 200100496  Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496  Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496  Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496  Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031956 45.072102 NA  Exterior Soil Boring GP-35 497466.4668 4991052.544 -93.032186 45.07293 NA  Exterior Soil Boring GP-36 497448.9379 4991156.657 -93.032409 45.073867 200100548  Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.032295 45.075417 NA  Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.03297 45.075126 200100548  Exterior Soil Boring GP-39 497430.5473 499121.407 -93.032643 45.07445 200100548  Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004872
Exterior Soil Boring GP-31 497515.2107 4991151.809 -93.031567 45.073824 200100496  Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496  Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496  Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031956 45.072102 NA  Exterior Soil Boring GP-35 497466.4668 4991052.544 -93.032186 45.07293 NA  Exterior Soil Boring GP-36 497448.9379 4991156.657 -93.032409 45.073867 200100548  Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.032295 45.075417 NA  Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.03297 45.075126 200100548  Exterior Soil Boring GP-39 497430.5473 4991221.407 -93.032643 45.07445 200100548  Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004873
Exterior Soil Boring GP-32 497523.2181 4991164.211 -93.031466 45.073935 200100496  Exterior Soil Boring GP-33 497538.848 4991211.603 -93.031267 45.074362 200100496  Exterior Soil Boring GP-34 497484.5297 4990960.618 -93.031956 45.072102 NA  Exterior Soil Boring GP-35 497466.4668 4991052.544 -93.032186 45.07293 NA  Exterior Soil Boring GP-36 497448.9379 4991156.657 -93.032409 45.073867 200100548  Exterior Soil Boring GP-37 497457.9704 4991328.883 -93.032295 45.075417 NA  Exterior Soil Boring GP-38 497449.9952 4991296.483 -93.032397 45.075126 200100548  Exterior Soil Boring GP-39 497430.5473 4991221.407 -93.032643 45.07445 200100548  Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	2001004874
Exterior Soil Boring         GP-33         497538.848         4991211.603         -93.031267         45.074362         200100496           Exterior Soil Boring         GP-34         497484.5297         4990960.618         -93.031956         45.072102         NA           Exterior Soil Boring         GP-35         497466.4668         4991052.544         -93.032186         45.07293         NA           Exterior Soil Boring         GP-36         497448.9379         4991156.657         -93.032409         45.073867         200100548           Exterior Soil Boring         GP-37         497457.9704         4991328.883         -93.032295         45.075417         NA           Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2001004875
Exterior Soil Boring         GP-34         497484.5297         4990960.618         -93.031956         45.072102         NA           Exterior Soil Boring         GP-35         497466.4668         4991052.544         -93.032186         45.07293         NA           Exterior Soil Boring         GP-36         497448.9379         4991156.657         -93.032409         45.073867         200100548           Exterior Soil Boring         GP-37         497457.9704         4991328.883         -93.032295         45.075417         NA           Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2 2001004876
Exterior Soil Boring         GP-35         497466.4668         4991052.544         -93.032186         45.07293         NA           Exterior Soil Boring         GP-36         497448.9379         4991156.657         -93.032409         45.073867         200100548           Exterior Soil Boring         GP-37         497457.9704         4991328.883         -93.032295         45.075417         NA           Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2001004877
Exterior Soil Boring         GP-36         497448.9379         4991156.657         -93.032409         45.073867         200100548           Exterior Soil Boring         GP-37         497457.9704         4991328.883         -93.032295         45.075417         NA           Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2001004888
Exterior Soil Boring         GP-37         497457.9704         4991328.883         -93.032295         45.075417         NA           Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2001004889
Exterior Soil Boring         GP-38         497449.9952         4991296.483         -93.032397         45.075126         200100548           Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2 2001004890
Exterior Soil Boring         GP-39         497430.5473         4991221.407         -93.032643         45.07445         200100548           Exterior Soil Boring         GP-40         497492.4223         4991260.406         -93.031857         45.074801         200100548	2001004891
Exterior Soil Boring GP-40 497492.4223 4991260.406 -93.031857 45.074801 200100548	3 NA
	1 NA
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Exterior Soil Boring GP-41 497525.6818 4991223.929 -93.031435 45.074473 200100548	6 NA
Exterior Soil Boring GP-42 497517.8454 4991186.933 -93.031534 45.07414 200100548	7 NA
Exterior Soil Boring GP-43 497374.0621 4991103.125 -93.03336 45.073385 NA	2001004892
Exterior Soil Boring GP-44 497565.6356 4990982.239 -93.030926 45.072297 NA	2001004893
Exterior Soil Boring GP-45 497550.2688 4990862.377 -93.031121 45.071218 200100548	2001004894
Exterior Soil Boring GP-46 497581.0025 4990920.771 -93.03073 45.071744 200100686	2001004895
Exterior Soil Boring GP-47 497491.8747 4990901.307 -93.031863 45.071569 200100548	3 2001004896
Exterior Soil Boring GP-48 497423.7906 4991069.163 -93.032728 45.073079 NA	2001004897
Exterior Soil Boring GP-49 497572.1339 4991034.032 -93.030844 45.072764 NA	2001004898
Exterior Soil Boring GP-50 497389.6266 4991025.569 -93.033162 45.072687 NA	2001004899
Interior Soil Boring SB-1 497444.1861 4991242.659 -93.03247 45.074641 200100494	2001004860
Interior Soil Boring SB-2 497438.4538 4991241.053 -93.032543 45.074627 200100494	7 2001004861
Interior Soil Boring SB-3 497444.2625 4991237.156 -93.032469 45.074592 200100494	3 2001004862
Interior Soil Boring SB-4 497448.6955 4991232.723 -93.032413 45.074552 200100494	2001004863
Interior Soil Boring SB-5 497452.8227 4991236.697 -93.03236 45.074588 200100495	2001004864
Interior Soil Boring SB-6 497458.4021 4991232.188 -93.032289 45.074547 200100495	2001004865
Interior Soil Boring SB-7 497479.0384 4991198.711 -93.032027 45.074246 200100495	2 2001004866
Interior Soil Boring SB-8 497523.7007 4991244.043 -93.03146 45.074654 200100496	
Interior Soil Boring SB-9 497482.9437 4991203.477 -93.031977 45.074289 200100496	2001004878
Interior Soil Boring SB-10 497476.9168 4991210.28 -93.032054 45.07435 200100496	
Interior Soil Boring SB-11 497470.7508 4991224.366 -93.032132 45.074477 200100547	2001004879
Interior Soil Boring SB-12 497456.8906 4991209.82 -93.032309 45.074346 200100547	2001004879 2001004880
Interior Soil Boring SB-13 497464.8239 4991211.427 -93.032208 45.07436 200100547	2001004879 2001004880 2001004881

0	Committee in	UTM 7	UTM 7	NAD 4000 V C	NAD (000 V C	LUI N	umber
Sample Type Interior Soil Boring	Sample ID SB-14	UTM Zone 15N X 497458.583	UTM Zone 15N Y 4991196.641	NAD 1983 X-Coord -93.032287	NAD 1983 Y-Coord 45.074227	2001005478	2001004884
Interior Soil Boring	SB-15	497501.2057	4991220.558	-93.031746	45.074442	2001005478	2001004885
Interior Soil Boring	SB-16	497470.3006	4991204.449	-93.032138	45.074297	2001005480	2001004886
Interior Soil Boring	SB-17	497440.5379	4991215.422	-93.032516	45.074396	2001005481	2001004887
Interior Soil Boring	SB-18	497505.1926	4991231.182	-93.031695	45.074538	2001006861	NA
Interior Soil Boring	SB-19	497504.1682	4991197.375	-93.031708	45.074234	2001006826	NA
Interior Soil Boring	SB-20	497476.563	4991197.166	-93.032059	45.074232	2001006863	NA
Interior Soil Boring	SB-21	497461.749	4991212.21	-93.032247	45.074367	2001006864	NA
Interior Soil Boring	SB-22	497468.3829	4991273.474	-93.032163	45.074919	2001006865	NA
Interior Soil Boring	SB-23	497467.7852	4991250.005	-93.03217	45.074707	2001006866	NA
Monitoring Well	MW-1	497439,5794	4991093.397	-93.032528	45.073298	NA	NA
Hand Auger Boring	HA-1	497512.5978	4991165.41	-93.031601	45.073946	2001004927	2001004847
Hand Auger Boring	HA-2	497505.4435	4991176.076	-93.031692	45.074042	2001004928	NA
Hand Auger Boring	HA-3	497518.1845	4991172.555	-93.031530	45.074010	2001004929	NA
Hand Auger Boring	HA-4	497518.3021	4991159.938	-93.031528	45.073897	2001004930	NA
Hand Auger Boring	HA-5	497506.6738	4991161.01	-93.031676	45.073906	2001004931	NA
Hand Auger Boring	HA-6	497424.0297	4991284.577	-93.032726	45.075018	2001004932	NA
Hand Auger Boring	HA-7	497422.4248	4991276.937	-93.032747	45.074950	2001004933	NA
Sediment Sample Location	SED-1	497413.5881	4991076.955	-93.032858	45.073149	N	IA .
Sediment Sample Location	SED-2	497443.5202	4991090.218	-93.032478	45.073269		IA .
Sediment Sample Location	SED-3	497472.9134	4991093.582	-93.032104	45.073299		IA .
Sediment Sample Location	SED-4	497499.1976	4991107.061	-93.031771	45.073421		IA .
Sediment Sample Location	SED-5	497521.9768	4991121.094	-93.031481	45.073547	N	IA .
Sediment Sample Location	SED-6	497541.9233	4991209.44	-93.031228	45.074343	LD0	0362
Sediment Sample Location	SED-7	497571.8011	4991242.598	-93.030849	45.074641	LD0	0363
Sediment Sample Location	SED-8	497588.598	4991225.731	-93.030635	45.074489	LD0	0364
Sediment Sample Location	SED-9	497400.2779	4991126.434	-93.033035	45.073603	LD0	0368
Sediment Sample Location	SED-10	497553.7389	4991204.319	-93.031086	45.074304	LD0	0369
Sediment Sample Location	SED-11	497547.6437	4991172.914	-93.031163	45.074022	LD0	0370
Sediment Sample Location	SED-12	497587.1048	4991138.586	-93.030662	45.073713	LD0	0371
Sediment Sample Location	SED-13	497669.0865	4991169.241	-93.02962	45.073989	LD0	0372
Sediment Sample Location	SED-14	497738.6985	4991186.526	-93.028736	45.074145	LD0	0373
Sediment Sample Location	SED-15	497784.7785	4991191.412	-93.028151	45.074189	LD0	0374
Sediment Sample Location	SED-16	497823.7224	4991204.216	-93.027656	45.074304	LD0	0375
Sediment Sample Location	SED-17	497856.9144	4991240.617	-93.027234	45.074632	LD0	0376
Sediment Sample Location	SED-18	497875.7627	4991256.742	-93.026995	45.074777	LD0	0377
Sediment Sample Location	SED-19	497973.8407	4991160.83	-93.025748	45.073914	LD0	0378
Sediment Sample Location	SED-20	497905.3103	4991187.065	-93.026619	45.07415	LD0	0379
Sediment Sample Location	SED-21	497773.5324	4991086.496	-93.028293	45.073245	LD0	0380
Sediment Sample Location	SED-22	497962.4666	4991332.788	-93.025894	45.075462	LD0	0381
Sediment Sample Location	SED-23	497332.2642	4991046.903	-93.033891	45.072879	N	IA
Sediment Sample Location	SED-24	497394.5512	4991168.198	-93.0331	45.073971	N	IA
Sediment Sample Location							
	SED-25	497398.4852	4991179.344	-93.03305	45.074071	N	IA
Sediment Sample Location	SED-25 SED-26	497398.4852 497386.6834	4991179.344 4991184.59	-93.03305 -93.0332	45.074071 45.074118	N N	
· · · · · · · · · · · · · · · · · · ·				+			IA
Sediment Sample Location	SED-26	497386.6834	4991184.59	-93.0332	45.074118	N N S015	IA IA 5-354
Sediment Sample Location Sediment Sample Location	SED-26 SED-27	497386.6834 497585.5776	4991184.59 4991023.72	-93.0332 -93.030673	45.074118 45.072671	N N S015	IA IA
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1	497386.6834 497585.5776 497414.2662	4991184.59 4991023.72 4991076.536	-93.0332 -93.030673 -93.032849	45.074118 45.072671 45.073146	N N S015 S016	IA IA 5-354 5-355 5-356
Sediment Sample Location Sediment Sample Location Surface Water Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416	N N S015 S016 S016	IA IA 5-354 5-355 5-356 5-357
Sediment Sample Location Sediment Sample Location Surface Water Sample Location Surface Water Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543	N N S015 S016 S016 S016	IA IA 5-354 5-355 5-356 5-357 5-358
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.031100	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556	N N S015 S015 S016 S016 S016 S016	IA IA 5-354 5-355 5-356 5-357 5-358 5-359
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.031100 -93.03302383	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467	NN NN S015 S015 S015 S015 S015 S015 S015 S016 S016 S016 S016 S016 S016 S016 S016	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031100 -93.03302383 -93.031086	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304	NN NN S015 S015 S015 S015 S015 S016 S016 S016 S016 S016 S016 S016 S016	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031100 -93.03302383 -93.031086 -93.031163	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304 45.074022	NN	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-199
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437 497590.1719	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031100 -93.0302383 -93.031086 -93.031163 -93.030623	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304 45.074022 45.073693	NN	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-199 6-200 6-201
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437 497590.1719 497669.0865	4991184.59 4991023.72 4991076.536 4991089.57 4991089.57 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302383 -93.031086 -93.03163 -93.030623 -93.02962	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304 45.074022 45.073693 45.073989	NN	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-199 6-200 6-201 6-202
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437 497590.1719	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302883 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304 45.074022 45.073693 45.073989 45.074129	NN	IA IA IA3-543-553-563-573-583-593-1983-1992-2002-2013-2023-203
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437 497690.0865 497738.8034 497784.6071	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766	-93.0332 -93.03673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302383 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.028153	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074304 45.074022 45.073693 45.073989 45.074129 45.074192	NN	IA IA IA3-543-553-563-575-3-583-593-1983-1992-202-2012-2022-2033-2-204
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13 SW-14	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497522.3819 497551.976 497401.1583 497553.7389 497547.6437 497590.1719 497669.0865 497738.8034 497784.6071 497822.7587	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766 4991202.913	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302383 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.028153 -93.027668	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.073556 45.07363467 45.074022 45.073693 45.073693 45.073693 45.073693 45.074129 45.074129 45.074192	NN	IA I
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13 SW-14 SW-15	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497551.976 497401.1583 497553.7389 497547.6437 497690.0865 497738.8034 497784.6071 497822.7587	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766 4991202.913 4991242.799	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.028153 -93.027668 -93.027205	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.07363467 45.07363467 45.074022 45.073693 45.073693 45.074022 45.073693 45.074129 45.074129 45.074129 45.074192 45.074652	NN NN S015 S016 S016 S016 S016 S016 S016 S016 S016	IA I
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13 SW-14 SW-15 SW-16	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497551.976 497401.1583 497553.7389 497547.6437 49769.0865 497738.8034 497784.6071 497822.7587 497876.893	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766 4991202.913 4991242.799 4991257.389	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302383 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.028153 -93.027205 -93.02697	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.07363467 45.07363467 45.074022 45.073693 45.073693 45.074022 45.073693 45.074129 45.074129 45.074129 45.074192 45.074652 45.074783	NN	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-200 6-201 6-202 6-203 6-204 6-205 6-205 6-207
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13 SW-14 SW-15 SW-16 SW-17	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497551.976 497401.1583 497553.7389 497547.6437 49769.0865 497738.8034 497784.6071 497822.7587 49787.6893 497972.7519	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766 4991202.913 4991242.799 4991257.389 4991161.034	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.031086 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.02687 -93.02697 -93.025762	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.07363467 45.07363467 45.074022 45.073693 45.073693 45.074022 45.074029 45.074129 45.074129 45.074129 45.074129 45.074652 45.074652 45.073916	NN	IA IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-199 6-200 6-201 6-202 6-203 6-204 6-205 6-205 6-206 6-207
Sediment Sample Location Sediment Sample Location Surface Water Sample Location	SED-26 SED-27 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 SW-8 SW-9 SW-10 SW-11 SW-12 SW-13 SW-14 SW-15 SW-16	497386.6834 497585.5776 497414.2662 497443.9352 497473.0725 497499.2578 497551.976 497401.1583 497553.7389 497547.6437 49769.0865 497738.8034 497784.6071 497822.7587 497876.893	4991184.59 4991023.72 4991076.536 4991089.57 4991093.135 4991106.487 4991120.681 4991122.064 4991129.97 4991204.319 4991172.914 4991136.336 4991169.241 4991184.724 4991191.766 4991202.913 4991242.799 4991257.389	-93.0332 -93.030673 -93.032849 -93.032472 -93.032102 -93.031770 -93.031476 -93.03100 -93.0302383 -93.031086 -93.03163 -93.030623 -93.02962 -93.028735 -93.028153 -93.027205 -93.02697	45.074118 45.072671 45.073146 45.073263 45.073295 45.073416 45.073543 45.07363467 45.07363467 45.074022 45.073693 45.073693 45.074022 45.073693 45.074129 45.074129 45.074129 45.074192 45.074652 45.074783	NN	IA IA 5-354 5-355 5-356 5-357 5-358 5-359 6-198 6-199 6-200 6-201 6-202 6-203 6-204 6-205 6-205 6-206

						LUI Number
Sample Type	Sample ID	UTM Zone 15N X	UTM Zone 15N Y	NAD 1983 X-Coord	NAD 1983 Y-Coord	
Surface Water Sample Location	SW- 20	497963.3962	4991330.832	-93.025882	45.075445	S016-211 S016-212
Downspout Sample Location	Downspout # 1	497527.9375	4991218.433	-93.031414	45.074431	
Downspout Sample Location	Downspout # 2	497477.1734	4991167.088	-93.032058	45.073969	S016-213 NA
Surface Water Sample Location	SW-21	497332.2642	4991046.903	-93.033891	45.072879	NA NA
Surface Water Sample Location	SW-22	497394.5512	4991168.198	-93.0331	45.073971	
Surface Water Sample Location	SW-23	497398.4852	4991179.344	-93.03305	45.074071	NA NA
Surface Water Sample Location	SW-24	497386.6834	4991184.59	-93.0332	45.074118	NA
Soil Gas Samples	SV-1	497379.4438	4991238.291	-93.033293	45.074602	GS00873 GS00874
Soil Gas Samples	SV-2	497388.8531	4991276.946	-93.033173	45.07495	
Soil Gas Samples	SV-3	497408.1804	4991324.755	-93.032928	45.07538	GS00875
Soil Gas Samples	SV-4	497456.4985	4991322.466	-93.032314	45.07536	GS00780
Soil Gas Samples	SV-5	497510.9199	4991318.906	-93.031623	45.075328	GS00777
Soil Gas Samples	SV-6	497542.9625	4991289.152	-93.031215	45.07506	GS00778
Soil Gas Samples	SV-7	497576.7851	4991289.152	-93.030786	45.07506	GS00779
Soil Gas Samples	SV-8	497368.1243	4991206.036	-93.0334362	45.07431125	GS00781
Soil Gas Samples	SV-9	497354.0934	4991247.251	-93.03361467	45.07468221	GS00782
Soil Gas Samples	SV-10	497343.6677	4991272.78	-93.03374726	45.07491198	GS00783
Soil Gas Samples	SV-11	497346.201	4991308.052	-93.03371526	45.0752295	GS00774
Soil Gas Samples	SV-12	497360.7191	4991330.365	-93.03353094	45.07543041	GS00771
Soil Gas Samples	SV-13	497430.6788	4991335.822	-93.03264216	45.07547979	GS00772
Soil Gas Samples	SV-14	497487.2896	4991335.529	-93.03192294	45.07547736	GS00773
Soil Gas Samples	SV-15	497578.6853	4991335.627	-93.0307618	45.07547855	GS00798
Soil Gas Samples	SV-16	497527.4434	4991226.952	-93.031412	45.0745	GS00909
Soil Gas Samples	SV-17	497544.925	4991261.436	-93.03119	45.074811	GS00910
Soil Gas Samples	SV-18	497519.0347	4991212.722	-93.031519	45.074372	GS00911
Soil Gas Samples	SV-19	497498.7422	4991189.373	-93.031777	45.074162	GS00912
Soil Gas Samples	SV-20	497484.9967	4991167.285	-93.031951	45.073963	GS00913
Soil Gas Samples	SV-21	497457.4025	4991162.182	-93.032302	45.073917	GS00915
Soil Gas Samples	SV-22	497419.3028	4991158.68	-93.032786	45.073885	GS00916
Soil Gas Samples	SV-23	497404.3976	4991193.518	-93.032975	45.074199	GS00917
Sub-slab Soil Vapor Sample Locations	SS-1	497425.8434	4991250.136	-93.032703	45.074708	GS00699
Sub-slab Soil Vapor Sample Locations	SS-2	497432.2529	4991241.097	-93.032622	45.074627	GS00690
Sub-slab Soil Vapor Sample Locations	SS-3	497427.1582	4991237.317	-93.032686	45.074593	GS00689
Sub-slab Soil Vapor Sample Locations	SS-4	497432.0886	4991233.208	-93.032624	45.074556	GS00686
Sub-slab Soil Vapor Sample Locations	SS-5	497438.1694	4991227.621	-93.032546	45.074506	GS00688
Sub-slab Soil Vapor Sample Locations	SS-6	497432.2529	4991222.526	-93.032622	45.07446	GS00687
Sub-slab Soil Vapor Sample Locations	SS-7	497430.7738	4991215.952	-93.03264	45.074401	GS00685
Sub-slab Soil Vapor Sample Locations	SS-8	497452.139	4991243.234	-93.032369	45.074646	GS00700
Sub-slab Soil Vapor Sample Locations	SS-9	497457.8911	4991239.782	-93.032296	45.074615	GS00701
Sub-slab Soil Vapor Sample Locations	SS-10	497464.958	4991238.796	-93.032206	45.074607	GS00712
Sub-slab Soil Vapor Sample Locations	SS-10-2	497466.613	4991236.552	-93.032185	45.074586	GS00712
Sub-slab Soil Vapor Sample Locations	SS-11	497458.7128	4991233.702	-93.032285	45.074561	GS00702
Sub-slab Soil Vapor Sample Locations	SS-11-2	497460.4984	4991231.11	-93.032263	45.074537	GS00702
Sub-slab Soil Vapor Sample Locations	SS-12	497450.1668	4991234.688	-93.032394	45.074569	GS00703
Sub-slab Soil Vapor Sample Locations	SS-12-2	497451.836	4991232.129	-93.032373	45.074546	GS00703
Sub-slab Soil Vapor Sample Locations	SS-13	497444.2503	4991231.565	-93.032469	45.074541	GS00704
Sub-slab Soil Vapor Sample Locations	SS-13-2	497445.867	4991228.945	-93.032449	45.074518	GS00704
Sub-slab Soil Vapor Sample Locations	SS-14	497440.1416	4991235.838	-93.032521	45.07458	GS00706
Sub-slab Soil Vapor Sample Locations	SS-14-2	497441.7906	4991233.458	-93.0325	45.074558	GS00706
Sub-slab Soil Vapor Sample Locations	SS-15	497444.9077	4991244.548	-93.032461	45.074658	GS00705
Sub-slab Soil Vapor Sample Locations	SS-15-2	497446.2616	4991242.056	-93.032444	45.074636	GS00705
Sub-slab Soil Vapor Sample Locations	SS-16	497467.0946	4991215.295	-93.032179	45.074395	GS00707
Sub-slab Soil Vapor Sample Locations	SS-17	497465.2867	4991212.501	-93.032202	45.07437	GS00708
Sub-slab Soil Vapor Sample Locations	SS-18	497483.3553	4991207.689	-93.031972	45.074327	GS00709
Sub-slab Soil Vapor Sample Locations	SS-19	497479.2563	4991200.832	-93.032024	45.074265	GS00710
Sub-slab Soil Vapor Sample Locations	SS-19-2	497481.6265	4991198.572	-93.031994	45.074244	GS00710
Sub-slab Soil Vapor Sample Locations	SS-20	497479.585	4991196.066	-93.03202	45.074222	GS00711
Sub-slab Soil Vapor Sample Locations	SS-21	497457.2337	4991215.623	-93.032304	45.074398	GS00713
Sub-slab Soil Vapor Sample Locations	SS-22	497438.4981	4991221.869	-93.032542	45.074454	GS00715
Sub-slab Soil Vapor Sample Locations	SS-23	497452.3033	4991226.635	-93.032367	45.074497	GS00714
Sub-slab Soil Vapor Sample Locations	SS-24	497509.1675	4991238.632	-93.032307	45.074605	GS00714 GS00716
Sub-slab Soil Vapor Sample Locations	SS-25	497513.1118	4991245.699	-93.031594	45.074669	GS00717
Sub-slab Soil Vapor Sample Locations	SS-25 SS-26	497480.935	4991249.85	-93.031594	45.074706	GS00717
·	SS-26 SS-27	497480.303	4991231.73	-93.032003	45.074706	GS00719
Sub-slab Soil Vapor Sample Locations	SS-21	437400.303	4331231.73	-93.032011	40.074043	6300719

Sample Type	Sample ID	UTM Zone 15N X	UTM Zone 15N Y	NAD 1983 X-Coord	NAD 1983 Y-Coord	LUI Number
Sub-slab Soil Vapor Sample Locations	SS-28	497470.7165	4991271.867	-93.032133	45.074904	GS00720
Sub-slab Soil Vapor Sample Locations	SS-29	497471.77	4991288.301	-93.03212	45.075052	GS00762
Sub-slab Soil Vapor Sample Locations	SS-30	497461.4461	4991284.403	-93.032251	45.075017	GS00763
Sub-slab Soil Vapor Sample Locations	SS-31	497457.7591	4991272.183	-93.032298	45.074907	GS00764
Sub-slab Soil Vapor Sample Locations	SS-32	497440.6931	4991285.772	-93.032515	45.075029	GS00765
Sub-slab Soil Vapor Sample Locations	SS-33	497440.1664	4991272.604	-93.032521	45.074911	GS00766
Sub-slab Soil Vapor Sample Locations	SS-34	497450.9116	4991257.013	-93.032385	45.07477	GS00767
Sub-slab Soil Vapor Sample Locations	SS-35	497431.1067	4991261.332	-93.032636	45.074809	GS00768
Sub-slab Soil Vapor Sample Locations	SS-36	497460.0767	4991203.814	-93.032268	45.074292	GS00769
Sub-slab Soil Vapor Sample Locations	SS-37	497493.2604	4991207.711	-93.031846	45.074327	GS00770
Sub-slab Soil Vapor Sample Locations	SS-38	497530.2702	4991236.097	-93.031376	45.074582	GS00872
South Campus Sub-slab Sample Locations	SS-1	4990883.12	497537.88	-93.031278	45.071405	GS00873
South Campus Sub-slab Sample Locations	SS-2	4990873.34	497541.02	-93.031238	45.071317	GS00874
South Campus Sub-slab Sample Locations	SS-3	4990868.79	497526.3	-93.031425	45.071276	GS00875
South Campus Sub-slab Sample Locations	SS-4	4990877.79	497523.63	-93.031459	45.071357	GS01370
Background Ambient Air Sample Locations	AA-1	497514.9196	4991252.437	-93.031571	45.074729	GS00691
Background Ambient Air Sample Locations	AA-2	497457.2337	4991170.263	-93.032304	45.07399	GS00693
Crawl Space Air Sample Location	AA-3	497456.905	4991179.796	-93.032308	45.074075	GS00692
Crawl Space Air Sample Location	AA-4	497458.5485	4991189.492	-93.032287	45.074163	GS00694
Crawl Space Air Sample Location	AA-5	497466.2728	4991188.999	-93.032189	45.074158	GS00695
Crawl Space Air Sample Location	AA-6	497466.4372	4991178.481	-93.032187	45.074064	GS00696
Crawl Space Air Sample Location	AA-7	497473.9971	4991177.166	-93.032091	45.074052	GS00697
Crawl Space Air Sample Location	AA-8	497474.4902	4991187.684	-93.032085	45.074146	GS00698
Background Ambient Air Sample Locations	AA-9	497425.5867	4991240.993	-93.032706	45.074626	GS00841
Background Ambient Air Sample Locations	AA-9(b)	497437.9619	4991301.693	-93.032549	45.075173	GS00868
Background Ambient Air Sample Locations	AA-10	497535.6923	4991251.891	-93.031308	45.074725	GS00869
Background Ambient Air Sample Locations	AA-11	497449.3079	4991165.443	-93.032405	45.073946	GS00870
Indoor Air Sample Location	IA-1	497432.2529	4991222.526	-93.032622	45.07446	GS00859
Indoor Air Sample Location	IA-2	497431.1067	4991261.332	-93.032636	45.074809	GS00860
Indoor Air Sample Location	IA-3	497480.935	4991249.85	-93.032003	45.074706	GS00861
Indoor Air Sample Location	IA-4	497444.9077	4991244.548	-93.032461	45.074658	GS00842
Indoor Air Sample Location	IA-5	497440.1416	4991235.838	-93.032521	45.07458	GS00843
Indoor Air Sample Location	IA-6	497444.2503	4991231.565	-93.032469	45.074541	GS00844
Indoor Air Sample Location	IA-7	497450.1668	4991234.688	-93.032394	45.074569	GS00845
Indoor Air Sample Location	IA-8	497458.7128	4991233.702	-93.032285	45.074561	GS00846
Indoor Air Sample Location	IA-9	497464.958	4991238.796	-93.032206	45.074607	GS00847
Indoor Air Sample Location	IA-10	497479.2563	4991200.832	-93.032024	45.074265	GS00848
Indoor Air Sample Location	IA-11	497447.3115	4991254.393	-93.03243	45.074747	GS00862
Indoor Air Sample Location	IA-12	497530.227	4991235.995	-93.031377	45.074582	GS00863
Indoor Air Sample Location	IA-13	497491.3261	4991206.506	-93.031871	45.074316	GS00865
Indoor Air Sample Location	IA-14	497461.4461	4991284.403	-93.032251	45.075017	GS00866
Indoor Air Sample Location	IA-15	497460.0767	4991203.814	-93.032268	45.074292	GS00867

Investigation	Boring ID	Date Completed	Depth (feet)	Soil LUI#	Soil Sample Intervals (feet)	Analysis	Groundwater LUI #	Groundwater Sample Intervals (feet)	Analysis
					0-1	Pb		7-11	VOC (modified list)
	GP-1	6/14/2010	26	2001004017	2-4	Pb	2004004827	16-18	VOC (modified list)
	GP-1	6/14/2019	36	2001004917	8-10	VOC	2001004837	23-25	VOC (modified list)
					30-32	VOC	1		
					0-1	Pb		7-10	VOC (modified list)
	GP-2	6/17/2019	28	2001004918	5-7	VOC	2001004838	15-17	VOC (modified list)
					22-24	VOC	1	22-24	VOC (modified list)
					0-1	Pb		8-11	VOC (modified list)
	GP-3	6/17/2019	28	2001004919	0-2	VOC	2001004839	16-18	VOC (modified list)
	0. 0	0/1//2010	20	2001001010	26-28	VOC	- 2001001000	23-25	VOC (modified list)
					0-1	Pb		5-7	VOC (modified list)
				2001004920			-		
	GP-4	6/17/2019	32		4-6	VOC	2001004840	12-14	VOC (modified list)
								19-21	VOC (modified list)
					1			26-28	VOC (modified list)
	GP-5	6/17/2019	32	2001004921	0-1	Pb	2001004841	NA	NA
					2-4	VOC			
					0-1	Pb		7-10	MS/MSD VOC (modified list)
	GP-6	6/18/2019	36	2001004922	2-4	Pb	2001004842	15-17	VOC (modified list)
					4-6	VOC		22-24	VOC (modified list)
					0-1	Pb		6-9 & DUP061819	VOC (modified list)
	GP-7	6/18/2019	24	2001004923	2-4	VOC	2001004843	14-16	VOC (modified list)
					10-12	VOC		21-23	VOC (modified list)
					0-1	Pb		5-7	VOC (modified list)
	GP-8	6/18/2019	28	2001004924	6-8	VOC	2001004844	12-14	VOC (modified list)
							1	19-21	VOC (modified list)
					0-1	Pb		6-8	VOC (modified list)
	GP-9	6/18/2019	24	2001004925	5-7	Pb	2001004845	13-15	VOC (modified list)
		5, 15, 25, 15			6-8	VOC	-	20-22 & 061819-B	VOC (modified list)
							1		
	GP-10	0/40/0040	04	2001004926	0-1	Pb	0004004046	0-5	VOC (modified list)
	GF-10	6/19/2019	24		1-3	VOC	2001004846	10-12	VOC (modified list)
					1			17-19	VOC (modified list)
	GP-11	6/21/2019	24	2001004934	0-1	Pb	2001004848	5-10	VOC (modified list)
RI					6-8	VOC		15-17	VOC (modified list)
					0-1	Pb		7-10	VOC (modified list)
	GP-12	6/21/2019	28	2001004935	4-6	VOC	2001004849	15-17	VOC (modified list)
					6-8	Pb		22-24	VOC (modified list)
					8-9.5	VOC			
				2001004936	0-1	Pb	<u> </u>	7-10	VOC (modified list)
	GP-13	6/21/2019	28				2001004850	15-17	
								22-24	
				2001004937	0-1	Pb		9-14	VOC (modified list)
	GP-14	6/24/2019	36	2001004937	10-12	VOC	2001004851	19-21	VOC (modified list)
							Ī	26-28	VOC (modified list)
					0-1	Pb			VOC (modified list)
					· .			8-13	roo (moamoa not)
		0/5-1-		2001004938	2-4	VOC		8-13 18-20	MS/MSD VOC (modified list)
	GP-15	6/24/2019	40	2001004938			2001004852		MS/MSD VOC (modified list)
	GP-15	6/24/2019	40	2001004938			2001004852	18-20 25-27	MS/MSD VOC (modified list)  VOC (modified list)
	GP-15	6/24/2019	40		2-4	VOC	2001004852	18-20 25-27 32-34	MS/MSD VOC (modified list)  VOC (modified list)  VOC (modified list)
	GP-15	6/24/2019	40	2001004938	0-1	VOC Pb	2001004852	18-20 25-27 32-34 10-15	MS/MSD VOC (modified list)  VOC (modified list)  VOC (modified list)  VOC (modified list)
	GP-15	6/24/2019	40		2-4	VOC	2001004852	18-20 25-27 32-34 10-15 20-22	MS/MSD VOC (modified list)
					0-1	VOC Pb	-	18-20 25-27 32-34 10-15 20-22 27-29	MS/MSD VOC (modified list)
					2-4 0-1 2-4	VOC Pb VOC	-	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	2-4 0-1 2-4	Pb VOC	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12	MS/MSD VOC (modified list)
					2-4 0-1 2-4 0-1 8-10	Pb VOC	-	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	0-1 2-4 0-1 8-10 28-30	Pb VOC VOC	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	0-1 2-4 0-1 8-10 28-30 0-1	Pb VOC Pb VOC Pb	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	0-1 2-4 0-1 8-10 28-30	Pb VOC VOC Pb VOC	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	0-1 2-4 0-1 8-10 28-30 0-1	Pb VOC Pb VOC Pb	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	0-1 2-4 0-1 8-10 28-30 0-1 4-6	Pb VOC VOC Pb VOC	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22	MS/MSD VOC (modified list)
	GP-16	6/24/2019	44	2001004939	2-4  0-1 2-4  0-1 8-10 28-30 0-1 4-6 6-8	Pb VOC VOC Pb VOC Pb	2001004853	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22	MS/MSD VOC (modified list)
	GP-16 GP-17 GP-18	6/24/2019 6/26/2019 6/26/2019	44 36 44	2001004939 2001004940 2001004941	2-4  0-1 2-4  0-1 8-10 28-30 0-1 4-6 6-8 41-43	Pb VOC  Pb VOC  Pb VOC  Pb VOC  Pb VOC	2001004853 2001004854 2001004855	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22 34-38	MS/MSD VOC (modified list)
	GP-16 GP-17 GP-18	6/24/2019 6/26/2019 6/26/2019 1/6/1900	44 36 44 6/19/2019	2001004939 2001004940 2001004941 2001004927	2-4  0-1 2-4  0-1 8-10 28-30 0-1 4-6 6-8 41-43 0-1	Pb VOC  Pb VOC  Pb VOC  Pb VOC  Pb VOC  Pb VOC  Pb, VOC	2001004853 2001004854 2001004855	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22 34-38	MS/MSD VOC (modified list)
	GP-16 GP-17 GP-18 HA-1 HA-2 HA-3	6/24/2019 6/26/2019 6/26/2019 1/6/1900 1/3/1900	44 36 44 6/19/2019 6/19/2019 6/19/2019	2001004939 2001004940 2001004941 2001004927 2001004928 2001004929	2-4  0-1 2-4  0-1 8-10 28-30 0-1 4-6 6-8 41-43 0-1 0-1 0-1	Pb VOC Pb VOC Pb, VOC PD, VOC	2001004853 2001004854 2001004855 2001004847 NA NA	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22 34-38	MS/MSD VOC (modified list)  NA  NA
	GP-16 GP-17 GP-18 HA-1 HA-2 HA-3 HA-4	6/24/2019 6/26/2019 6/26/2019 1/6/1900 1/3/1900 1/3/1900	44 36 44 6/19/2019 6/19/2019 6/19/2019 6/19/2019	2001004939 2001004940 2001004941 2001004927 2001004928 2001004929 2001004930	0-1 2-4 0-1 8-10 28-30 0-1 4-6 6-8 41-43 0-1 0-1 0-1	Pb VOC  Pb VOC  VOC  Pb VOC  Pb VOC  Pb, VOC	2001004853 2001004854 2001004855 2001004847 NA NA	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22 34-38 1-6 NA NA NA	MS/MSD VOC (modified list)  NA  NA  NA
	GP-16 GP-17 GP-18 HA-1 HA-2 HA-3	6/24/2019 6/26/2019 6/26/2019 1/6/1900 1/3/1900	44 36 44 6/19/2019 6/19/2019 6/19/2019	2001004939 2001004940 2001004941 2001004927 2001004928 2001004929	2-4  0-1 2-4  0-1 8-10 28-30 0-1 4-6 6-8 41-43 0-1 0-1 0-1	Pb VOC Pb VOC Pb, VOC PD, VOC	2001004853 2001004854 2001004855 2001004847 NA NA	18-20 25-27 32-34 10-15 20-22 27-29 34-36 & DUP062619-A 7-12 17-19 24-26 10-15 & 062619-B 20-22 34-38	MS/MSD VOC (modified list)  NOC (modified list)  NOC (modified list)

Investigation	Boring ID	Date Completed	Depth (feet)	Soil LUI#	Soil Sample Intervals (feet)	Analysis	Groundwater LUI	Groundwater Sample Intervals (feet)	Analysis
		Completed				NA			V00
	GP-19	8/28/2019	30	2001004942	NA	NA	2001004856	4-7 12-14 & DUP082819	VOC
	GF-19	0/20/2019	30	2001004942			2001004030	19-21	VOC
				2001004943	NA	NA		6-10	VOC
							†	15-17	VOC
	GP-20	8/29/2019	36				2001004857	22-24	VOC
								29-31	VOC
								34-36	VOC
				2001004944	NA	NA		9-12	VOC
	GP-21	8/29/2019	35				2001004858	17-19	VOC
	GF-21	0/29/2019	35				2001004656	24-26	VOC
								31-34	VOC
				2001004945	NA	NA		10-14	VOC
	GP-22	8/30/2019	30				2001004859	19-21 & DUP083019	VOC
								24-28	VOC
				2001004953	0-1	Pb		6-10	VOC, 1,4-dioxane
					5-7.5	VOC		15-17	VOC, 1,4-dioxane
	GP-23	12/3/2019	45				2001004867	22-24	VOC, 1,4-dioxane
								29-31	VOC, 1,4-dioxane
								36-38	VOC, 1,4-dioxane
				2001004954	0-1	Pb		8-12	VOC, 1,4-dioxane
					5-7.5	VOC, Pb & Pb MS/MSD	1	17-19 & DUP120419-A	VOC, 1,4-dioxane
	GP-24	12/3/2019	50				2001004868	24-26	VOC, 1,4-dioxane
								31-33	VOC, 1,4-dioxane
								38-40	VOC, 1,4-dioxane
								45-47	VOC, 1,4-dioxane
				0004004055	0-1	Pb		7-11	VOC, 1,4-dioxane
				2001004955	0-2.5	VOC		16-18	VOC, 1,4-dioxane
	GP-25	12/4/2019	55		7.5-10	VOC	2001004869	23-25	VOC, 1,4-dioxane
								30-32 37-39	VOC, 1,4-dioxane
								37-39 44-46	VOC, 1,4-dioxane MS/MSD VOC, 1,4-dioxane
					0-1	Pb		6-10	
				2001004956	5-7	VOC & Pb	-	15-17 & DUP120519-A	VOC, 1,4-dioxane VOC, 1,4-dioxane
				2001004330	12.5-15	VOC WFD		22-24	VOC, 1,4-dioxane
	GP-26	12/5/2019	45		12.5-15	VOC	2001004870	29-31	VOC, 1,4-dioxane
SRI Exterior								36-38	VOC, 1,4-dioxane
OTT EXISTION								41-43	VOC, 1,4-dioxane
					0-1	Pb		8-12	VOC, 1,4-dioxane
				2001004957	5-7.5	VOC & MS/MSD		17-19	VOC, 1,4-dioxane
							†	24-26	VOC, 1,4-dioxane
	GP-27	12/9/2019	45				2001004871	31-33	VOC, 1,4-dioxane
								38-40	VOC, 1,4-dioxane
								44-46	VOC, 1,4-dioxane
				2001004958	0-1 & DUP120619-A	Pb		2-6	VOC, 1,4-dioxane
				2001004958	2.5-4	VOC MS/MSD		11-13	VOC, 1,4-dioxane
							Ī	18-20	VOC, 1,4-dioxane
	GP-28	12/6/2019	55				2001004872	25-27	VOC, 1,4-dioxane
								30-34	VOC, 1,4-dioxane
								39-41 & DUP120619-B	VOC, 1,4-dioxane
								46-48	VOC, 1,4-dioxane
			[	2001004959	0-1	Pb	[	2-6	VOC, 1,4-dioxane
					1-2	VOC	ļ	11-13	VOC, 1,4-dioxane
	GP-29	12/10/2019	45				2001004873	18-20	VOC, 1,4-dioxane
								25-27	VOC, 1,4-dioxane
								32-34	VOC, 1,4-dioxane
								38-41	VOC, 1,4-dioxane
				2004004000	0-1	Pb		1-3	VOC, 1,4-dioxane
	CB 20	10/44/0040	AE	2001004960	2-4	VOC	2004004074	8-10	VOC, 1,4-dioxane
	GP-30	12/11/2019	45		25-27	VOC	2001004874	15-17	VOC, 1,4-dioxane
								29-31	VOC, 1,4-dioxane
					0.4	Db 9 MCA4CD		36-38	VOC, 1,4-dioxane
	GP-31	12/12/2019	25	2001004961	0-1 1-3	Pb & MS/MSD VOC	2001004875	2-4	VOC, 1,4-dioxane
	Gr-31	12/12/2019	20		1-3	VUC	2001004075	9-11 & DUP121219 16-18	VOC, 1,4-dioxane
			<del>                                     </del>		0-1	Pb		16-18 1-3	VOC, 1,4-dioxane
				2001004962	20-22	VOC	1	8-10	VOC, 1,4-dioxane
	GP-32	12/12/2019	30		20-22	VUC	2001004876		VOC, 1,4-dioxane
								15-17 21-24	VOC, 1,4-dioxane

Investigation	Boring ID	Date Completed	Depth (feet)	Soil LUI#	Soil Sample Intervals (feet)	Analysis	Groundwater LUI #	Groundwater Sample Intervals (feet)	Analysis
				2001004963	0-1	Pb		6-10	VOC, 1,4-dioxane
	GP-33	12/13/2019	40	2001004303	4-5	VOC	2001004877	15-17	VOC, 1,4-dioxane
	01 00	12/10/2013	40				2001004077	21-24	MS/MSD VOC, 1,4-dioxane
								29-31	VOC, 1,4-dioxane
								47-50	VOC, 1,4-dioxane, dissolved lead
	GP-34	6/22-23/2020	100				2001004888	75-78	VOC, 1,4-dioxane, dissolved lead
								97-100	VOC, 1,4-dioxane, dissolved lead
								14-17	VOC, 1,4-dioxane, dissolved lead
	00.05	0/04 05/0000					0004004000	47-50	MS/MSD VOC, 1,4-dioxane, dissolved lead
	GP-35	6/24-25/2020	90				2001004889	68-72	VOC, 1,4-dioxane, dissolved lead
								88-90	VOC, 1,4-dioxane, dissolved lead
				2001005482	3-5	VOC, 1,4-dioxane		8-10	VOC, 1,4-dioxane, dissolved lead
				2001000102	0.0	VOO, 1, 1 dioxano	†	13-17	VOC, 1,4-dioxane, dissolved lead
								24-26	VOC, 1,4-dioxane, dissolved lead
	GP-36	6/29-30/2020	70				2001004890	38-40 & DUP063020	VOC, 1,4-dioxane, dissolved lead
								55-57	VOC, 1,4-dioxane, dissolved lead
								68-70	VOC, 1,4-dioxane, dissolved lead
								15-18	VOC, 1,4-dioxane, dissolved lead VOC, 1,4-dioxane, dissolved lead
								23-26 & DUP062920	
								31-34	VOC, 1,4-dioxane, dissolved lead
	GP-37	6/29 - 7/1/2020	100				2001004891	38-40	VOC, 1,4-dioxane, dissolved lead
								65-69	VOC, 1,4-dioxane, dissolved lead
								80-84	VOC, 1,4-dioxane, dissolved lead
								96-100	MS/MSD VOC, 1,4-dioxane, dissolved lead
	GP-38	6/29/2020	10	2001005483	3-4	VOC, 1,4-dioxane			
	GP-39	6/29/2020	10	2001005484	3-4	VOC, 1,4-dioxane			
	GP-40	6/30/2020	10	2001005485	3-4	VOC, 1,4-dioxane			
	GP-41	6/30/2020	10	2001005486	3-4	VOC, 1,4-dioxane			
	GP-42	6/30/2020	15	2001005487	3-4	VOC, 1,4-dioxane			
								6-9	VOC, 1,4-dioxane, dissolved lead
								14-17	VOC, 1,4-dioxane, dissolved lead
2020 SRI Exterior	GP-43	6/30/2020	40				2001004892	22-25	VOC, 1,4-dioxane, dissolved lead
								30-33	VOC, 1,4-dioxane, dissolved lead
								38-40	VOC, 1,4-dioxane, dissolved lead
	GP-44	7/1/2020	40				2001004893	24-27	VOC, 1,4-dioxane, dissolved lead
	GF -44	17172020	40				2001004093	37-40	VOC, 1,4-dioxane, dissolved lead
				2001005489	0-1	Pb		11-14	VOC, 1,4-dioxane, dissolved lead
	GP-45	7/1/2020	40	2001003409	11-12	VOC, 1,4-dioxane	2001004894	29-32	VOC, 1,4-dioxane, dissolved lead
							Ī	37-40 & DUP070120	VOC, 1,4-dioxane, dissolved lead
				2001006860	0-1	Pb		9-12	VOC, 1,4-dioxane, dissolved lead
	GP-46	7/1/2020	40	2001000000	9-10	VOC, 1,4-dioxane	2001004895	17-20	VOC, 1,4-dioxane, dissolved lead
	01 40	77172020	40				2001004033	30-33	VOC, 1,4-dioxane, dissolved lead
								38-40	VOC, 1,4-dioxane, dissolved lead
	GP-47	7/2/2020	40	2001005488	0-1	Pb	2001004896	38-40	VOC, 1,4-dioxane, dissolved lead
					14-15	VOC, 1,4-dioxane			
								8-12	VOC, 1,4-dioxane, dissolved lead
	GP-48	7/2/2020	40				2001004897	25-27	VOC, 1,4-dioxane, dissolved lead
								31-34	VOC, 1,4-dioxane, dissolved lead
								10-12	VOC, 1,4-dioxane, dissolved lead
							[	17-20	VOC, 1,4-dioxane, dissolved lead
	GP-49	7/6-7/2020	75				2001004898	45-47	VOC, 1,4-dioxane, dissolved lead
							[	57-59	VOC, 1,4-dioxane, dissolved lead
								73-75	VOC, 1,4-dioxane, dissolved lead
								15-18	VOC, 1,4-dioxane, dissolved lead
							[	35-38	VOC, 1,4-dioxane, dissolved lead
							[	45-47	MS/MSD VOC, 1,4-dioxane, dissolved
	GP-50	7/8-9/2020	100				2001004899		VOC 1.4 diayana digaahad laad
							[	58-60 & DUP070920	VOC, 1,4-dioxane, dissolved lead
		1	1					78-80	VOC, 1,4-dioxane, dissolved lead
			l l					98-100	VOC, 1,4-dioxane, dissolved lead

Investigation	Boring ID	Date Completed	Depth (feet)	Soil LUI#	Soil Sample Intervals (feet)	Analysis	Groundwater LUI #	Groundwater Sample Intervals (feet)	Analysis
	SB-1	10/4/2019	10	2001004946	0.5-1	Pb	2001004860	4-9	VOC, 1,4-dioxane, dissolved lead
	OD 1	10/4/2013	10	2001004340	6-6.5	VOC	2001004000	43	VOC, 1,4-dioxarie, dissolved lead
	SB-2	10/4/2019	10	2001004947	0.5-1	Pb	2001004861	5-10	VOC, 1,4-dioxane, dissolved lead
					6-8	VOC			
	SB-3	10/4/2019	12	2001004948	0.5-1	Pb	2001004862	6-11	VOC, 1,4-dioxane, dissolved lead
					6-8	VOC		-	
	SB-4	10/4/2019	12	2001004949	0-1	Pb	2001004863	6-11 & DUP100419-A	VOC, 1,4-dioxane, dissolved lead
					6-8	VOC			
	SB-5	10/4/2019	12	2001004950	0-1' & DUP100419-B	Pb	2001004864	6-11	VOC, 1,4-dioxane, dissolved lead
					6-8	VOC			
	SB-6	10/4/2019	12	2001004951	0-1	Pb	2001004865	6-11	VOC, 1,4-dioxane, dissolved lead
					6-8 & DUP100419-C	VOC Pb MS/MSD			
	SB-7	10/7/2019	12	2001004952	0-1 8-10	VOC MS/MSD	2001004866	6-11	MS/MSD VOC, 1,4-dioxane, dissolved lead
					8-10 0-1	Pb MS/MSD		7-10	VOC, 1,4-dioxane
	SB-8	12/2/2019	30	2001004964	5.5-7.5	VOC	2001004878	15-17 & DUP120219	VOC, 1,4-dioxane
	05 0	12/2/2013	30	2001004304	25-27	VOC	2001004070	22-24	VOC, 1,4-dioxane
					0-1	Pb	2001004879	11-14	VOC, 1,4-dioxane
	SB-9	12/3/2019	35	2001004965	8-10	VOC MS/MSD	2001004073	16-18	VOC, 1,4-dioxane
					30-32	VOC		23-25	MS/MSD VOC, 1,4-dioxane
					5	Pb		9-12	VOC, 1,4-dioxane
SRI Interior	SB-10	12/3/2019	30	2001004966	8-10	VOC	2001004880	17-19	VOC, 1,4-dioxane
							†	23-25 & DUP120319	VOC, 1,4-dioxane
					0-1	Pb		10-12	VOC, 1,4-dioxane
	SB-11	12/4/2019	35	2001005475	8-10	VOC	2001004881	17-19	VOC, 1,4-dioxane
					15-17	VOC	1	24-26	VOC, 1,4-dioxane
				0004005470	0-1	Pb		10-13	VOC, 1,4-dioxane
	SB-12	12/4/2019	30	2001005476	8-10	VOC MS/MSD	2001004882	18-20	VOC, 1,4-dioxane
								21-24	VOC, 1,4-dioxane
					0-1	Pb		10-13	VOC, 1,4-dioxane
	SB-13	12/5/2019	40	2001005477	11-13	VOC	2001004883	18-20	VOC, 1,4-dioxane
					16-18	VOC		34-36	VOC, 1,4-dioxane
	SB-14	12/5/2019	30	2001005478	0-1	Pb	2001004884	10-13	VOC, 1,4-dioxane
					10-12.5	VOC			100, 1, 100
				2001005479	0-1	Pb	_	8-11	VOC, 1,4-dioxane
	SB-15	12/6/2019	35		12.5-15	VOC	2001004885	16-18	VOC, 1,4-dioxane
					1	1		23-25	MS/MSD VOC, 1,4-dioxane
				2001005480	0-1	Pb	4	10-13	VOC, 1,4-dioxane
	SB-16	12/9/2019	35		12.5-15	VOC	2001004886	18-20	VOC, 1,4-dioxane
						Di .		25-27	VOC, 1,4-dioxane
	SB-17	12/10/2019	13	2001005481	0-1	Pb	2001004887	7-13	VOC, 1,4-dioxane
	CD 10	7/7/2020	10	2001006961	11-13	VOC 1 4 diayana			
	SB-18 SB-19	7/7/2020 7/7/2020	10 15	2001006861	2-4 8-10	VOC, 1,4-dioxane VOC, 1,4-dioxane	1		
	SB-19	7/7/2020	10	2001006863	1-3	VOC, 1,4-dioxane	1		
2020 SRI Interior						MS/MSD VOC, 1,4-	1		
	SB-21	7/7/2020	10	2001006864	3-5	dioxane	1		
	SB-22	7/7/2020	10	2001006865	2-4	VOC, 1,4-dioxane	1		
	SB-23	7/7/2020	6	2001006866	2-4	VOC, 1,4-dioxane			

## Table 3 Well and Stream Gauge Water Level Data Summary Water Gremlin White Bear Lake Township, MN Wenck Project No. B002606-19-017 September 2020

MONITORING WELI	L GAUGE	LAMBERT C	REEK GAUGI	<u> </u>	
					Gaining Vs. Losing Stream (height of stream -
	Water Level			Water Level	height of well water level in ft) NOTE: positive
	(Well) in ft			(Creek) in ft	number indicates losing negative number
Date & Time	AMSL	Date & Time	Pressure	AMSL	indicates gaining scenario
2020/04/24 14:00:00	912.63	2020/04/24 14:00:00	1060.1	912.70	0.0640
2020/04/25 14:00:00	912.64	2020/04/25 14:00:00	1062.608	912.69	0.0429
2020/04/26 14:00:00	912.59	2020/04/26 14:00:00	1064.825	912.66	0.0697
2020/04/27 14:00:00	912.62	2020/04/27 14:00:00	1057.883	912.70	0.0850
2020/04/28 14:00:00	912.97	2020/04/28 14:00:00	1066.167	913.10	0.1271
2020/04/29 14:00:00	912.78	2020/04/29 14:00:00	1067.158	912.85	0.0697
2020/04/30 14:00:00	912.77	2020/04/30 14:00:00	1065.992	912.84	0.0678
2020/05/01 14:00:00	912.75	2020/05/01 14:00:00	1057.475	912.77	0.0142
2020/05/02 14:00:00	912.74	2020/05/02 14:00:00	1062.2	912.82	0.0736
2020/05/03 14:00:00	912.68	2020/05/03 14:00:00	1064.242	912.72	0.0468
2020/05/04 14:00:00	912.65	2020/05/04 14:00:00	1065.875	912.70	0.0506
2020/05/05 14:00:00	912.60	2020/05/05 14:00:00	1064.242	912.68	0.0774
2020/05/06 14:00:00	912.60	2020/05/06 14:00:00	1066.867	912.70	0.1004
2020/05/07 14:00:00	912.55	2020/05/07 14:00:00	1063.192	912.68	0.1291
2020/05/08 14:00:00	912.50	2020/05/08 14:00:00	1069.083	912.66	0.1520
2020/05/09 14:00:00	912.50	2020/05/09 14:00:00	1060.858	912.65	0.1520
2020/05/10 14:00:00	912.51	2020/05/10 14:00:00	1067.742	912.63	0.1252
2020/05/11 14:00:00	912.47	2020/05/11 14:00:00	1068.033	912.61	0.1444
2020/05/12 14:00:00	912.46	2020/05/12 14:00:00	1067.333	912.61	0.1520
2020/05/13 14:00:00	912.47	2020/05/13 14:00:00	1059.983	912.61	0.1310
2020/05/14 14:00:00	912.49	2020/05/14 14:00:00	1054.675	912.62	0.1329
2020/05/15 14:00:00	912.44	2020/05/15 14:00:00	1060.275	912.59	0.1501
2020/05/16 14:00:00	912.46	2020/05/16 14:00:00	1063.658	912.61	0.1444
2020/05/17 14:00:00 2020/05/18 14:00:00	912.96 912.85	2020/05/17 14:00:00 2020/05/18 14:00:00	1074.392 1074.1	913.15 913.04	0.1903
2020/05/19 14:00:00	912.81	2020/05/19 14:00:00	1074.1	912.96	0.1865 0.1520
2020/05/19 14:00:00	912.78	2020/05/20 14:00:00	1074.042	912.89	0.1157
2020/05/21 14:00:00	912.75	2020/05/21 14:00:00	1068.733	912.84	0.0946
2020/05/22 14:00:00	912.74	2020/05/22 14:00:00	1065.642	912.81	0.0697
2020/05/23 14:00:00	912.81	2020/05/23 14:00:00	1062.958	912.83	0.0276
2020/05/24 14:00:00	912.78	2020/05/24 14:00:00	1060.158	912.81	0.0257
2020/05/25 14:00:00	912.74	2020/05/25 14:00:00	1060.917	912.78	0.0315
2020/05/26 14:00:00	912.75	2020/05/26 14:00:00	1059.342	912.78	0.0334
2020/05/27 14:00:00	912.86	2020/05/27 14:00:00	1066.225	912.90	0.0353
2020/05/28 14:00:00	912.83	2020/05/28 14:00:00	1064.592	912.85	0.0219
2020/05/29 14:00:00	912.76	2020/05/29 14:00:00	1071.358	912.82	0.0544
2020/05/30 14:00:00	912.69	2020/05/30 14:00:00	1075.208	912.79	0.0927
2020/05/31 14:00:00	912.63	2020/05/31 14:00:00	1072.875	912.77	0.1405
2020/06/01 14:00:00	912.58	2020/06/01 14:00:00	1058.992	912.78	0.2018
2020/06/02 14:00:00	912.50	2020/06/02 14:00:00	1058.467	912.76	0.2611
2020/06/03 14:00:00	912.71	2020/06/03 14:00:00	1060.217	912.78	0.0716
2020/06/04 14:00:00	912.63	2020/06/04 14:00:00	1057.65	912.76	0.1271
2020/06/05 14:00:00	912.74	2020/06/05 14:00:00	1063.483	912.77	0.0219
2020/06/06 14:00:00	912.65	2020/06/06 14:00:00	1066.983	912.74	0.0965
2020/06/07 14:00:00	912.62	2020/06/07 14:00:00	1059.633	912.73	0.1118
2020/06/08 14:00:00	912.53	2020/06/08 14:00:00	1053.917	912.72	0.1846
2020/06/09 14:00:00	912.49	2020/06/09 14:00:00	1049.017	912.70	0.2171
2020/06/10 14:00:00	912.77	2020/06/10 14:00:00	1053.858	912.74	-0.0336
2020/06/11 14:00:00	912.68	2020/06/11 14:00:00	1066.517	912.75	0.0716
2020/06/12 14:00:00	912.61	2020/06/12 14:00:00	1073.283	912.73	0.1176
2020/06/13 14:00:00	912.51	2020/06/13 14:00:00	1072.292	912.68	0.1673
2020/06/14 14:00:00	912.41	2020/06/14 14:00:00	1068.442	912.66	0.2477
2020/06/15 14:00:00	912.34	2020/06/15 14:00:00	1065.933	912.62	0.2764
2020/06/16 14:00:00	912.25	2020/06/16 14:00:00	1064.3	912.62	0.3721
2020/06/17 14:00:00	912.16	2020/06/17 14:00:00	1059.633	912.60	0.4487
2020/06/18 14:00:00	912.14	2020/06/18 14:00:00	1055.492	912.57	0.4295
2020/06/19 14:00:00	912.79	2020/06/19 14:00:00	1066.692	912.75	-0.0355
2020/06/20 14:00:00	912.77	2020/06/20 14:00:00	1060.8	912.73	-0.0432
2020/06/21 14:00:00	912.74	2020/06/21 14:00:00	1056.192	912.73	-0.0068
2020/06/22 14:00:00	912.69	2020/06/22 14:00:00	1058	912.66	-0.0317
2020/06/23 14:00:00	912.62	2020/06/23 14:00:00	1058	912.65	0.0353 0.1080
2020/06/24 14:00:00 2020/06/25 14:00:00	912.54 912.47	2020/06/24 14:00:00 2020/06/25 14:00:00	1056.775 1057.533	912.65 912.64	0.1080
2020/06/25 14:00:00	912.47	2020/06/25 14:00:00	1057.533	912.63	0.1673
2020/06/26 14:00:00	912.40	2020/06/26 14:00:00	1054.442	912.59	0.2248
2020/06/27 14:00:00	912.31	2020/06/27 14:00:00	1052.983	912.59	0.2879
2020/06/29 14:00:00	912.24	2020/06/29 14:00:00	1049.773	913.02	0.1291
2020/00/23 14.00.00	312.03	2020/00/29 14.00.00	1004.003	313.UZ	0.1231

## Table 3 Well and Stream Gauge Water Level Data Summary Water Gremlin White Bear Lake Township, MN Wenck Project No. B002606-19-017

September 2020

MONITORING WELL	LGAUGE	LAMBERT C	REEK GAUG	E	
					Gaining Vs. Losing Stream (height of stream -
	Water Level			Water Level	height of well water level in ft) NOTE: positive
	(Well) in ft			(Creek) in ft	number indicates losing negative number
Date & Time	AMSL	Date & Time	Pressure	AMSL	indicates gaining scenario
2020/06/30 14:00:00	912.85	2020/06/30 14:00:00	1065.875	912.97	0.1252
2020/07/01 14:00:00	912.81	2020/07/01 14:00:00	1067.917	912.93	0.1252
2020/07/02 14:00:00	912.74 912.66	2020/07/02 14:00:00	1071.883 1071.008	912.90 912.87	0.1616 0.2133
2020/07/03 14:00:00 2020/07/04 14:00:00	912.58	2020/07/03 14:00:00 2020/07/04 14:00:00	1071.008	912.87	0.2133
2020/07/05 14:00:00	912.52	2020/07/05 14:00:00	1065.292	912.81	0.2879
2020/07/06 14:00:00	912.63	2020/07/06 14:00:00	1065.583	912.82	0.1922
2020/07/07 14:00:00	912.68	2020/07/07 14:00:00	1063.483	912.79	0.1099
2020/07/08 14:00:00	912.69	2020/07/08 14:00:00	1058.758	912.80	0.1080
2020/07/09 14:00:00	912.72	2020/07/09 14:00:00	1059.633	912.76	0.0334
2020/07/10 14:00:00	912.65	2020/07/10 14:00:00	1062.9	912.75	0.1042
2020/07/11 14:00:00	912.56	2020/07/11 14:00:00	1060.683	912.73	0.1712
2020/07/12 14:00:00	912.44	2020/07/12 14:00:00	1060.975	912.69	0.2496
2020/07/13 14:00:00	912.33	2020/07/13 14:00:00	1057.708	912.67	0.3396
2020/07/14 14:00:00	912.79	2020/07/14 14:00:00	1062.608	912.76	-0.0260
2020/07/15 14:00:00	912.71	2020/07/15 14:00:00	1064.008	912.73	0.0200
2020/07/16 14:00:00	912.62	2020/07/16 14:00:00	1062.258	912.72	0.1061
2020/07/17 14:00:00 2020/07/18 14:00:00	912.51 912.78	2020/07/17 14:00:00 2020/07/18 14:00:00	1060.975 1055.492	912.69 912.76	0.1807 -0.0260
2020/07/19 14:00:00	912.78	2020/07/19 14:00:00	1055.492	912.76	0.0659
2020/07/20 14:00:00	912.56	2020/07/20 14:00:00	1063.775	912.69	0.1291
2020/07/21 14:00:00	912.76	2020/07/21 14:00:00	1059.925	912.72	-0.0374
2020/07/22 14:00:00	912.68	2020/07/22 14:00:00	1065.175	912.69	0.0123
2020/07/23 14:00:00	912.59	2020/07/23 14:00:00	1066.517	912.66	0.0697
2020/07/24 14:00:00	912.48	2020/07/24 14:00:00	1062.142	912.67	0.1884
2020/07/25 14:00:00	912.43	2020/07/25 14:00:00	1058.758	912.65	0.2209
2020/07/26 14:00:00	912.85	2020/07/26 14:00:00	1065.117	912.81	-0.0432
2020/07/27 14:00:00	912.75	2020/07/27 14:00:00	1064.358	912.77	0.0123
2020/07/29 14:00:00	912.60	2020/07/29 14:00:00	1061.733	912.72	0.1157
2020/07/30 14:00:00	912.49	2020/07/30 14:00:00	1064.592	912.69	0.1922
2020/07/31 14:00:00	912.43	2020/07/31 14:00:00	1063.483	912.68	0.2420
2020/08/01 14:00:00	912.38	2020/08/01 14:00:00	1059.925	912.66	0.2783
2020/08/02 14:00:00	912.29	2020/08/02 14:00:00	1064.242	912.64	0.3568
2020/08/03 14:00:00	912.22	2020/08/03 14:00:00	1067.1	912.62	0.4008
2020/08/04 14:00:00 2020/08/05 14:00:00	912.12 912.07	2020/08/04 14:00:00 2020/08/05 14:00:00	1064.3 1061.792	912.60 912.60	0.4793 0.5367
2020/08/06 14:00:00	912.04	2020/08/06 14:00:00	1061.732	912.58	0.5463
2020/08/07 14:00:00	912.01	2020/08/07 14:00:00	1057.533	912.57	0.5597
2020/08/08 14:00:00	911.99	2020/08/08 14:00:00	1058.642	912.57	0.5826
2020/08/09 14:00:00	912.85	2020/08/09 14:00:00	1068.675	913.05	0.2094
2020/08/10 14:00:00	912.70	2020/08/10 14:00:00	1060.217	912.68	-0.0145
2020/08/11 14:00:00	912.61	2020/08/11 14:00:00	1061.967	912.69	0.0793
2020/08/12 14:00:00	912.72	2020/08/12 14:00:00	1065.058	912.76	0.0410
2020/08/13 14:00:00	912.73	2020/08/13 14:00:00	1063.483	912.74	0.0123
2020/08/14 14:00:00	912.65	2020/08/14 14:00:00	1060.567	912.75	0.1004
2020/08/15 14:00:00	912.75	2020/08/15 14:00:00	1066.808	912.76	0.0085
2020/08/16 14:00:00	912.70	2020/08/16 14:00:00	1065.758	912.77	0.0640
2020/08/17 14:00:00	912.58	2020/08/17 14:00:00	1068.967	912.75	0.1731
2020/08/18 14:00:00 2020/08/19 14:00:00	912.51 912.41	2020/08/18 14:00:00 2020/08/19 14:00:00	1067.858 1063.133	912.74 912.72	0.2362 0.3147
2020/08/19 14:00:00	912.41	2020/08/19 14:00:00	1059.342	912.72	0.3147
2020/08/21 14:00:00	912.33	2020/08/20 14:00:00	1056.95	912.73	0.4372
2020/08/22 14:00:00	912.68	2020/08/22 14:00:00	1059.808	912.77	0.0850
2020/08/23 14:00:00	912.58	2020/08/23 14:00:00	1063.775	912.83	0.2515
2020/08/24 14:00:00	912.50	2020/08/24 14:00:00	1064.533	912.80	0.2937
2020/08/25 14:00:00	912.42	2020/08/25 14:00:00	1064.242	912.85	0.4238
2020/08/26 14:00:00	912.32	2020/08/26 14:00:00	1055.492	912.73	0.4161
2020/08/27 14:00:00	912.25	2020/08/27 14:00:00	1057.592	912.71	0.4525
2020/08/28 14:00:00	912.68	2020/08/28 14:00:00	1054.5	912.73	0.0506
2020/08/29 14:00:00	912.59	2020/08/29 14:00:00	1061.442	912.73	0.1425
2020/08/30 14:00:00	912.49	2020/08/30 14:00:00	1056.483	912.72	0.2286
2020/08/31 14:00:00	912.79	2020/08/31 14:00:00	1060.158	912.83	0.0372
2020/09/01 14:00:00	912.70	2020/09/01 14:00:00	1059.458	912.79	0.0908
2020/09/02 14:00:00	912.64	2020/09/02 14:00:00	1057.358	912.76	0.1176

												s	Sample ID, Date Co	llected & MPCA L	LUI#								
	MPCA Tier 2	MPCA		GP-1 (0-1')	GP-1 (2-4')	GP-1 (8-10')	GP-1 (30-32')	GP-2 (0-1)	GP-2 (5-7)	GP-2 (22-24)	GP-3 (0-1)	GP-3 (0-2)	GP-3 (26-28)	GP-4 (0-1)	GP-4 (4-6)	GP-5 (0-1)	GP-5 (2-4)	GP-6 (0-1)	GP-6 (2-4)	GP-6 (4-6)	GP-7 (0-1)	GP-7 (2-4)	GP-7 (10-
Compound/Parameter	Industrial	SLVs	CAS No.	06/14/2019	06/14/2019	06/14/2019	06/14/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/20
	SRVs 2009	2013		2001004917	2001004917	2001004917	2001004917	2001004918	2001004918	2001004918	2001004919	2001004919	2001004919	2001004920	2001004920	2001004921	2001004921	2001004922	2001004922	2001004922	2001004923	2001004923	20010049
1,4-Dioxane (p-Dioxane) EPA Method 8	260B - reported in ma/l	/a		2001004317	2001004317	2001004317	2001004917	2001004910	2001004310	2001004910	2001004313	2001004919	2001004313	2001004320	2001004920	2001004921	2001004921	2001004922	2001004922	2001004322	2001004923	2001004323	20010048
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
olatile Organic Compounds (VOCs) EPA							1			1.0		.,,,	110		1						1.10		1
1,1,1-Trichloroethane	472	55.7	71-55-6	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	< 0.256
1.1-Dichloroethane	55	.41	75-34-3	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	<0.256
1,1-Dichloroethene	60	1.4	75-35-4	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	<0.256
1,2-Dichloroethane	6	0.0038	107-06-2	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	< 0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	< 0.256
Chloroethane	3000	NE	75-00-3	NS	NS	<0.302	<0.296	NS	<0.171 UJ	<0.207 UJ	NS	<0.275 UJ	<0.273 UJ	NS	<0.231 UJ	NS	<0.178 UJ	NS	NS	<0.251 UJ	NS	<0.219 UJ	<0.256 l
Ethylbenzene	200	1.1	100-41-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	131	0.042	127-18-4	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	< 0.251	NS	<0.219	<0.256
Toluene	305	2.5	108-88-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	46	0.0023	79-01-6	NS	NS	< 0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	<0.256
Vinyl chloride	2.2	0.0014	75-01-4	NS	NS	< 0.302	<0.296	NS	<0.171 UJ	<0.207 UJ	NS	<0.275 UJ	<0.273 UJ	NS	<0.231 UJ	NS	<0.178 UJ	NS	NS	<0.251 UJ	NS	<0.219 UJ	<0.256 U
cis-1,2-Dichloroethene	22	0.21	156-59-2	NS	NS	<0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	<0.256
p-Isopropyltoluene	N/A	N/A	99-87-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	33	0.42	156-60-5	NS	NS	< 0.302	<0.296	NS	<0.171	<0.207	NS	<0.275	<0.273	NS	<0.231	NS	<0.178	NS	NS	<0.251	NS	<0.219	<0.256
Lead EPA Method 6010D / 6020 - reported	d in mg/kg																						
Lead	700	2700	7439-92-1	45.1	56.4	NS	NS	23.8	NS	NS	47.9	NS	NS	11.5	NS	57.4	NS	247	263	NS	69.6	NS	NS
												S	Sample ID, Date Co	llected & MPCA L	_UI #								
Compound/Parameter	MPCA Tier 2 Industrial	MPCA SLVs	CAS No.	GP-8 (0-1)	GP-8 (6-8)	GP-9 (0-1)	GP-9 (5-7)	GP-9 (6-8)	GP-10 (0-1)	GP-10 (1-3)	GP-11 (0-1)	GP-11 (6-8)	GP-12 (0-1)	GP-12 (4-6)	GP-12 (6-8)	GP-12 (8-9.5)	GP-13 (0-1)	GP-14 (0-1)	GP-14 (10-12)	GP-15 (0-1)	GP-15 (2-4)	GP-16 (0-1)	GP-16 (2-
Compound/Farameter	SRVs 2009	2013	CAS NO.	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/19/2019	06/19/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/201
				2001004924	2001004924	2001004925	2001004925	2001004925	2001004926	2001004926	2001004934	2001004934	2001004935	2001004935	2001004935	2001004935	2001004936	2001004937	2001004937	2001004938	2001004938	2001004939	200100493
1,4-Dioxane (p-Dioxane) EPA Method 8	260B - reported in mg/l	(g																					
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Volatile Organic Compounds (VOCs) EPA	Method 8260B (Modif	ied List / Detected Cor	mpounds) - repor	rted in mg/kg																			
1,1,1-Trichloroethane	472	55.7	71-55-6	NS	<0.256	NS	NS	<0.189	NS	<0.174	NS	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS	<0.119
1,1-Dichloroethane	55	.41	75-34-3	NS	<0.256	NS	NS	<0.189	NS	<0.174	NS	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS	<0.119
1,1-Dichloroethene	60	1.4	75-35-4	NS	<0.256	NS	NS	<0.189	NS	<0.174	NS	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS	<0.119
1,2-Dichloroethane	6	0.0038	107-06-2	NS	<0.256	NS	NS	<0.189	NS	<0.174	NS	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS	<0.119
Chloroethane	3000	NE	75-00-3	NS	<0.256 UJ	NS	NS	<0.189 UJ	NS	<0.174 UJ	NS	<0.153 UJ	NS	<0.230 UJ	NS	<0.277 UJ	NS	NS	<0.158	NS	<0.123	NS	<0.119
Ethylbenzene	200	1.1	100-41-4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	131	0.042	127-18-4	NS	<0.256	NS	NS	<0.189	NS	<0.174	NS	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS	0.269
Toluene	305	2.5	108-88-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	46	0.0023	79-01-6	NS NC	<0.256	NS NC	NS NC	<0.189	NS	<0.174	NS NC	<0.153	NS NC	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS NC	0.826
Vinyl chloride	2.2	0.0014	75-01-4	NS	<0.256 UJ	NS NC	NS NC	<0.189 UJ	NS NC	<0.174	NS NC	<0.153	NS	<0.230	NS	<0.277	NS	NS	<0.158	NS	<0.123	NS NC	<0.119
cis-1,2-Dichloroethene	22	0.21	156-59-2	NS	<0.256	NS NC	NS NC	<0.189	NS NC	<0.174	NS NC	<0.153	NS NC	<0.230	NS NC	<0.277	NS	NS NC	<0.158	NS	<0.123	NS NC	<0.119
p-Isopropyltoluene trans-1.2-Dichloroethene	N/A 33	N/A 0.42	99-87-6 156-60-5	NS NS	NS <0.256	NS NS	NS NS	NS <0.189	NS NS	NS <0.174	NS NS	NS <0.153	NS NS	NS <0.230	NS NS	NS <0.277	NS NS	NS NS	NS <0.158	NS NS	NS <0.123	NS NS	NS <0.119
, , , , , , , , , , , , , , , , , , , ,		0.42	156-60-5	INS	<0.256	INS	INS	<0.169	INS	<0.174	INS	<0.153	INS	<0.230	INS	<0.277	INS	INS	<0.156	INS	<0.123	INS	<0.119
Lead EPA Method 6010D / 6020 - reported		2700	7420.00.1	25.0	I NC	7.00	20.0	l NC	2 54	I NC	457.1	l NC	447	NC.	47.5	I NC	450	472 1.	l NC	474	I NC	740	NO
Lead	700	2700	7439-92-1	25.8	NS	7.22	28.0	NS	3.51	NS	157 J	NS	147	NS	17.5	NS	158	473 J+	NS	174	NS	719	NS
											U MDC							7					
	MPCA Tier 2	MPCA		<del></del>	T						ollected & MPCA L		T				T	4					
Compound/Parameter	Industrial	SLVs	CAS No.	GP-17 (0-1)	GP-17 (8-10)	GP-17 (28-30)	GP-18 (0-1)	GP-18 (4-6)	GP-18 (6-8)	GP-18 (41-43)	HA-1 (0-1)	HA-2 (0-1)	HA-3 (0-1)	HA-4 (0-1)	HA-5 (0-1)	HA-6 (0-0.5)	HA-7 (0-0.5)	4					
	SRVs 2009	2013		06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/19/2019	06/19/2019	06/19/2019	06/19/2019	06/19/2019	06/19/2019	06/19/2019	4					
				2001004940	2001004940	2001004940	2001004941	2001004941	2001004941	2001004941	2001004927	2001004928	2001004929	2001004930	2001004931	2001004932	2001004933	J					
										•	-												
1,4-Dioxane (p-Dioxane) EPA Method 8		<u> </u>									•							1					
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS						
1,4-Dioxane (p-Dioxane) /olatile Organic Compounds (VOCs) EPA	250 A Method 8260B (Modif	.0021	mpounds) - repor	rted in mg/kg			NS	NS	NS	NS	•	NS		NS	NS	NS	NS						
1,4-Dioxane (p-Dioxane)	250	.0021				NS <0.147	NS NS	NS <0.186	NS NS	NS <0.205	NS <1.63	NS <1.78	NS <0.957	NS <1.66	NS <2.28	NS <0.301	NS <0.236						

## Lead

NE = Not Established

1,1-Dichloroethane

1,1-Dichloroethene

1,2-Dichloroethane

Ethylbenzene

Trichloroethene

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

p-Isopropyltoluene

Vinyl chloride

Toluene

Tetrachloroethene

NS = Not Sampled

-- = Not Sampled

< = Less than the laboratory reporting limit

Lead EPA Method 6010D / 6020 - reported in mg/kg

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit Industrial SRV exceedance

3000

200

131

305

2.2

N/A

## SLV exceedance

mg/kg = milligrams per kilogram (parts per million)

MPCA = Minnesota Pollution Control Agency

SRV = Soil Reference Value

SLV = Soil Leaching Value

## Qualifiers (US EPA Qualifier Code):

<0.148

<0.148

<0.148

<0.148

NS

<0.148

NS

<0.148

<0.148

<0.148

NS

<0.148

NS

140 J

<0.147

<0.147

<0.147

<0.147

NS

<0.147

NS

<0.147

<0.147

<0.147

NS

NS

NS

NS

NS

NS

776 NS

75-34-3

75-35-4

107-06-2

75-00-3

100-41-4

127-18-4

108-88-3

79-01-6

75-01-4

156-59-2

99-87-6

156-60-5

7439-92-1

0.0038

NE

0.042

0.0023

0.0014

N/A

0.42

2700

UJ = Samples marked with this flag were non-detect but contained a representative quality control sample with a relative percent difference (RPD)outside the quality control range, or percent recovery of the analyte was below the QC limits; The associated parent sample is therefore flagged as estimated even though the results were below the laboratory reporting limits.

NS 982

<1.63

<1.63

<1.63

<1.63 UJ

NS

<1.63

<1.63

<1.63

<1.63

NS

<1.63

NS

<1.66

<1.66

<1.66

<1.66 UJ

NS

<1.66

NS

<1.66

<1.66

<1.66

NS

<1.66

563

< 0.957

< 0.957

< 0.957

<0.957 UJ

< 0.957

< 0.957

< 0.957

< 0.957

< 0.957

498

NS

<1.78

<1.78

<1.78

<1.78 UJ

NS

<1.78

<1.78

<1.78

<1.78

NS

<1.78

566

<2.28

<2.28

<2.28

<2.28 UJ

NS

<2.28

NS

<2.28

<2.28

<2.28

NS

<2.28

979

< 0.301

< 0.301

< 0.301

< 0.301

< 0.301

<0.301

<0.301

NS

< 0.301

60.1

<0.301 UJ

<0.236

<0.236

< 0.236

<0.236 UJ

NS

<0.236

NS

<0.236

<0.236

<0.236

NS

<0.236

71.1

- J = Analyte was positively identified in the sample, but the concentration is an estimated (approximate) value; Samples marked with this flag were designated as estimated based on

<0.205

<0.205

< 0.205

<0.205

NS

<0.205

<0.205

<0.205

<0.205

NS

<0.205

NS

13.8

<0.186

<0.186

<0.186

<0.186

NS

<0.186

NS

<0.186

<0.186

<0.186

NS

<0.186

- an associated MS/MSD QC sample that contained lead recovery outside of the QC limits; As a result, the parent sample is considered estimated. This flag was also added to samples where the serial dilution exceeded a percentage with the result greater than 50x the MDL; This value is considered to be estimated also.
- J+= Analyte was positively identified in the sample, but the concentration is believed to be estimated with a potential positive bias; Samples with this flag had an associated MS/MS sample where the RPD was outside the QC limits, resulting in a parent sample detection that is considered estimated with a potential positive bias.

													Sample ID, LUI a	nd Date Collected									
	MPCA Tier 2	MPCA		GP-23 (0-1)	GP-23 (5-7.5)	GP-24 (0-1)	GP-24 (5-7.5)	GP-25 (0-1)	GP-25 (0-2.5)	GP-25 (7.5-10)	GP-26 (0-1)	GP-26 (5-7)	GP-26 (12.5-15)	GP-27 (0-1)	GP-27 (5-7.5)	GP-28 (0-1)	DUP 120619-A	GP-28 (2.5-4)	GP-29 (0-1)	GP-29 (1-2)	GP-30 (0-1)	GP-30 (2-4)	GP-30 (25-27)
Compound/Parameter	Industrial	SLVs	CAS No.	12/3/2019	12/3/2019	12/3/2019	12/3/2019	12/4/2019	12/4/2019	12/4/2019	12/5/2019	12/5/2019	12/5/2019	12/9/2019	12/9/2019	12/6/2019	12/6/2019	12/6/2019	12/10/2019	12/10/2019	12/11/2019	12/11/2019	12/11/2019
	SRVs 2009	2013		2001004953	2001004953	2001004954	2001004954	2001004955	2001004955	2001004955	2001004956	2001004956	2001004956	2001004957	2001004957	2001004958	2001004958	2001004958	2001004959	2001004959	2001004960	2001004960	2001004960
1,4-Dioxane (p-Dioxane) EPA Method 826	60B - reported in ma/k	n		2001004333	2001004300	2001004304	2001004304	2001004333	2001004333	2001004300	2001004330	2001004330	2001004330	2001004301	2001004301	2001004330	2001004330	2001004330	2001004303	2001004303	2001004300	2001004300	2001004300
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Volatile Organic Compounds (VOCs) EPA					140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	NO	140	140
1,1,1-Trichloroethane	472	55.7	71-55-6	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
1.1-Dichloroethane	55	.41	75-34-3	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS NS	<0.23	<0.26
1,1-Dichloroethane	60	1.4	75-35-4	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
1,2-Dichloroethane	6	0.0038	107-06-2	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS NS	<0.058	<0.065
Chloroethane	3000	NE	75-00-3	NS	<0.286	NS NS	<0.275	NS	<0.54 J-	<0.59 J-	<0.58	<0.71	<0.60	NS	<0.61	NS	NS	<0.58	NS	<0.58	NS NS	<0.58	<0.65
Ethylbenzene	200	1.1	100-41-4	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	0.30	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
Tetrachloroethene	131	0.042	127-18-4	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS NS	<0.058	<0.065
Toluene	305	2.5	108-88-3	NS	<0.286	NS	<0.275	NS	<0.054	<0.059	<0.058	5.8	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
Trichloroethene	46	0.0023	79-01-6	NS	<0.0572	NS	<0.0551	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
Vinyl chloride	2.2	0.0014	75-01-4	NS	<0.143	NS	<0.138	NS	<0.022	<0.024	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
cis-1,2-Dichloroethene	22	0.21	156-59-2	NS	<0.143	NS	<0.138	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
p-Isopropyltoluene	N/A	N/A	99-87-6	NS	<0.286	NS	<0.275	NS	<0.054	<0.059	<0.058	23.6	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.058	<0.065
trans-1,2-Dichloroethene	33	0.42	156-60-5	NS	<0.286	NS	<0.275	NS	<0.054	<0.059	<0.058	<0.071	<0.060	NS	<0.061	NS	NS	<0.058	NS	<0.058	NS	<0.23	<0.26
Lead EPA Method 6010D / 6020 - reported i	- 00	0.42	100 00 0	140	<b>40.200</b>	140	Q0.210	140	40.004	<b>40.000</b>	<b>40.000</b>	Q0.07 T	<b>40.000</b>	140	40.001	140	140	40.000	140	<b>40.000</b>	NO	Q0.20	<b>40.20</b>
Lead EFA Method 6010D / 6020 - reported i		0700	7400 00 4	450	NO	70.0	0.4		I NO	l No	F4.5	20.7	l No	400	l No	40.0.1	00.4.1	l No	044	l No		NO	I NO
Leau	700	2700	7439-92-1	156	NS	79.6	2.1	9.8	NS	NS	54.5	32.7	NS	122	NS	12.8 J	26.4 J	NS	84.1	NS	2.1	NS	NS
				1									Commis ID 11"	and Data College 1									
	MPCA Tier 2	MPCA												nd Date Collected					·				
Compound/Parameter	Industrial	SLVs	CAS No.	GP-31 (0-1)	GP-31 (1-3)	GP-32 (0-1)	GP-32 (20-22)	GP-33 (0-1)	GP-33 (4-5)	GP-36 (3-5)	GP-38 (3-4)	GP-39 (3-4)	GP-40 (3-4)	GP-41 (3-4)	GP-42 (3-4)	GP-45 (0-1')	GP-45 (11-12')	GP-46 (0-1)	GP-46 (9-10)	GP-47 (0-1)	GP-47 (14-15)	SB-1 (0.5-1.5)	SB-1 (6-6.5)
·	SRVs 2009	2013		12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/13/2019	12/13/2019	6/29/2020	6/29/2020	6/29/2020	6/30/2020	6/30/2020	6/30/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/2/2020	7/2/2020	10/4/2019	10/4/2019
				2001004961	2001004961	2001004962	2001004962	2001004963	2001004963	2001005482	2001005483	2001005484	2001005485	2001005486	2001005487	2001005489	2001005489	2001006860	2001006860	2001005488	2001005488	2001004946	2001004946
1,4-Dioxane (p-Dioxane) EPA Method 826	60B - reported in mg/k	7																					
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	<3.42 UJ-	<3.12 UJ-	<2.72 UJ-	<2.64 UJ-	<2.75 UJ-	<2.78 UJ-	NS	<3.72 J-	NS	<3.54 J-	NS	<2.50	NS	NS
Volatile Organic Compounds (VOCs) EPA	Method 8260B (Modifi	ed List / Detected Con	npounds) - repor	ted in mg/kg																			
1,1,1-Trichloroethane	472	55.7	71-55-6	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	< 0.0354	NS	<0.0250	NS	<0.051
1,1-Dichloroethane	55	.41	75-34-3	NS	<0.068	NS	<0.062	NS	<0.29	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
1,1-Dichloroethene	60	1.4	75-35-4	NS	<0.068	NS	< 0.062	NS	< 0.073	<0.0342	< 0.0312	<0.0272	< 0.0264	< 0.0275	<0.0278	NS	< 0.0372	NS	< 0.0354	NS	<0.0250	NS	<0.051
1,2-Dichloroethane	6	0.0038	107-06-2	NS	<0.068	NS	< 0.062	NS	< 0.073	< 0.0342	< 0.0312	<0.0272	< 0.0264	< 0.0275	<0.0278	NS	< 0.0372	NS	< 0.0354	NS	<0.0250	NS	<0.051
Chloroethane	3000	NE	75-00-3	NS	<0.68	NS	< 0.62	NS	<0.73	<0.171	<0.156	<0.136	< 0.132	<0.137	<0.139	NS	<0.186	NS	<0.177	NS	<0.125	NS	<0.51 J-
Ethylbenzene	200	1.1	100-41-4	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	< 0.0354	NS	<0.0250	NS	<0.051
Tetrachloroethene	131	0.042	127-18-4	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
Toluene	305	2.5	108-88-3	NS	<0.068	NS	<0.062	NS	< 0.073	<0.171	<0.156	<0.136	<0.132	<0.137	<0.139	NS	<0.186	NS	<0.177	NS	<0.125	NS	<0.051
Trichloroethene	46	0.0023	79-01-6	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
Vinyl chloride	2.2	0.0014	75-01-4	NS	<0.068	NS	<0.062	NS	<0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.020
cis-1,2-Dichloroethene	22	0.21	156-59-2	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	< 0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
p-Isopropyltoluene	N/A	N/A	99-87-6	NS	<0.068	NS	<0.062	NS	< 0.073	<0.0342	<0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
trans-1,2-Dichloroethene	33	0.42	156-60-5	NS	<0.068	NS	<0.062	NS	<0.29	< 0.0342	< 0.0312	<0.0272	<0.0264	<0.0275	<0.0278	NS	<0.0372	NS	<0.0354	NS	<0.0250	NS	<0.051
Lead EPA Method 6010D / 6020 - reported i	in mg/kg																						
Lead	700	2700	7439-92-1	164 J+	NS	2.5	NS	81.0 J-	NS	NS	NS	NS	NS	NS	NS	17.8	NS	5.7	NS	5.9	NS	302 J	NS
													Sample ID, LUI a	nd Date Collected									
0 1/0	MPCA Tier 2	MPCA		SB-2 (0.5-1)	SB-2 (6-8)	SB-3 (0.5-1)	SB-3 (6-8)	SB-4 (0-1)	SB-4 (6-8')	SB-5 (0-1)	DUP100419-B	SB-5 (6-8)	SB-6 (0-1)	SB-6 (6-8)	DUP100419-C	SB-7 (0-1)	SB-7 (8-10)	SB-8 (0-1)	SB-8 (5.5-7.5)	SB-8 (25-27)	SB-9 (0-1)	SB-9 (8-10)	SB-9 (30-32)
Compound/Parameter	Industrial SRVs 2009	SLVs 2013	CAS No.	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/7/2019	10/8/2019	12/2/2019	12/2/2019	12/2/2019	12/3/2019	12/3/2019	12/3/2019
	01110 2000	20.0		2001004947	2001004947	2001004948	2001004948	2001004949	2001004949	2001004950		2001004950	2001004951	2001004951		2001004952	2001004952	2001004964	2001004964	2001004964	2001004965	2001004965	2001004965
1,4-Dioxane (p-Dioxane) EPA Method 826	60B - reported in ma/k	g			•																		
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Volatile Organic Compounds (VOCs) EPA	Method 8260B (Modifi			ted in mg/ka																			
1.1.1-Trichloroethane	472	55.7	71-55-6	NS NS	<0.059	NS	<0.058	NS	<0.051	NS	NS	< 0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.143	<0.146	NS	<0.138	<0.163
1,1-Dichloroethane	55	.41	75-34-3	NS	<0.059	NS	<0.058	NS	<0.051	NS	NS	<0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.143	<0.146	NS	<0.138	<0.163
1,1-Dichloroethene	60	1.4	75-35-4	NS	<0.059	NS	<0.058	NS	<0.051	NS	NS	<0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.143	<0.146	NS	<0.138	<0.163
1,2-Dichloroethane		0.0038	107-06-2	NS	<0.059	NS	<0.058	NS	<0.051	NS	NS	<0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.143	<0.146	NS	<0.138	<0.163
	6			NS	<0.59 J-	NS	<0.58 J-	NS	<0.51 J-	NS	NS	<0.59 J-	<0.51 J-	<0.58 J-	<0.58 J-	NS	<0.60	NS	<0.286	<0.292	NS	<0.276	<0.326
Chloroethane			75-00-3					NS	<0.051	NS	NS	<0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.143	<0.146	NS	<0.138	<0.163
Chloroethane Ethylbenzene	3000	NE 1.1	75-00-3 100-41-4	NS	< 0.059	NS	<0.058							<0.058	<0.058	NS							
		NE			<0.059 <0.059	NS NS	<0.058 <0.058	NS	< 0.051	NS	NS	< 0.059	< 0.051	<0.056			< 0.060	NS	< 0.143	< 0.146	NS	<0.138	< 0.163
Ethylbenzene	3000 200	NE 1.1	100-41-4	NS NS		NS			<0.051 <0.051	NS NS		<0.059 <0.059	<0.051	<0.058	<0.058		<0.060	NS NS	<0.143 <0.286				
Ethylbenzene Tetrachloroethene Toluene	3000 200 131 305	NE 1.1 0.042 2.5	100-41-4 127-18-4 108-88-3	NS NS NS	<0.059 <0.059	NS NS	<0.058 <0.058	NS NS	<0.051	NS	NS	<0.059	<0.051	<0.058	<0.058	NS	<0.060	NS	<0.286	<0.292	NS	<0.276	<0.326
Ethylbenzene Tetrachloroethene	3000 200 131	NE 1.1 0.042	100-41-4 127-18-4	NS NS	<0.059	NS NS NS	<0.058	NS			NS NS		<0.051 <b>0.12</b>			NS NS							<0.326 <0.0651
Ethylbenzene Tetrachloroethene Toluene Trichloroethene	3000 200 131 305 46	NE 1.1 0.042 2.5 0.0023	100-41-4 127-18-4 108-88-3 79-01-6	NS NS NS	<0.059 <0.059 <0.059	NS NS	<0.058 <0.058 <0.058	NS NS NS	<0.051 <0.051	NS NS	NS	<0.059 <0.059	<0.051	<0.058 <0.058	<0.058 <0.058	NS	<0.060 <0.060	NS NS	<0.286 <0.0571	<0.292 <0.0585	NS NS	<0.276 <0.0552	<0.326
Ethylbenzene Tetrachloroethene Toluene Trichloroethene Vinyl chloride cis-1,2-Dichloroethene	3000 200 131 305 46 2.2	NE 1.1 0.042 2.5 0.0023 0.0014 0.21	100-41-4 127-18-4 108-88-3 79-01-6 75-01-4 156-59-2	NS NS NS NS NS NS	<0.059 <0.059 <0.059 <0.024 <0.059	NS NS NS NS	<0.058 <0.058 <0.058 <0.023 <0.058	NS NS NS NS	<0.051 <0.051 <0.020 <0.051	NS NS NS NS	NS NS NS	<0.059 <0.059 <0.023 <0.059	<0.051 0.12 <0.021 <0.051	<0.058 <0.058 <0.023 <0.058	<0.058 <0.058 <0.023 <0.058	NS NS NS	<0.060 <0.060 <0.024 <0.060	NS NS NS NS	<0.286 <0.0571 <0.143 <0.143	<0.292 <0.0585 <0.146 <0.146	NS NS NS	<0.276 <0.0552 <0.138 <0.138	<0.326 <0.0651 <0.163 <0.163
Ethylbenzene Tetrachloroethene Tolune Trichloroethene Vinyl chloride	3000 200 131 305 46 2.2 22 N/A	NE 1.1 0.042 2.5 0.0023 0.0014 0.21 N/A	100-41-4 127-18-4 108-88-3 79-01-6 75-01-4 156-59-2 99-87-6	NS NS NS NS NS NS NS NS NS	<0.059 <0.059 <0.059 <0.024 <0.059 <0.059	NS NS NS NS NS NS	<0.058 <0.058 <0.058 <0.023 <0.058 <0.058	NS NS NS NS NS NS	<0.051 <0.051 <0.020 <0.051 <0.051	NS NS NS NS	NS NS NS NS	<0.059 <0.059 <0.023 <0.059 <0.059	<0.051 0.12 <0.021 <0.051 <0.051	<0.058 <0.058 <0.023 <0.058 <0.058	<0.058 <0.058 <0.023 <0.058 <0.058	NS NS NS NS	<0.060 <0.060 <0.024 <0.060 <0.060	NS NS NS NS	<0.286 <0.0571 <0.143 <0.143 <0.286	<0.292 <0.0585 <0.146 <0.146 <0.292	NS NS NS NS	<0.276 <0.0552 <0.138 <0.138 <0.276	<0.326 <0.0651 <0.163 <0.163 <0.326
Ethylbenzene Tetrachloroethene Toluene Trichloroethene Vinyl chloride cis-1,2-Dichloroethene p-Isopropyltoluene trans-1,2-Dichloroethene	3000 200 131 305 46 2.2 22 N/A 33	NE 1.1 0.042 2.5 0.0023 0.0014 0.21	100-41-4 127-18-4 108-88-3 79-01-6 75-01-4 156-59-2	NS NS NS NS NS NS	<0.059 <0.059 <0.059 <0.024 <0.059	NS NS NS NS	<0.058 <0.058 <0.058 <0.023 <0.058	NS NS NS NS	<0.051 <0.051 <0.020 <0.051	NS NS NS NS	NS NS NS	<0.059 <0.059 <0.023 <0.059	<0.051 0.12 <0.021 <0.051	<0.058 <0.058 <0.023 <0.058	<0.058 <0.058 <0.023 <0.058	NS NS NS	<0.060 <0.060 <0.024 <0.060	NS NS NS NS	<0.286 <0.0571 <0.143 <0.143	<0.292 <0.0585 <0.146 <0.146	NS NS NS	<0.276 <0.0552 <0.138 <0.138	<0.326 <0.0651 <0.163 <0.163
Ethylbenzene Tetrachloroethene Toluene Trichloroethene Vinyl chloride cis-1,2-Dichloroethene p-Isopropyltoluene trans-1,2-Dichloroethene Lead EPA Method 6010D / 6020 - reported i	3000 200 131 305 46 2.2 22 N/A 33 in mg/kg	NE 1.1 0.042 2.5 0.0023 0.0014 0.21 N/A 0.42	100-41-4 127-18-4 108-88-3 79-01-6 75-01-4 156-59-2 99-87-6 156-60-5	NS	<0.059 <0.059 <0.059 <0.024 <0.059 <0.059 <0.059 <0.059	NS NS NS NS NS NS NS NS	<0.058 <0.058 <0.058 <0.023 <0.058 <0.058 <0.058 <0.058 <0.058	NS NS NS NS NS NS NS NS NS	<0.051 <0.051 <0.020 <0.051 <0.051 <0.051	NS NS NS NS NS NS NS NS	NS NS NS NS NS NS NS	<0.059 <0.059 <0.023 <0.059 <0.059 <0.059	<0.051  0.12  <0.021  <0.051  <0.051  0.11	<0.058 <0.058 <0.023 <0.058 <0.058 <0.058	<0.058 <0.058 <0.023 <0.058 <0.058 <0.058	NS NS NS NS NS	<0.060 <0.060 <0.024 <0.060 <0.060 <0.060	NS NS NS NS NS	<0.286 <0.0571 <0.143 <0.143 <0.286 <0.286	<0.292 <0.0585 <0.146 <0.146 <0.292 <0.292	NS NS NS NS NS NS NS	<0.276 <0.0552 <0.138 <0.138 <0.276 <0.276	<0.326 <0.0651 <0.163 <0.163 <0.326 <0.326
Ethylbenzene Tetrachloroethene Toluene Trichloroethene Vinyl chloride cis-1,2-Dichloroethene p-lsopropyltoluene trans-1,2-Dichloroethene	3000 200 131 305 46 2.2 22 N/A 33	NE 1.1 0.042 2.5 0.0023 0.0014 0.21 N/A	100-41-4 127-18-4 108-88-3 79-01-6 75-01-4 156-59-2 99-87-6	NS NS NS NS NS NS NS NS NS	<0.059 <0.059 <0.059 <0.024 <0.059 <0.059	NS NS NS NS NS NS	<0.058 <0.058 <0.058 <0.023 <0.058 <0.058	NS NS NS NS NS NS	<0.051 <0.051 <0.020 <0.051 <0.051	NS NS NS NS	NS NS NS NS	<0.059 <0.059 <0.023 <0.059 <0.059	<0.051 0.12 <0.021 <0.051 <0.051	<0.058 <0.058 <0.023 <0.058 <0.058	<0.058 <0.058 <0.023 <0.058 <0.058	NS NS NS NS	<0.060 <0.060 <0.024 <0.060 <0.060	NS NS NS NS	<0.286 <0.0571 <0.143 <0.143 <0.286	<0.292 <0.0585 <0.146 <0.146 <0.292	NS NS NS NS	<0.276 <0.0552 <0.138 <0.138 <0.276	<0.326 <0.0651 <0.163 <0.163 <0.326

## NE = Not Established

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### Industrial SRV exceedance SLV exceedance

mg/kg = milligrams per kilogram (parts per million) MPCA = Minnesota Pollution Control Agency

SRV = Soil Reference Value SLV = Soil Leaching Value

- UJ = Samples marked with this flag were non-detect but contained a representative quality control sample with a relative percent difference (RPD)outside the quality control range, or percent recovery of the analyte
- was below the QC limits; The associated parent sample is therefore flagged as estimated even though the results were below the laboratory reporting limits. J = Analyte was positively identified in the sample, but the concentration is an estimated (approximate) value; Samples marked with this flag were designated as estimated based on
- an associated MS/MSD QC sample that contained lead recovery outside of the QC limits; As a result, the parent sample is considered estimated. This flag was also added to samples where the serial dilution exceeded a percentage with the result greater than 50x the MDL; This value is considered to be estimated also.
- J+ = Analyte was positively identified in the sample, but the concentration is believed to be estimated with a potential positive bias; Samples with this flag had an associated MS/MS sample where the RPD was outside the QC limits, resulting in a parent sample detection that is considered estimated with a potential positive bias.

												Sample ID. LUI a	nd Date Collected								
	MPCA Tier 2	MPCA		SB-10 (5)	SB-10 (8-10)	SB-11 (0-1)	SB-11 (8-10)	SB-11 (15-17)	SB-12 (0-1)	SB-12 (8-10)	SB-13 (0-1)	SB-13 (11-13)	SB-13 (16-18)	SB-14 (0-1)	SB-14 (10-12.5)	SB-15 (0-1)	SB-15 (12.5-15)	SB-16 (0-1)	SB-16 (12.5-15)	SB-17 (0-1)	SB-17 (11-13)
Compound/Parameter	Industrial SRVs 2009	SLVs 2013	CAS No.	12/3/2019	12/3/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/6/2019	12/6/2019	12/9/2019	12/9/2019	12/10/2019	12/10/2019
	0.1102000	20.0		2001004966	2001004966	2001005475	2001005475	2001005475	2001005476	2001005476	2001005477	2001005477	2001005477	2001005478	2001005478	2001005479	2001005479	2001005480	2001005480	2001005481	2001005481
1,4-Dioxane (p-Dioxane) EPA Method 826	60B - reported in mg/kg	g																			
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Volatile Organic Compounds (VOCs) EPA	Method 8260B (Modifie	ed List / Detected Com	pounds) - repor	ted in mg/kg																	
1,1,1-Trichloroethane	472	55.7	71-55-6	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
1,1-Dichloroethane	55	.41	75-34-3	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
1,1-Dichloroethene	60	1.4	75-35-4	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
1,2-Dichloroethane	6	0.0038	107-06-2	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	< 0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Chloroethane	3000	NE	75-00-3	NS	<0.299	NS	< 0.59	<0.59	NS	<0.60	NS	< 0.56	<0.66	NS	<0.61	NS	<0.59	NS	<0.61	NS	< 0.55
Ethylbenzene	200	1.1	100-41-4	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Tetrachloroethene	131	0.042	127-18-4	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	< 0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Toluene	305	2.5	108-88-3	NS	<0.299	NS	< 0.059	< 0.059	NS	<0.060	NS	< 0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Trichloroethene	46	0.0023	79-01-6	NS	<0.0598	NS	< 0.059	< 0.059	NS	<0.060	NS	< 0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Vinyl chloride	2.2	0.0014	75-01-4	NS	<0.149	NS	<0.059 J-	<0.059 J-	NS	<0.060 J-	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
cis-1,2-Dichloroethene	22	0.21	156-59-2	NS	<0.149	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	<0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
p-Isopropyltoluene	N/A	N/A	99-87-6	NS	<0.299	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	<0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
trans-1,2-Dichloroethene	33	0.42	156-60-5	NS	<0.299	NS	< 0.059	< 0.059	NS	<0.060	NS	<0.056	< 0.066	NS	<0.061	NS	< 0.059	NS	<0.061	NS	< 0.055
Lead EPA Method 6010D / 6020 - reported	in mg/kg																				
Lead	700	2700	7439-92-1	61.1	NS	1060	NS	NS	8.9	NS	258	NS	NS	23.1	NS	3.9	NS	33.5	NS	70.4	NS

						Sample ID, LUI ar	nd Date Collected		
	MPCA Tier 2	MPCA		SB-18 (2-4)	SB-19 (8-10)	SB-20 (1-3)	SB-21 (3-5)	SB-22 (2-4)	SB-23 (2-4)
Compound/Parameter	Industrial	SLVs	CAS No.	` ,	, ,		, ,	` ,	, ,
	SRVs 2009	2013		7/7/2020	7/7/2020	7/7/2020	7/7/2020	7/7/2020	7/7/2020
				2001006861	2001006862	2001006863	2001006864	2001006865	2001006866
1,4-Dioxane (p-Dioxane) EPA Method 826	0B - reported in mg/kg	9							
1,4-Dioxane (p-Dioxane)	250	.0021	123-91-1	<10.3	<10.6	<10.2	<11.5	<10.4	<10.9
Volatile Organic Compounds (VOCs) EPA I	Method 8260B (Modifie	ed List / Detected Com	pounds) - report	ed in mg/kg					
1,1,1-Trichloroethane	472	55.7	71-55-6	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
1,1-Dichloroethane	55	.41	75-34-3	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
1,1-Dichloroethene	60	1.4	75-35-4	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
1,2-Dichloroethane	6	0.0038	107-06-2	< 0.052	< 0.053	< 0.051	< 0.057	< 0.052	< 0.054
Chloroethane	3000	NE	75-00-3	<0.52	< 0.53	<0.51	<0.57	<0.52	<0.54
Ethylbenzene	200	1.1	100-41-4	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
Tetrachloroethene	131	0.042	127-18-4	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
Toluene	305	2.5	108-88-3	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
Trichloroethene	46	0.0023	79-01-6	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
Vinyl chloride	2.2	0.0014	75-01-4	<0.021	<0.021	<0.020	< 0.023	<0.021	<0.022
cis-1,2-Dichloroethene	22	0.21	156-59-2	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
p-Isopropyltoluene	N/A	N/A	99-87-6	< 0.052	< 0.053	<0.051	< 0.057	< 0.052	< 0.054
trans-1,2-Dichloroethene	33	0.42	156-60-5	<0.052	<0.053	<0.051	<0.057	<0.052	<0.054
Lead EPA Method 6010D / 6020 - reported i	n mg/kg								
Lead	700	2700	7439-92-1	NS	NS	NS	NS	NS	NS

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- sample where the RPD was outside the QC limits, resulting in a parent sample detection that is considered estimated with a potential positive bias.

											Futerie	- Commis ID Date	Callaged 8 MDC	N 1 1 11 #								
											Exterio	r Sample ID, Date	Collected & MPC	A LUI #								
		MDH HRL/HBV and	GP-1 (7-11')	GP-1 (16-18')	GP-1 (23-25')	GP-2 (7-10)	GP-2 (15-17)	GP-2 (22-24)	GP-3 (8-11)	GP-3 (16-18)	GP-3 (23-25)	GP-4 (5-7)	GP-4 (12-14)	GP-4 (19-21)	GP-4 (26-28)	GP-6 (7-10)	GP-6 (15-17)	GP-6 (22-24)	GP-7 (6-9)	061819-A	GP-7 (14-16)	GP-7 (21-23)
Compound/Parameter	CAS No.	(EPA MCL)	06/14/2019	06/14/2019	06/14/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/17/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	6/18/2019	06/18/2019	06/18/2019
			2001004837	2001004837	2001004837	2001004838	2001004838	2001004838	2001004839	2001004839	2001004839	2001004840	2001004840	2001004840	2001004840	2001004842	2001004842	2001004842	2001004843	Blind Dup GP-7 (6-9)	2001004843	2001004843
Volatile Organic Compounds (VO	Cs) - EPA Metho	od 8260B (Detected Co	mpounds) - repor	ted in ug/L																		
1,1-Dichloroethane	75-34-3	80	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00
1,1-Dichloroethene	75-35-4	200 (7)	<1.00 UJ-	<1.00	<1.00	<2.00	<2.00	<2.00 UJ-	<2.00	<2.00	<2.00 UJ-	<2.00	<2.00	<2.00	<2.00	<2.00 UJ-/UJ-	<2.00	<2.00	<2.00	<2.00	<2.00 UJ-	<2.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00
Acetone	67-64-1	4000 / 3000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	<1.00 UJ-	<1.00	<1.00	<4.00	<4.00	<4.00 UJ-	<4.00	<4.00	<4.00 UJ-	<4.00	<4.00	<4.00	<4.00	<4.00 UJ-	10	<4.00	<4.00	<4.00	<4.00 UJ-	<4.00
Ethylbenzene	100-41-4	50 / 40 (700)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	108-88-3	200 / 70 (1000)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	0.4 (5)	<1.00 UJ-	3.08	<1.00	<1.00	4.47	<1.00 UJ-	<1.00	1.09	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	5.53 J-/J-	3.60	<1.00	<1.00	<1.00	1.30 J-	<1.00
Vinyl chloride	75-01-4	0.2 (2)	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	2.45 J-	<1.00
p-Isopropyltoluene	99-87-6	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-/UJ-	<1.00	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00
1,4-Dioxane Method EPA 8270D b	y SIM																					
1,4-Dioxane (SIM)	123-91-1	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Lead (Pb) Method EPA	6010D / 6020B								-	•									-			
Lead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

											Sample ID,	Date Collected &	MPCA LUI#								
Compound/Parameter	CAS No.	MDH HRL/HBV and	GP-8 (5-7)	GP-8 (12-14)	GP-8 (19-21)	GP-9 (6-8)	GP-9 (13-15)	GP-9 (20-22)	061819-B	GP-10 (0-5)	GP-10 (10-12)	GP-10 (17-19)	HA-1	GP-11 (5-10)	GP-11 (15-17)	GP-12 (7-10)	GP-12 (15-17)	GP-12 (22-24)	GP-13 (7-10)	GP-13 (15-17)	GP-13 (22-24)
Compound/Parameter	CAS No.	(EPA MCL)	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/18/2019	06/19/2019	06/19/2019	06/19/2019	06/19/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019	06/21/2019
			2001004844	2001004844	2001004844	2001004845	2001004845	2001004845	Blind Dup GP-9 (20-22)	2001004846	2001004846	2001004846	2001004847	2001004848	2001004848	2001004849	2001004849	2001004849	2001004850	2001004850	2001004850
Volatile Organic Compounds (V	OCs) - EPA Meth	od 8260B (Detected Co	mpounds) - repo	rted in ug/L																	
1,1-Dichloroethane	75-34-3	80	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00	3.87 J-	1.31 J-	15.7 J-	28.4 J-	<1.00 UJ-	15.1 J-	22.3 J-	2.35 J-
1,1-Dichloroethene	75-35-4	200 (7)	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00	<2.00	<2.00	<2.00 UJ-	<2.00 UJ-	<2.00	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-
1,2-Dichloroethane	107-06-2	1 (5)	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-
Acetone	67-64-1	4000 / 3000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00	<4.00	<4.00	<4.00 UJ-	<4.00 UJ-	<4.00	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	4.91 J-	6.58 J-	<4.00 UJ-
Ethylbenzene	100-41-4	50 / 40 (700)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	108-88-3	200 / 70 (1000)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	0.4 (5)	1.08 J-	1.42 J-	<1.00 UJ-	<1.00 UJ-	4.89 J-	<1.00	<1.00	23.9	5.06 J-	<1.00 UJ-	<1.00	<1.00 UJ-	1.31 J-	<1.00 UJ-	<1.00 UJ-	1.05 J-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-
Vinyl chloride	75-01-4	0.2 (2)	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00 UJ-	1.27 J-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-
p-Isopropyltoluene	99-87-6	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00	1.91	<1.00 UJ-	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-
1,4-Dioxane Method EPA 8270D	by SIM																				
1,4-Dioxane (SIM)	123-91-1	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Lead (Pb) Method EP	A 6010D / 6020B																				
_ead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit <1.00

HRL or HBV exceedance

= lab reporting limit greater than regulatory risk-screening value

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable

ug/L - micrograms per liter (parts per billion)

NE = Not Established NS = Not Sampled

15 ug/L is the EPA action level for lead (at Tap)

- The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the UJ- = possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- -/- = Samples with multiple qualifiers separated by a "/" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag; Non-detected value resulting from quantitation that is believed to be biased very low.
- Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected J-= value therefore represents an estimated value with a potentially low bias.

											Sample ID,	Date Collected &	MPCA LUI#								
		MDH HRL/HBV and	GP-14 (9-14)	GP-14 (19-21)	GP-14 (26-28)	GP-15 (8-13)	GP-15 (18-20)	GP-15 (25-27)	GP-15 (32-34)	GP-16 (10-15)	GP-16 (20-22)	GP-16 (27-29)	GP-16 (34-36)	062619-A	GP-17 (7-12)	GP-17 (17-19)	GP-17 (24-26)	GP-18 (10-15)	062619-B	GP-18 (20-22)	GP-18 (34-38)
Compound/Parameter	CAS No.	(EPA MCL)	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/24/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019	06/26/2019
			2001004851	2001004851	2001004851	2001004852	2001004852	2001004852	2001004852	2001004853	2001004853	2001004853	2001004853	Blind Dup GP-16 (34-36')	2001004854	2001004854	2001004854	2001004855	Blind Dup GP-18 (10-15')	2001004855	2001004855
/olatile Organic Compounds (VC	Cs) - EPA Metho	d 8260B (Detected Co	mpounds) - repo	orted in ug/L	<u> </u>	•	<u> </u>	<u> </u>	(0.00)		<u> </u>	<u> </u>		(10.10)	<u> </u>						
1,1-Dichloroethane	75-34-3	80	31.3 J-	17.3	<1.00	<1.00 UJ-	1.75	7.52 J-	<1.00	<1.00 UJ-	1.28	<10.0 UJ-	<1.00 UJ-	<1.00 UJ-	<10.0 UJ	4.32	1.06	1.33 J-	1.41 J-	<1.00 UJ-	<1.00 UJ
1,1-Dichloroethene	75-35-4	200 (7)	<20.0 UJ-	<2.00	<2.00	<2.00 UJ-	<2.00	<2.00 UJ-	<2.00	<2.00 UJ-	<2.00	<20.0 UJ-	<2.00 UJ-	<2.00 UJ-	<20.0 UJ	<2.00	<2.00	<2.00 UJ-	<2.00 UJ-	<2.00 UJ-	<2.00 UJ
1,2-Dichloroethane	107-06-2	1 (5)	<10.0 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00	<10.0 UJ-	<1.00 UJ-	<1.00 UJ-	<10.0 UJ	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ
Acetone	67-64-1	4000 / 3000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	<40.0 UJ-	<4.00	<4.00	<4.00 UJ-	<4.00	<4.00 UJ-	<4.00	<4.00 UJ-	<4.00	<40.0 UJ-	<4.00 UJ-	<4.00 UJ-	<40.0 UJ	<4.00	<4.00	<4.00 UJ-	<4.00 UJ-	<4.00 UJ-	<4.00 UJ
Ethylbenzene	100-41-4	50 / 40 (700)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	108-88-3	200 / 70 (1000)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	0.4 (5)	11.7 J-	<1.00	<1.00	2.44 J-	4.03	<1.00 UJ-	8.03	3.25 J-	5.45	<10.0 UJ-	10.7 J-	9.34 J-	<10.0 UJ	4.40	1.08	<1.00 UJ-	<1.00 UJ-	1.58 J-	<1.00 UJ
Vinyl chloride	75-01-4	0.2 (2)	20.1 J-	<1.00	<1.00	4.27 J-	7.24	<1.00 UJ-	<1.00	1.21 J-	5.53	<10.0 UJ-	<1.00 UJ-	<1.00 UJ-	<10.0 UJ	<1.00	<1.00	11.1 J-	12.2 J-	<1.00 UJ-	<1.00 UJ
cis-1,2-Dichloroethene	156-59-2	6 (70)	<10.0 UJ-	<1.00	<1.00	1.51 J-	1.59	<1.00 UJ-	<1.00	<1.00 UJ-	2.24	<10.0 UJ-	<1.00 UJ-	<1.00 UJ-	<10.0 UJ	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ
p-Isopropyltoluene	99-87-6	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<10.0 UJ-	<1.00	<1.00	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00	<1.00 UJ-	<1.00	<10.0 UJ-	3.01 J-	2.11 J-	<10.0 UJ	<1.00	<1.00	<1.00 UJ-	<1.00 UJ-	<1.00 UJ-	<1.00 UJ
,4-Dioxane Method EPA 8270D I	by SIM				•					•		•					•	•	•	•	
1,4-Dioxane (SIM)	123-91-1	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Lead (Pb) Method EPA	6010D / 6020B																				
_ead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

												Sa	mple ID, Date Col	lected & MPCA L	UI#									
Compound/Parameter	CAS No.	MDH HRL/HBV and	GP-19 (4-7)	GP-19 (12-14)	DUP082819	GP-19 (19-21)	GP-20 6-10'	GP-20 15-17'	GP-20 22-24'	GP-20 29-31'	GP-20 34-36'	GP-21 9-12'	GP-21 17-19'	GP-21 24-26'	GP-21 31-34'	GP-22 (10-14)	GP-22 (19-21)	DUP083019	GP-22 (24-28)	GP-23 (6-10)	GP-23 (15-17)	GP-23 (22-24)	GP-23 (29-31)	GP-23 (36-38)
Compound/Farameter	CAS No.	(EPA MCL)	8/28/2019	8/28/2019	8/28/2019	8/28/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/29/2019	8/30/2019	8/30/2019	8/30/2019	8/30/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019
			2001004856	2001004856	Blind Dup GP-19 (12-14')	2001004856	2001004857	2001004857	2001004857	2001004857	2001004857	2001004858	2001004858	2001004858	2001004858	2001004859	2001004859	Blind Dup GP- 22(19-12)	2001004859	2001004867	2001004867	2001004867	2001004867	2001004867
Volatile Organic Compounds (VO	Cs) - EPA Meth	od 8260B (Detected Co	mpounds) - repo	rted in ug/L																				
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethene	75-35-4	200 (7)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	75-00-3	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00	<5.00	<5.00	<5.00	<5.00
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	79-01-6	0.4 (5)	<0.40	<0.40	<0.40	0.50	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<1.00	<1.00	<1.00	<1.00	<1.00
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.00	<1.00	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
p-Isopropyltoluene	99-87-6	NE	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
1,4-Dioxane Method EPA 8270D b	y SIM																							
1,4-Dioxane (SIM)	123-91-1	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.25 J-	<0.42 J-	<0.29 J-	<0.36 J-	1.4 J-
Dissolved Lead (Pb) Method EPA	6010D / 6020B																							
Lead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit <1.00

HRL or HBV exceedance

= lab reporting limit greater than regulatory risk-screening value

MDH = Minnesota Department of Health

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable

ug/L - micrograms per liter (parts per billion)

NE = Not Established NS = Not Sampled

15 ug/L is the EPA action level for lead (at Tap)

- The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the UJ- = possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- -/- = Samples with multiple qualifiers separated by a "" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag; Non-detected value resulting from quantitation that is believed to be biased very low.
- J-= Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected value therefore represents an estimated value with a potentially low bias.

											Sa	mple ID, Date Col	llected & MPCA L	UI#								
		MDH HRL/HBV and	GP-24 (8-12)	GP-24 (17-19)	Dup120419-A	GP-24 (24-26)	GP-24 (31-33)	GP-24 (38-40)	GP-24 (45-47)	GP-25 (7-11)	GP-25 (16-18)	GP-25 (23-25)	GP-25 (30-32)	GP-25 (37-39)	GP-25 (44-46)	GP-26 (6-10)	GP-26 (15-17)	DUP120519-A	GP-26 (22-24)	GP-26 (29-31)	GP-26 (36-38)	GP-26 (41-43)
Compound/Parameter	CAS No.	(EPA MCL)	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019
			2001004868	2001004868	Blind Dup GP-24 (17-19)	2001004868	2001004868	2001004868	2001004868	2001004869	2001004869	2001004869	2001004869	2001004869	2001004869	2001004870	2001004870	Blind Dup GP-26 (15-17)	2001004870	2001004870	2001004870	2001004870
/olatile Organic Compounds (VO	Cs) - EPA Meth	od 8260B (Detected Co	ompounds) - repo	rted in ug/L																		
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<4.0	<4.0	<4.0	<4.0	<4.0
1,1-Dichloroethene	75-35-4	200 (7)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	33.3
Chloroethane	75-00-3	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18.4	<1.0	<1.0	<1.0	<1.0	<1.0	1.9
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	101	<1.0	<1.0	1.4	<1.0	<1.0	15.0
Trichloroethene	79-01-6	0.4 (5)	< 0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.53	2.4	2.5	<0.40	<0.40	<0.40	<0.40
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	357	1.7	2.7	2.8	1.5	2.5	40.6
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<4.0	<4.0	<4.0	<4.0	<4.0
,4-Dioxane Method EPA 8270D b	y SIM																					
1,4-Dioxane (SIM)	123-91-1	1	<0.36 J-	<0.23 J-	<0.25 J-	<0.23 J-	0.24 J-	2.4 J-	<0.33 J-	<0.31 J-	<0.23 J-	<0.29 J-	<0.25 J-	<0.31 J-	<0.26 J-	<0.38 J-	<0.25 J-	<0.25 J-	2.2 J-	0.38 J-	2.3 J-	7.4 J-
Dissolved Lead (Pb) Method EPA	6010D / 6020B																					
_ead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

											Sa	mple ID, Date Col	lected & MPCA I	111 #								
		MDH HRL/HBV and	GP-27 (8-12)	GP-27 (17-19)	GP-27 (24-26)	GP-27 (31-33)	GP-27 (38-40)	GP-27 (44-46)	GP-28 (2-6)	GP-28 (11-13)	GP-28 (18-20)	GP-28 (25-27)	GP-28 (30-34)	GP-28 (39-41)	DUP 120619-B	GP-28 (46-48)	GP-29 (2-6)	GP-29 (11-13)	GP-29 (18-20)	GP-29 (25-27)	GP-29 (32-34)	GP-29 (38-41)
Compound/Parameter	CAS No.	(EPA MCL)	12/9/2019	12/9/2019	12/9/2019	12/9/2019	12/9/2019	12/9/2019	12/6/2019	12/6/2019	12/6/2019	12/6/2019	12/6/2019	12/6/2019	12/6/2019	12/6/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
			2001004871	2001004871	2001004871	2001004871	2001004871	2001004871	2001004872	2001004872	2001004872	2001004872	2001004872	2001004872	Blind Dup GP-28 (39-41')	2001004872	2001004873	2001004873	2001004873	2001004873	2001004873	2001004873
Volatile Organic Compounds (VO	Cs) - EPA Meth	od 8260B (Detected Co	mpounds) - repo	rted in ug/L																		
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<4.0	<1.0	<1.0	2.5	3.8	9.9	<1.0
1,1-Dichloroethene	75-35-4	200 (7)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Chloroethane	75-00-3	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	79-01-6	0.4 (5)	<0.40	1.3	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	2.8	3.1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.83	<0.20
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dioxane Method EPA 8270D b	y SIM																					
1,4-Dioxane (SIM)	123-91-1	1	1.4 R/J-	<0.25	<0.25	0.64	5.8	0.81	<0.25 J-	<0.25 J-	<0.25	<0.25 J-	0.75 J-	1.1 J-	0.89 UB	2.7 J-	0.25 J-	0.26 J-	2.3 J-	1.6 J-	1.3 J-	4.2
Dissolved Lead (Pb) Method EPA	6010D / 6020B																					
Lead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit <1.00 = lab reporting limit greater than regulatory risk-screening value

HRL or HBV exceedance

MDH = Minnesota Department of Health

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable ug/L - micrograms per liter (parts per billion)

NE = Not Established

NS = Not Sampled 15 ug/L is the EPA action level for lead (at Tap)

- The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- Samples with multiple qualifiers separated by a "/" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original -/- = estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag: Non-detected value resulting from quantitation that is believed to be biased very low.
- Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected J-= value therefore represents an estimated value with a potentially low bias.

										Sample ID,	Date Collected &	MPCA LUI#							
		MDH HRL/HBV and	GP-30 (1-3)	GP-30 (8-10)	GP-30 (15-17)	GP-30 (29-31)	GP-30 (36-38)	GP-31 (2-4)	GP-31 (9-11)	DUP121219	GP-31 (16-18)	GP-32 (1-3)	GP-32 (8-10)	GP-32 (15-17)	GP-32 (21-24)	GP-33 (6-10)	GP-33 (15-17)	GP-33 (21-24)	GP-33 (29-31)
Compound/Parameter	CAS No.	(EPA MCL)	12/11/2019	12/11/2019	12/11/2019	12/11/2019	12/11/2019	12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/12/2019	12/13/2019	12/13/2019	12/13/2019	12/13/2019
			2001004874	2001004874	2001004874	2001004874	2001004874	2001004875	2001004875	Blind Dup GP-31 (9-11)	2001004875	2001004876	2001004876	2001004876	2001004876	2001004877	2001004877	2001004877	2001004877
Volatile Organic Compounds (VC	Cs) - EPA Metho	od 8260B (Detected Co	mpounds) - repor	ted in ug/L															
1,1-Dichloroethane	75-34-3	80	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	75-35-4	200 (7)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<20.0	<20.0	<20.0
Chloroethane	75-00-3	NE	<1.0	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Trichloroethene	79-01-6	0.4 (5)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	16.4	4.4	<0.40	<0.40
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
1,4-Dioxane Method EPA 8270D I	y SIM																		
1,4-Dioxane (SIM)	123-91-1	1	1.3 J-	12.4 J-	1.9 J-	5.7 J-	10.1 J-	0.83 J-	1.0 J-	1.2 J-	1.1	1.1 J-	0.98	0.75 J-	2.2 J-	0.56 J-	<0.25	1.2 J-	1.2
Dissolved Lead (Pb) Method EPA	6010D / 6020B																		
_ead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

											Sample ID.	Date Collected &	MPCA LUI#								
		MDH HRL/HBV and	SB-1 (4-9)	SB-2 (5-10)	SB-3 (6-11)	SB-4 (6-11)	DUP 100419-A	SB-5 (6-11)	SB-6 (6-11)	SB-7 (6-11)	SB-8 (7-10)	SB-8 (15-17)	DUP120219	SB-8 (22-24)	SB-9 (11-14)	SB-9 (16-18)	SB-9 (23-25)	SB-10 (9-12)	SB-10 (17-19)	SB-10 (23-25)	DUP120319
Compound/Parameter	CAS No.	(EPA MCL)	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/14/2019	10/4/2019	10/4/2019	10/7/2019	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019	12/3/2019
			2001004860	2001004861	2001004862	2001004863	Blind Dup SB-4	2001004864	2001004865	2001004866	2001004878	2001004878	Blind Dup SB-8 (15-17)	2001004878	2001004879	2001004879	2001004879	2001004880	2001004880	2001004880	Blind Dup SB-10 (23-25)
/olatile Organic Compounds (VC	DCs) - EPA Meth	od 8260B (Detected Co	mpounds) - repo	rted in ug/L																	
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.2	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	126	5.85	<1.00	3.98
1,1-Dichloroethene	75-35-4	200 (7)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.01	<1.00	<1.00	<1.00
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Chloroethane	75-00-3	NE	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	156	<5.00	<5.00	<5.00
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	79-01-6	0.4 (5)	29.9	68.0	50.1	79.2	83.4	74.7	37.8	2.6 UB	3.35	<1.00	<1.00	<1.00	12.3	<1.00	<1.00	<1.00	1.17	<1.00	<1.00
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	4.4 J-	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	21.8	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	2.1	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.14	<1.00	<1.00
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	3.0	1.7	1.8	2.4	2.6	14.9	51.9	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
,4-Dioxane Method EPA 8270D	by SIM																				
1,4-Dioxane (SIM)	123-91-1	1	<0.25 J-	0.30	<0.24 J-	<0.25	<0.25	<0.25	<0.25	0.32	<0.33 J-	<0.38 J-	<0.36 J-	<0.31 J-	<0.42 J-	<0.23 J-	<0.23 J-	4.5 J-	0.47 J-	<0.23 J-	<0.23 J-
Dissolved Lead (Pb) Method EPA	A 6010D / 6020B																				
_ead	7439-92-1	15	1.8	0.24	0.42	0.57 J	<0.10 J	2.9	3.5	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

### Notes:

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit

<1.00 = lab reporting limit greater than regulatory risk-screening value

HRL or HBV exceedance

MDH = Minnesota Department of Health

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable

ug/L - micrograms per liter (parts per billion)
NE = Not Established

NS = Not Sampled

15 ug/L is the EPA action level for lead (at Tap)

- UJ- = The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- -/- = Samples with multiple qualifiers separated by a "/" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag; Non-detected value resulting from quantitation that is believed to be biased very low.
- Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected value therefore represents an estimated value with a potentially low bias.

											Sa	mple ID, Date Col	lected & MPCA L	UI#								
		MDH HRL/HBV and	SB-11 (10-12)	SB-11 (17-19)	SB-11 (24-26)	SB-12 (10-13)	SB-12 (18-20)	SB-12 (21-24)	SB-13 (10-13)	SB-13 (18-20)	SB-13 (34-36)	SB-14 (10-13)	SB-15 (8-11)	SB-15 (16-18)	SB-15 (23-25)	SB-16 (10-13)	SB-16 (18-20)	SB-16 (25-27)	SB-17-(7-13)	GP-34 (47-50)	GP-34 (75-78)	GP-34 (97-100)
Compound/Parameter	CAS No.	(EPA MCL)	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/5/2019	12/5/2019	12/5/2019	12/5/2019	12/6/2019	12/6/2019	12/6/2019	12/9/2019	12/9/2019	12/9/2019	12/10/2019	6/23/2020	6/24/2020	6/24/2020
			2001004881	2001004881	2001004881	2001004882	2001004882	2001004882	2001004883	2001004883	2001004883	2001004884	2001004885	2001004885	2001004885	2001004886	2001004886	2001004886	2001004887	2001004888	2001004888	2001004888
Volatile Organic Compounds (VOC	Cs) - EPA Metho	od 8260B (Detected Co	mpounds) - repor	ted in ug/L																		
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	5.5	<1.0	2.2	<2.0	<1.00	<1.00	<2.00
1,1-Dichloroethene	75-35-4	200 (7)	<4.0	<4.0	<8.0	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<40.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	26.4	<40.0	<50.0	<50.0	<100
Chloroethane	75-00-3	NE	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<5.00	<5.00	<10.0
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
Trichloroethene	79-01-6	0.4 (5)	6.6	5.9	<0.80	<0.40	4.1	<0.40	2.8	0.42	<0.40	1.6	189	20.8	4.1	2.7	<0.40	<0.40	<0.80	<1.00	<1.00	<2.00
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.71	<0.20	<0.20	<0.40	<1.00	<1.00	<2.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	3.1	<1.0	1.2	<2.0	<1.00	<1.00	<2.00
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.2	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.00	<1.00	<2.00
1,4-Dioxane Method EPA 8270D by	y SIM																					
1,4-Dioxane (SIM)	123-91-1	1	0.48 J-	0.44 J-	<0.42	<0.26 J-	<0.25 J-	<0.26 J-	<0.42	<0.29 J-	2.0 J-	<0.29	<0.31 J-	<0.31 J-	<0.29 J-	0.41 J-	0.32 J-	0.27 J-	<0.31 J-	0.69 J-	0.67 J-	28.5 J-
Dissolved Lead (Pb) Method EPA	6010D / 6020B																					
Lead	7439-92-1	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	<10.0	<10.0

											Sample ID.	Date Collected &	MPCA LUI#								
		MDH HRL/HBV and	GP-35 (14-17)	GP-35 (47-50)	GP-35 (68-72)	GP-35 (88-90)	GP-36 (8-10)	GP-36 (13-17)	GP-36 (24-26)	GP-36 (38-40)	Dup 063020	GP-36 (53-57)	GP-36 (68-70)	GP-37 (15-18)	GP-37 (23-26)	Dup 062920	GP-37 (31-34)	GP-37 (38-40)	GP-37 (65-69)	GP-37 (80-84)	GP-37 (96-100)
Compound/Parameter	CAS No.	(EPA MCL)	6/25/2020	6/25/2020	6/25/2020	6/25/2020	6/30/2020	6/30/2020	6/30/2020	6/30/2020	GP-36 (38-40)	6/30/2020	6/30/2020	6/29/2020	6/29/2020	6/29/2020	6/29/2020	6/29/2020	7/1/2020	7/1/2020	7/1/2020
			2001004889	2001004889	2001004889	2001004889	2001004890	2001004890	2001004890	2001004890	Blind Dup GP-36 (38-40)	2001004890	2001004890	2001004891	2001004891	Blind Dup GP-37 (23-26)	2001004891	2001004891	2001004891	2001004891	2001004891
Volatile Organic Compounds (VC	Cs) - EPA Metho	od 8260B (Detected Co	mpounds) - repo	rted in ug/L																	
1,1-Dichloroethane	75-34-3	80	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	2.85	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
1,1-Dichloroethene	75-35-4	200 (7)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	1.98	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
Acetone	67-64-1	4000 / 3000	<50.0	<50.0	<50.0	<500	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0
Chloroethane	75-00-3	NE	<5.00	<5.00	<5.00	<50.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00
Ethylbenzene	100-41-4	50 / 40 (700)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
Toluene	108-88-3	200 / 70 (1000)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
Trichloroethene	79-01-6	0.4 (5)	<1.00	<1.00	<1.00	<10.0	<1.00	1.30 J+	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
Vinyl chloride	75-01-4	0.2 (2)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
p-Isopropyltoluene	99-87-6	NE	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.00	<1.00	<1.00	<10.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00
1,4-Dioxane Method EPA 8270D	by SIM																				
1,4-Dioxane (SIM)	123-91-1	1	0.46 J-	<0.26 J-	0.32 J-	<0.89 J-	<0.50 J-	1.2 J-	1.1 J-	3.0 J-	3.0 J-	0.32 J-	<0.50 J-	<0.31 J-	<0.31 J-	<0.25 J-	0.94 J-	2.6 J-	2.8	9.7	1.1 J-
Dissolved Lead (Pb) Method EPA	A 6010D / 6020B																				
Lead	7439-92-1	15	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit

<1.00 = lab reporting limit greater than regulatory risk-screening value HRL or HBV exceedance

MDH = Minnesota Department of Health

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable

ug/L - micrograms per liter (parts per billion)

NE = Not Established NS = Not Sampled

15 ug/L is the EPA action level for lead (at Tap)

- The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the UJ- = possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- -/- = Samples with multiple qualifiers separated by a "/" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag; Non-detected value resulting from quantitation that is believed to be biased very low.
- Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected value therefore represents an estimated value with a potentially low bias.

											Sample ID,	Date Collected &	MPCA LUI#								-
		MDH HRL/HBV and	GP-43 (6-9)	GP-43 (14-17)	GP-43 (22-25)	GP-43 (30-33)	GP-43 (38-40)	GP-44 (24-27)	GP-44 (37-40)	GP-45 (11-14)	GP-45 (29-32)	GP-45 (37-40)	DUP070120	GP-46 (9-12)	GP-46 (17-20)	GP-46 (30-33)	GP-46 (38-40)	GP-47 (38-40)	GP-48 (8-12)	GP-48 (25-27)	GP-48 (31-34)
Compound/Parameter	CAS No.	(EPA MCL)	6/30/2020	6/30/2020	6/30/2020	6/30/2020	6/30/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/1/2020	7/2/2020	7/2/2020	7/2/2020	7/2/2020
			2001004892	2001004892	2001004892	2001004892	2001004892	2001004893	2001004893	2001004894	2001004894	2001004894	Blind Dup GP-45 (37-40)	2001004895	2001004895	2001004895	2001004895	2001004896	2001004897	2001004897	2001004897
/olatile Organic Compounds (VO	Cs) - EPA Metho	od 8260B (Detected Cor	mpounds) - repo	rted in ug/L																	
1,1-Dichloroethane	75-34-3	80	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
1,1-Dichloroethene	75-35-4	200 (7)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
1,2-Dichloroethane	107-06-2	1 (5)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
Acetone	67-64-1	4000 / 3000	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<100	<50.0	<50.0	<50.0	<50.0	<250	<50.0	<50.0
Chloroethane	75-00-3	NE	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<25.0	<5.00	<5.00
Ethylbenzene	100-41-4	50 / 40 (700)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
Toluene	108-88-3	200 / 70 (1000)	<1.00	<1.00	<1.00	<1.00	1.58	<1.00	1.04	1.41	<1.00	1.16	1.23	<2.00	<1.00	1.15	<1.00	<1.00	<5.00	<1.00	<1.00
Trichloroethene	79-01-6	0.4 (5)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
Vinyl chloride	75-01-4	0.2 (2)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
p-Isopropyltoluene	99-87-6	NE	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00
,4-Dioxane Method EPA 8270D b	y SIM																				
1,4-Dioxane (SIM)	123-91-1	1	<0.29 J-	<0.28 J-	0.32 J-	0.36 J-	0.37 J-	<0.25 J-	3.2 J-	<0.25 J-	<0.29 J-	0.27	<0.25 J-	0.94 J-	<0.24 J-	1.4 J-	<0.24 J-	<0.25	0.85 J-	0.71 J-	<0.25 J-
Dissolved Lead (Pb) Method EPA	6010D / 6020B																				
∟ead	7439-92-1	15	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

							Sa	mnle ID Date Col	lected & MPCA LI	II #				
		MDH HRL/HBV and	GP-49 (10-12)	GP-49 (17-20)	GP-49 (45-47)	GP-49 (57-59)	GP-49 (73-75)	GP-50 (15-18)	GP-50 (35-38)	GP-50 (45-47)	GP-50 (58-60)	DUP_070920	GP-50 (78-80)	GP-50 (98-100)
Compound/Parameter	CAS No.	(EPA MCL)	7/7/2020	7/7/2020	7/7/2020	7/7/2020	7/7/2020	7/9/2020	7/9/2020	7/9/2020	7/9/2020	7/9/2020	7/9/2020	7/9/2020
			2001004898	2001004898	2001004898	2001004898	2001004898	2001004899	2001004899	2001004899	2001004899	GP-50 (58-60)	2001004899	2001004899
Volatile Organic Compounds (VO	Cs) - EPA Meth	od 8260B (Detected Co	mpounds) - repor	ted in ug/L										
1,1-Dichloroethane	75-34-3	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
1,1-Dichloroethene	75-35-4	200 (7)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
1,2-Dichloroethane	107-06-2	1 (5)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
Acetone	67-64-1	4000 / 3000	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<20.0	<20.0	<20.0	<100	<20.0
Chloroethane	75-00-3	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
Ethylbenzene	100-41-4	50 / 40 (700)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
Toluene	108-88-3	200 / 70 (1000)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
Trichloroethene	79-01-6	0.4 (5)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.80	<0.40	<0.40	<0.40	<2.0	<0.40
Vinyl chloride	75-01-4	0.2 (2)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<1.0	<0.20
cis-1,2-Dichloroethene	156-59-2	6 (70)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
p-Isopropyltoluene	99-87-6	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
trans-1,2-Dichloroethene	156-60-5	40 / 9 (100)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<5.0	<1.0
1,4-Dioxane Method EPA 8270D b	y SIM													
1,4-Dioxane (SIM)	123-91-1	1	<0.28 J-	<0.25 J-	<0.26 J-	<0.28 J-	<0.28 J-	<0.38 J-	<0.50 J-	<0.25 J-	1.1 J-	<0.23 J-	2.4 J-	<0.25 J-
Dissolved Lead (Pb) Method EPA	6010D / 6020B													
Lead	7439-92-1	15	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

### Notes:

ND = Not detected above laboratory reporting limits

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit

<1.00

= lab reporting limit greater than regulatory risk-screening value

## HRL or HBV exceedance

MDH = Minnesota Department of Health

HRL/HBV = Health Risk Limit and Health Based Value

EPA MCL = Environmental Protection Agency, Maximum Contaminant Level

NA = Not Applicable

ug/L - micrograms per liter (parts per billion)

NE = Not Established

NS = Not Sampled

15 ug/L is the EPA action level for lead (at Tap)

- UJ- = The analyte was not detected above laboratory quantitation limit, however the quantitation limit is approximate as the preservation did not necessarily achieve the proper pH level of the samples, allowing for the possibility of sample degradation outside of 7-day hold time that represents a preservation qualifier with a potentially low bias; The method 14-day hold time was met, however preservation interference resulted in the estimated value; The resulting non-detect value is considered an estimated result based on this fact.
- Samples with multiple qualifiers separated by a "/" are those where a separate QC issue resulted in the MS/MSD sample, resulting in parent sample being marked as estimated also (in addition to the original estimated flag from improper sample pH); The associated QC sample recovered analyte outside of the QC limits, thus the parent sample is considered estimated for this reason as well.
- UJ-- = Same reasoning as "UJ-" flag; Non-detected value resulting from quantitation that is believed to be biased very low.
- J- = Detected analyte was properly analyzed within hold time, however the preservation was unable to obtain a low enough sample pH criteria and corrective action was not possible prior to analysis; Detected value therefore represents an estimated value with a potentially low bias.

## Table 6 Sub-Slab Vapor Analytical Results Summary Water Gremlin - South Campus 4316 Otter Lake Road

## White Bear Township, MN Wenck Project No. B002606-19-017 September 2020

	0	0		South Car	mpus R&D	
Parameter	Commercial / Industrial		SS-1	SS-2	SS-3	SS-4
	ISV	33X ISV	07/10/2020	07/10/2020	07/10/2020	07/10/2020
Volatile Organic Compounds (VO	Cs) Method TO-15 - Repo	rted in ug/m3 (Detected	Compounds Only)			
1,2,4-Trimethylbenzene	210	7000	41.8	13.7	12.8	16.4
1,3,5-Trimethylbenzene	210	7000	19.9	3.6	3.8	8.1
2-Butanone (MEK)	18000	600000	94.8	60.3	42.7	72.9
2-Propanol	700	23000	75.8	53.9	63.3	63.3
4-Ethyltoluene	N/A	N/A	10.2	<8.7	<9.4	<8.7
4-Methyl-2-pentanone (MIBK)	11000	370000	45.4	<14.5	38.1	42.4
Acetone	110000	3700000	719	661	413	704
Benzene	45	1500	112	17.8	6.0	162
Bromomethane	18	600	5.5	<2.7	<3.0	<2.7
Carbon disulfide	2800	93000	4.9	3.8	48.1	8.2
Chloromethane	320	11000	2.4	<1.5	<1.6	<1.5
Cyclohexane	21000	700000	86.9	23.3	30.9	134
Ethanol	N/A	N/A	500	1050	1040	903
Ethylbenzene	39	1300	23.7	9.8	7.0	20.5
Methylene Chloride	2100	70000	31.1	30.3	<13.2	17.3
Naphthalene	32	1100	656	18.4	<9.9	<9.3
Propylene	11000	370000	135	<1.2	<1.3	292
Styrene	3200	110000	77.2	<3.0	<3.2	4.0
Tetrachloroethene	33	1100	11.9	<2.4	8.8	6.5
Tetrahydrofuran	7000	230000	151	130	231	160
Toluene	14000	470000	153	19.1	17.4	131
Trichloroethene	7	230	12.7	3.0	2.6	9.4
Trichlorofluoromethane	3500	120000	<4.4	<4.0	6.8	<4.0
m&p-Xylene	N/A	N/A	103	27.3	26.3	43.6
n-Heptane	1400	47000	111	12.5	40.6	143
n-Hexane	2500	83000	127	17.7	28.6	207
o-Xylene	350	12000	43.5	11.6	10.8	21.1
trans-1,2-Dichloroethene	N/A	N/A	17.2	18.2	125	57.1

### Notes:

EPA = Environmental Protection Agency

MPCA = Minnesota Pollution Control Agency

ISV = Intrusion Screening Value

VOCs = Volatile Organic Compounds

NE = Not Established

ND= Not Detected above laboratory reporting limits

ug/m3 = micrograms per meter cubed

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit

33X Industrial ISV Exceedance

									San	nple ID, Date Co	ollected & Loca	ation					
		MBOAL	MDOAL	SED-1	SED-2	SED-3	062019-13	SED-4	SED-5	SED-6	SED-7	SED-8	SED-9	SED-10	SED-11	SED-12	SED-13
Compound/Parameter	CAS No.	MPCA Level I SQT	MPCA Level II	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019
		SQI	SQT	County Ditch 14	LD00362	LD00363	LD00364	LD00368	LD00369	LD00370	LD00371	LD00372					
Volatile Organic Compounds (VO	Cs) EPA Met	hod 8260B (Modif	ied List) - reporte	d in mg/kg													
1,1,1-Trichloroethane	71-55-6	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	<0.263	< 0.334	NS	NS	NS	NS	NS
1,1-Dichloroethane	75-34-3	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
1,1-Dichloroethene	75-35-4	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
1,2-Dichloroethane	107-06-2	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	156-59-2	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
Tetrachloroethene	127-18-4	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	<0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
Vinyl chloride	75-01-4	NE	NE	<1.57 UJ	<1.50	<1.71	<1.70	<1.68	< 0.351	< 0.464	< 0.263	< 0.334	NS	NS	NS	NS	NS
Lead EPA Method 6020 - reported	l in mg/kg																
Lead	7439-92-1	36	130	113	66.2	77.7	87.7	81.7	7.01	215	1060	71.2	103	374	546	137	98.4
1,4-Dioxane EPA Method 8260D r	eported in m	g/kg															
1,4-Dioxane (p-Dioxane)	123-91-1	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

									San	nple ID, Date Co	ollected & Loca	tion					
		145041		SED-14	SED-15	SED-16	SED-17	SED-18	SED-19	SED-20	SED-21	SED-22	SED-23	SED-24	SED-25	SED-26	SED-27
Compound/Parameter	CAS No.	MPCA Level I	MPCA Level II	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	07/09/2020	07/09/2020	07/09/2020	07/09/2020	07/09/2020
'		SQT	SQT											West	West	West	South
				LD00373	LD00374	LD00375	LD00376	LD00377	LD00378	LD00379	LD00380	LD00381	Lambert Creek	Stormwater	Stormwater	Stormwater	Stormwater
														Pond	Pond	Pond	Pond
Volatile Organic Compounds (VO	Cs) EPA Met	hod 8260B (Modif	ied List) - reported	l in mg/kg													
1,1,1-Trichloroethane	71-55-6	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
1,1-Dichloroethane	75-34-3	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
1,1-Dichloroethene	75-35-4	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
1,2-Dichloroethane	107-06-2	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
Chloroethane	75-00-3	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
cis-1,2-Dichloroethene	156-59-2	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
Tetrachloroethene	127-18-4	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
trans-1,2-Dichloroethene	156-60-5	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
Trichloroethene	79-01-6	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
Vinyl chloride	75-01-4	NE	NE	NS	NS	NS	NS	NS	NS	NS	NS						
Lead EPA Method 6020 - reported	in mg/kg																
Lead	7439-92-1	36	130	91.7	51.7	77.3	21.4	3.1	15.3	9.9	42.8	45.3	86.1	4.3	26.0	23.6	5.5
1,4-Dioxane EPA Method 8260D re	ported in me	g/kg															
1,4-Dioxane (p-Dioxane)	123-91-1	NE	NE	NS	NS	NS	<41.5	<16.2	<20.0	<15.5	<16.7						

## Notes:

NE = Not Established

NS = Not Sampled

< = Less than the reporting limit

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit

mg/kg = PPM

MPCA = Minnesota Pollution Control Agency

SQT = Sediment Quality Targets

Level I SQT exceedance

Level II SQT exceedance

## Qualifiers (US EPA Qualifier Code):

UJ = Samples marked with this flag were non-detect but contained a representative quality control sample with a relative percent difference (RPD)outside the quality control range, or percent recovery of the analyte was below the QC limits; The associated parent sample is therefore flagged as estimated even though the results were below the laboratory reporting limits.

									Sample ID, Date	Collected & Loca	tion / MPCA LUI	#					
Compound/Parameter	CAS No.	Tier I Surface Water Screening Criteria (non ORVW or OIRW	SW-1	SW-2	SW-3	SW-4	062019-A	SW-5	SW-6	SW-7	SW-8	DUP 102319	SW-9	SW-10	SW-11	SW-12	SW-13
·		(non ORVVV of ORVV) waters)	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	06/20/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019
		,	S015-354	S015-355	S015-356	S015-357	Blind Dup SW-4	S015-358	S015-359	S016-198	S016-199	SW-8 Duplicate	S016-200	S016-201	S016-202	S016-203	S016-204
Volatile Organic Compounds (VO	Cs) - EPA Meti	hod 8260B (Modified Lis	st) - reported in ι	ıg/L													
1,1,1-Trichloroethane	71-55-6	200	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	75-34-3	47	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	75-35-4	7	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloroethane	107-06-2	3.5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	156-59-2	70	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	127-18-4	3.8	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	100	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl chloride	75-01-4	0.17	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	NS	NS	NS	NS	NS	NS	NS	NS
Lead EPA Method 6020 - reporte	d in (ug/L)																
Lead	7439-92-1	6.72	<1.00	<1.00	<1.00	11.6	12.5	12.2	3.74	26.4	<b>88.1</b> JFD59	<b>44.6</b> JFD59	52.0	0.56	0.44	1.0	0.58
1,4-Dioxane - EPA Method 8270E	by SIM - repor	ted in ug/L															
1,4-Dioxane (SIM)	123-91-1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Hardness by 2340B - report	ted in ug/L																
Total Hardness by 2340B		50000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

									Sample ID, Date	Collected & Loca	tion / MPCA LUI	#					
		Tier I Surface Water Screening Criteria	SW-14	SW-15	SW-16	SW-17	DUP-2	SW-18	SW-19	SW-20	Downspout 1	Downspout 2	SW-21	SW-22	SW-DUP- 070920	SW-23	SW-24
Compound/Parameter	CAS No.	(non ORVW or OIRW	10/23/2019	10/23/2019	10/23/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/21/2019	10/21/2019	07/15/2020	07/09/2020	07/09/2020	07/09/2020	07/09/2020
		waters)	S016-205	S016-206	S016-207	S016-208	SW-17 Duplicate	S016-209	S016-210	S016-211	S016-212	S016-213	Lambert Creek	West Stormwater Pond	SW-22 Duplicate	West Stormwater Pond	West Stormwater Pond
Volatile Organic Compounds (VO	Cs) - EPA Meti	hod 8260B (Modified Li	st) - reported in u	ıg/L													
1,1,1-Trichloroethane	71-55-6	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	75-34-3	47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	75-35-4	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloroethane	107-06-2	3.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	156-59-2	70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	127-18-4	3.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	156-60-5	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	79-01-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl chloride	75-01-4	0.17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead EPA Method 6020 - reported	d in (ug/L)																
Lead	7439-92-1	6.72	0.56	0.34	0.32	<b>640</b> JFD53	<b>517</b> JFD53	0.61	0.12	0.3	1.6	2.7	0.62	618	802	2,780	4,040
1,4-Dioxane - EPA Method 8270E	by SIM - repor	ted in ug/L															
1,4-Dioxane (SIM)	123-91-1	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.35 J-	<0.50 J-	<0.25 J-	1.1 J-	<0.25 J-
Total Hardness by 2340B - report	ted in ug/L																
Total Hardness by 2340B		50000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	87,600	151,000	151,000	107,000	765,000
NI 4																	

### Notes

All results reported in micrograms per liter (ug/L)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit Tier I Surface Water Screening Criteria Exceedance

MDH = Minnesota Department of Health

<sup>a</sup>= MDH Health Based Value (HBV)

NA = Not Applicable

ND = Not detected above method detection limits

NE = Not Established

OIRW = Outstanding International Resource Waters

ORVW = Outstanding Resource Value Waters

## Qualifiers (DSA designation - No EPA Code Available):

- JFD# = These samples and there associated pair observed a RPD result that was outside of the 50% QAPP limit previously specified; The # value represents the RPD number for the associated sample analyte.
- J- = Detected value represents an estimated value with a potentially low bias.

## Table 9 Residential Well Sampling Results Gem Lake, MN Water Gremlin Wenck Project No. B002606--19-017 September 2020

and the same	Address	1,4-Dioxane Sample	1,4-Dioxane Result	MDH 1,4-Dioxane	MDH 1,4-Dioxane
number		Date	(ug/L)	Sample Date	Result (ug/L)
145781	1570 Goose Lake Rd	7/28/2020	<0.21	NS	NS
112320	1370 Goose Lake Road	7/22/2020	<0.20	NS	NS
		7/31/2020	<0.19	NS	NS
736637	1400 Goose Lake Road	7/20/2020	<0.21	NS	NS
122006	1345 Goose Lake Road	7/20/2020	<0.21	NS	NS
13988	4010 Scheuneman Road	7/21/2020	<0.21	NS	NS
10000	4010 Odilodilollidii Rodd	7/22/2020	<0.21	NS	NS
823988	3960 Scheuneman Road	-	<0.18	NS	NS
		7/31/2020			
517294		7/27/20	<0.21	1/24/20	0.059
1000023757	1543 Goose Lake Rd	7/31/20	<0.19	1/24/2020*	0.057*
		7/31/20	<0.19	1/24/2020*	0.057*
		7/23/2020	<0.21	NS	NS
513513	1602 Goose Lake Rd	7/31/2020	<0.20	NS	NS
504074	4442 Cohomooo Dood				
521371	4113 Scheuneman Road	7/21/2020	<0.21	NS	NS 
520701	1606 Goose Lake Road	7/21/2020	<0.20	NS	NS
641778	1430 Goose Lake Road	7/20/2020	0.23	NS	NS
654313	1299 Goose Lake Road	7/27/2020	0.95	NS	NS
641460	1501 Goose Lake Road	7/24/2020	<0.21	NS	NS 
712565	20 Hillary Farm Lane	7/29/2020	<0.20	NS	NS
798675	1 Hillary Farm Lane	7/28/2020	<0.20	NS	NS
		7/23/2020	<0.20	NS	NS
780334	16 Hillary Farm Lane	7/31/2020	<0.19	NS	NS
		7/31/2020	<0.21	NS	NS
		7/27/2020	<0.21	NO	NO
793958	3999 Scheuneman Road			NS	NS
		7/31/2020	<0.19	NS	NS
809116	26 Hillary Farm Lane	7/28/2020	<0.21	NS	NS
791726	27 Hillary Farm Lane	7/28/2020	<0.21	NS	NS
715644	10 Hillary Farm Lane	7/29/2020	<0.20	NS	NS
768665	·	7/24/2020	<0.21	NS	NS
	18 Hillary Farm Lane				
171831	1601 Goose Lake Rd	7/23/2020	<0.20	NS	NS
715640	11 Hillary Farm Lane	7/24/2020	<0.21	NS	NS
569356			<0.20	1/22/20	<0.051
1000023758	4141 Otter Lake Rd.	7/28/20	<0.21		
1000023730			<b>VO.21</b>		
		= (0.0 (0.0		1/24/20	<0.052
519835	4155 Otter Lake Rd	7/20/20	<0.21		
Unknown	1337 Goose Lake Road	7/20/2020	0.8	NS	NS
Unknown	1555 Goose Lake Road	7/29/2020	<0.20	NS	NS
Unknown	1611 Goose Lake Road	7/21/2020	<0.20	NS	NS
		7/24/2020	<0.21	NS	NS
Unknown	1633 Goose Lake Road	7/24/2020	<0.21	NS	NS
		7/31/2020	<0.19	NS	NS
Unknown	1598 Goose Lake Road	7/20/2020	<0.21	NS	NS
UTIKNOWN	1398 Goose Lake Road	1/20/2020			
Unknown	1624 Goose Lake Road	7/29/2020	<0.21	NS	NS
			<0.20	NS	NS
Unknown	1636 Goose Lake Road	7/21/2020	<0.21	NS	NS
318925	4161 Otter Lake Road	7/22/2020	<0.21	NS	NS
Unknown	4151 Otter Lake Road	7/20/2020	<0.21	NS	NS
Unknown	4160 Otter Lake Road	7/22/2020	<0.21	NS	NS
		7/21/2020	<0.21	NS	NS
Unknown	4140 Otter Lake Road			NS	
11-1	4400.0.1	7/21/2020	<0.21		NS
Unknown	4136 Scheuneman Road	7/22/2020	<0.20	NS	NS
Unknown	4134 Scheuneman Road	7/22/2020	<0.21	NS	NS
		7/31/2020	<0.20	NS	NS
Unknown			<b>40.20</b>		
UIKIIOWII	3963 Scheuneman Road	7/24/2020	<0.21	NS	NS
Unknown	3963 Scheuneman Road 3970 Scheuneman Road	7/24/2020 7/29/2020			NS NS
Unknown	3970 Scheuneman Road		<0.21	NS	
		7/29/2020 7/23/2020	<0.21 <0.20 <0.20	NS NS NS	NS NS
Unknown	3970 Scheuneman Road 4100 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020	<0.21 <0.20 <0.20 <0.21	NS NS NS	NS NS NS
Unknown	3970 Scheuneman Road	7/29/2020 7/23/2020	<0.21 <0.20 <0.20	NS NS NS	NS NS
Unknown Unknown Unknown	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020 7/23/2020	<0.21 <0.20 <0.20 <0.21 <0.21	NS NS NS NS	NS NS NS
Unknown	3970 Scheuneman Road 4100 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020	<0.21 <0.20 <0.20 <0.21	NS NS NS	NS NS NS
Unknown Unknown Unknown	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020 7/23/2020	<0.21 <0.20 <0.20 <0.21 <0.21	NS NS NS NS	NS NS NS
Unknown Unknown Unknown	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21	NS NS NS NS NS	NS NS NS NS
Unknown Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020	<0.21 <0.20 <0.20 <0.21 <0.21	NS NS NS NS NS 1/24/20 1/27/20	NS NS NS NS 0.051 0.1 0.096*
Unknown Unknown Unknown	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21	NS NS NS NS NS 1/24/20	NS NS NS NS <0.051
Unknown Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21	NS NS NS NS NS 1/24/20 1/27/20	NS NS NS NS 0.051 0.1 0.096*
Unknown Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21	NS NS NS NS NS 1/24/20 1/27/20	NS NS NS NS 0.051 0.1 0.096*
Unknown Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21	NS NS NS NS NS 1/24/20 1/27/20	NS NS NS NS 0.051 0.1 0.096*
Unknown Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21	NS NS NS NS NS 1/24/20 1/27/20	NS NS NS NS 0.051 0.1 0.096*
Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19	NS NS NS NS NS 1/24/20 1/27/20 1/27/2020*	NS NS NS NS -<0.051  0.1 0.096*
Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20 7/27/20	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19	NS NS NS NS NS 1/24/20 1/27/20 1/27/2020*	NS NS NS NS -<0.051  0.1 0.096*
Unknown Unknown 1000023766 635128	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road 4020 Scheuneman Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS	NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020*	NS NS NS NS -<0.051  0.1 0.096* - 0.086*
Unknown Unknown 1000023766	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS	NS NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020*	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054*
Unknown Unknown 1000023766 635128	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road 4020 Scheuneman Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS	NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020*	NS NS NS NS -<0.051  0.1 0.096* - 0.086*
Unknown Unknown 1000023766 635128	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road 4020 Scheuneman Rd.	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS	NS NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020*	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054*
Unknown Unknown 1000023766 635128	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road  4020 Scheuneman Rd.  4040 Scheuneman Rd  1416 Birchcrest Drive (MDH Record lists 1426 Birch Lake	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS	NS NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020*	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054*
Unknown Unknown 1000023766 635128 1000023765 712018	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road  4020 Scheuneman Rd.  4040 Scheuneman Rd	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS  NS  NS	NS NS NS NS NS NS 1/24/20 1/27/2020* 1/27/2020* 1/22/2020* 1/22/2020*	NS NS NS NS NS <-0.051  0.1 0.096* 0.086*  <-0.050 <-0.052 <-0.054* <-0.051*
Unknown Unknown 1000023766 635128 1000023765 712018	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road  4020 Scheuneman Rd.  4040 Scheuneman Rd  1416 Birchcrest Drive (MDH Record lists 1426 Birch Lake Boulevard South)	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS  NS  NS	NS NS NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020* 1/22/20 1/22/2020* 1/22/2020* 2/21/20	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054* -<0.051*  0.12
Unknown Unknown 1000023766 635128 1000023765 712018	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road  4020 Scheuneman Rd.  4040 Scheuneman Rd  1416 Birchcrest Drive (MDH Record lists 1426 Birch Lake	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS  NS  NS	NS NS NS NS NS NS 1/24/20 1/27/2020* 1/27/2020* 1/22/2020* 1/22/2020*	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054* -<0.051*
Unknown Unknown 1000023766 635128 1000023765 712018	3970 Scheuneman Road 4100 Scheuneman Road 4144 Scheuneman Road 4015 Scheunemann Rd.  1433 Goose Lake Road  4020 Scheuneman Rd.  4040 Scheuneman Rd  1416 Birchcrest Drive (MDH Record lists 1426 Birch Lake Boulevard South)	7/29/2020 7/23/2020 7/23/2020 7/23/2020 7/27/20  7/27/20  7/31/2020  NS  NS  NS  NS  NS	<0.21 <0.20 <0.20 <0.21 <0.21 <0.21 <0.21 <0.21 <0.19  NS  NS  NS  NS  NS	NS NS NS NS NS NS NS 1/24/20 1/27/20 1/27/2020* 1/27/2020* 1/22/20 1/22/2020* 1/22/2020* 2/21/20	NS NS NS NS NS -<0.051  0.1 0.096* 0.086*  -<0.050 -<0.052 -<0.054* -<0.051*  0.12

## Notes:

\* Duplicate Sample

NS = Not Sampled

All results reported in micrograms per liter (ug/L)

ug/L - micrograms per liter (parts per billion)

Bold = analyte detected above the laboratory reporting limit but less than regulatory limit MDH = Minnesota Department of Health

HRL= Health Risk Limit
MDL HRL for 1,4-Dioxane is 1 ug/L

### Appendix A

2020 SRI Soil Boring logs

# BORING NUMBER GP-34 PAGE 1 OF 2



CLIEN	T Water	r Gremlin					PROJECT NAME Remedial Invest	igation			
PROJECT NUMBER 2606-0016							PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110				
DATE	STARTE	<b>D</b> 6/22/20			COMPL	<b>ETED</b> 6/23/20	GROUND ELEVATION 917 ft	н	OLE SIZE	2.25	
						<del>,, ===</del>	GROUND WATER LEVELS:				
						Core					
					CHECK	<b>(ED BY</b> S Waterman, P.G.	▼ AT END OF DRILLING 13.0				
NOTE	S						AFTER DRILLING		T		
о DЕРТН (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	Moisture Content	GRAPHIC LOG	MATE	RIAL DESCRIPTION		W	ELL DIAGRAM	
· -	GMC 1		0.1, 0.2				OIL, some organics, black, moist, , dark brown to gray, moist, stiff	ز			
5	GMC 2		0.6, 0.4			soft to medium stiff, of	vith depth . little silt. plastic. tan. verv moist.	9 <u>12.5</u> 			
10	GMC 3		1.0, 0.6			moist to very moist, s  ▼and silt lenses  *very moist at sand le	Silt, slightly plastic to plastic, tan, soft to medium stiff, intermitted sandenses				
15 - - - 20	GMC 4		1.3, 1.9			gray-brown, moist, so	and fine sand, highly plastic, oft ided silt and fine sandy lenses	902.0			
25	GMC 5		1.4, 1.7			FAT CLAY, trace silt, medium stiff	highly plastic, dark gray, moist,	892.5			
 	GMC 6		2.2, 2.1			gray, very moist, med	um to coarse sand, plastic, dark dium stiff	<u>888.0</u>			
30 35	GMC 7		1.6, 1.8			moist to very moist, s		_882.5			
	GMC 8		1.3, 1.8			plasticity, gray, moist Sand grain size incre	o medium grained, moderate to very moist, medium stiff asing with depth				
40 45	GMC 9		1.4, 2.2		<u> </u>	grained, gray, wet, ve	ooorly graded, medium to coarse ery dense ittle silt, gray-brown, wet, very dens	<u>877.0</u>			
	GMC 10		0.4, 0.6			Q	witch to Macro Core 55' to 100' m grained, trace silt, gray-brown,			- (47-50) VOC/ 1.4-Dioxane &	
50   - 55	GMC 11		0.0			60-65' Medium to coa very dense	arse grained, trace fines, gray, wet,			1,4-Dioxane & / Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler	

### **BORING NUMBER GP-34**

PAGE 2 OF 2



ENVIRONMENTAL BH WATER GREMLIN.GPJ WENCK.GDT 9/25/20

**CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 SAMPLE TYPE NUMBER Moisture Content BLOW COUNTS (N VALUE) GRAPHIC LOG PID (ppm) DEPTH (ft) MATERIAL DESCRIPTION WELL DIAGRAM 55 SAND, trace gravel, poorly graded, medium to coarse grained, gray, wet, very dense 50-55' Fine grained, little silt, gray-brown, wet, very dense 60 Sand Heave @ 50' switch to Macro Core 55' to 100' **GMC** 55-60' Fine to medium grained, trace silt, gray-brown, 0.0 12 wet, very dense 65 60-65' Medium to coarse grained, trace fines, gray, wet, very dense (continued) GMC 0.0, 0.0 13 70 GMC 0.0, 14 0.0 75 76<u>.0</u> 841.0 (75-78) VOC/ SAND with SILT, poorly graded, coarse grained, gray, **GMC** 0.0, 839.5 1,4-Dióxane & wet, loose 15 Dissolved Lead SAND, some gravel, poorly graded, coarse, gray, wet, Analytical Sample 80 dense SP-15 Stainless Steel Discrete GMC 0.0, Sampler 0.0 16 84.0 SAND with SILT, poorly graded, coarse, gray, wet, loose 833.0 85 SAND, trace fines, poorly graded, coarse grained, gray, wet, dense GMC 0.0, Fines increasing with depth 0.0 90 GMC 0.0, 18 95 GMC 0.0, 0.0 19 (97-100) VOC/ 1,4-Dioxane & 100 100.0 817.0 E.O.B. @ 100.0 ' BGS. Dissolved Lead **Analytical Sample** GMC 0.0, SP-15 Stainless 20 0.0 Steel Discrete Sampler

## WELL NUMBER GP-35 PAGE 1 OF 2



	CLIEN	NT Wa	ter Grei	mlin		PROJECT NAME Remedial Investigation	ı			
	PROJ	DJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., M								
	DATE	STAR	<b>ED</b> _6/	24/20		COMPLETED 6/25/20 GROUND ELEVATION 917 ft	ATION 917 ft HOLE SIZE 2.25			
	DRILL	ING CO	ONTRAC	CTOR	Midw	vestern Drilling, LLC GROUND WATER LEVELS:				
	DRILL	LING MI	ETHOD	Geo	probe	with 5' Macro-Core   AT START OF DRILLING 12.5 ft /	Elev 90	4.5 ft		
	LOGG	SED BY	Ben F	lolcon	nb	CHECKED BY S Waterman, P.G. TAT END OF DRILLING 9.2 ft / Electrical Processing of the second	907.8 1	ft		
	NOTE	s				AFTER DRILLING				
Ī		ш	(in)							
	O DEPTH	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (i	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM		
Ī				OL	7 <u>1 1</u>	TOPSOIL, black, moist				
	 	GM 1	С	sc		CLAYEY SAND, fine grained, brown, moist, dense	0.0,			
ŀ	5_	K		├		5.0 912.  SANDY CLAY, brown, moist, soft to medium stiff, frequent 0.25 to	)			
	10	GM 2	С	-		1-inch sand lenses  12.5-14.5' Wet  74.5' Color change to gray	0.0,			
	   15	GM 3		sc		15.5-16.5' Wet ∑	0.8,			
	   20	GM 4	С			20.0	0.0,	(14-17) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler		
	  	GM 5	С	СН		FAT CLAY, gray, moist, medium stiff, few interbedded sand lenses  25.0 892.	0.0, 0.0			
T 9/14/20	   - 30	GM 6	С	SC SC		CLAYEY SAND, fine grained, gray, wet, very soft  29.0 888. 30.0 SANDY CLAY, gray, moist, stiff 887.	0.0,			
IN.GPJ WENCK.GD	   - 35	GM 7	С	СН		FAT CLAY, gray, moist, soft  34.5	0.1, 0.0			
L WATER GREML	   40	GM 8	С	sc		SANDY CLAY, gray, moist, sort  35-40' SANDY CLAY with Gravel  40.0 877.	0.0, 0.2			
GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20	- 45   45	GM 9	С	SP		GRAVELLY SAND, moderately graded, fine to medium grained, gray, wet, dense  Switch to Macro Core 40-90'  45.0 872.	0.0,			
뫐		K		SP		012.		1		

### **WELL NUMBER GP-35**

PAGE 2 OF 2



GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20

**CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 SAMPLE TYPE NUMBER SAMPLE RECOVERY (in) MATERIAL DESCRIPTION GRAPHIC LOG PID (ppm) WELL U.S.C.S. DEPTH (ft) **DIAGRAM** SAND, poorly graded, medium grained, gray, wet, dense GMC 0.0, 10 0.0 50-55' Fine to medium grained, trace silt 4 -(47-50) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless 50 55-70' Coarse grained, trace fines and gravel (continued) Steel Discrete Sampler **GMC** 0.0, 11 0.0 55 GMC 0.4, 0.3 12 SP 60 0.0, 0.0 GMC 13 65 GMC 0.0, 0.0 14 70 847.0 -(68-72) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler 70.0 GRAVELLY SAND, trace silt, poorly graded, coarse grained, gray, wet, dense to very dense • (<u>)</u> GMC 0.3, 78-80' Medium to coarse grained, trace silt, wet, very dense 15 ø 0 75 SP **GMC** 0.6, Ø 16 0 1.0 0 80 837.0 GRAVELLY SAND, trace silt and cobbles, coarse grained, gray, wet, Ø very dense 0 **GMC** 0.0, Ø. SP 0.0 17 0. ( 85 832.0 Ø. SAND with Gravel, little silt, trace cobbles, coarse grained, gray, 0 wet, very dense 0.0, 0.0 **GMC** . o. . (\ SP 18 Ö. (88-90) VOC. -(88-90) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler 90 90.0 827.0 E.O.B. @ 90.0 ' BGS.

### **BORING NUMBER GP-36**

PAGE 1 OF 2



CLIENT Water Gremlin		PROJECT NAME Remedial Investigation	
PROJECT NUMBER 2606-00		PROJECT LOCATION 4400 Otter Lake Ro	pad, White Bear Twp., MN 55110
		GROUND ELEVATION 924 ft H	
DRILLING CONTRACTOR _M	/lidwestern Drilling, LLC	GROUND WATER LEVELS:	
	obe with 5' Macro-Core	TAT START OF DRILLING 5.0 ft / Ele	
	CHECKED BY S Waterman, P.G.		
NOTES		AFTER DRILLING	
SAMPLE TYPE NUMBER BLOW COUNTS (N VALUE)	PID Moistur GRA	RIAL DESCRIPTION	WELL DIAGRAM
	.8, 3.2 black, moist, dense SILTY SAND, poorly light brown, very moi		
$\left  \begin{array}{c} \left  \begin{array}{c} \left  \begin{array}{c} \left  \begin{array}{c} \left  \right  \\ 2 \end{array} \right  \end{array} \right  \end{array} \right  2.$	dense to medium str	graded, fine grained, gray, wet, ff, frequent seams of silt and clay	(8-10) VOC, 1,4-Dioxane,
$\begin{bmatrix} \\ \end{bmatrix} < \begin{bmatrix} GIVIC \\ 3 \end{bmatrix}$ 2.	soft, intermitted clay  1.5, 6, 2.8 SILTY SAND, poorly wet, loose, high dilat	911.0 graded, fine grained, gray-brown,	Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler (13-17) VOC,
	gray, wet, very soft, t		1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
$\left  \left\langle \left  \frac{GMC}{E} \right  \right  \right  = 2.$		graded, fine grained, gray, wet, 899.0	(24-26) VOC.
$\left  \left\langle \left  \frac{GiVIC}{g} \right  \right\rangle \right  = 2.$	27.5 clayey lenses	non-plastic, gray, wet, soft, few  896.5  Clay, gray, very moist to wet,	1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
$ \cdot $ $ \cdot $ $ \cdot $ $ \cdot $ 2.	33.0 sand seams 2.3 SANDY CLAY, fine t frequent silt seams	astic, gray, wet, soft, few silt and  893.0  891.0  o medium grained, gray, wet, dense,  889.0  Ty graded, fine to medium grained,	
	gray, wet, dense 3.4	884.0	(38-40) VOC, 1,4-Dioxane,
	coarse, gray, wet, de	e gravel, moderate grading, fine to ense witch to Macro Core 45' to 70' 879.0	Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler

### **BORING NUMBER GP-36**

PAGE 2 OF 2



ENVIRONMENTAL BH WATER GREMLIN.GPJ WENCK.GDT 9/25/20

**CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 SAMPLE TYPE NUMBER Moisture Content BLOW COUNTS (N VALUE) GRAPHIC LOG PID (ppm) DEPTH (ft) MATERIAL DESCRIPTION WELL DIAGRAM 45 SAND, little silt, poorly graded, fine to medium grained, gray, wet, loose, high dilatancy 1.5, GMC 1.7, 10 48.5 875.5 1.5 SAND, little silt and clay, poorly graded, medium to coarse grained, gray, wet, dense 50 50.0 874.0 No Recovery - liner jam due to sand heave 55 (55-57) VOC, Ì,4-Dióxane, Dissolved Lead Analytical Sample SP-15 Stainless 60 60.0 864.0 Steel Discrete SANDY CLAY, trace gravel, medium to coarse grained, Sampler plastic, gray, very moist to wet, soft 65 65.0 859.0 SAND, little silt and clay, poorly graded, fine to medium grained, gray, wet, dense 2.0, 2.1, **GMC** 66-70' Becoming more coarse with depth 11 (68-70) VOC. 70 70.0 854.0 1,4-Dióxane, SAND, trace silt and gravel, poorly graded, medium to Dissolved Lead coarse grained, gray, wet, very dense Analytical Sample 1.8, GMC SP-15 Stainless 2.0, Steel Discrete 12 1.8 Sampler 75 75.0 849.0 E.O.B. @ 75.0 ' BGS. 3.7, GMC 3.2, 4.1 13

## WELL NUMBER GP-37 PAGE 1 OF 2



CLIEN	NT Wate	r Gren	nlin			PROJECT NAME Remedial Inv	estigation		
PROJ	ECT NUN	/IBER	2606	6-0016		PROJECT LOCATION 4400 Ott	ter Lake R	oad, W	hite Bear Twp., MN 55110
DATE	STARTE	<b>D</b> 6/2	29/20		COMPLETED 7/1/20	GROUND ELEVATION 928 ft	H	IOLE S	IZE 2.25
DRILL	ING CON	ITRAC	TOR	Midw	estern Drilling, LLC	GROUND WATER LEVELS:			
DRILL	ING MET	HOD	Geor	orobe	with 5' Macro-Core	$\overline{igspace}$ at start of drilling $\underline{igspace}$	15.0 ft / E	lev 913	3.0 ft
LOGG	SED BY _	Ben H	olcom	ıb & K	JJ CHECKED BY S Waterman, P.G	6. AT END OF DRILLING 10	0.0 ft / Elev	918.0	ft
NOTE	s					AFTER DRILLING			
O DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL D	ESCRIPTION		PID (ppm)	WELL DIAGRAM
			OL	14.4	0.5_TOPSOIL		927.5		
  - 5	GMC 1				SAND, trace silt, poorly graded, fin	e grained, brown, moist, loose		0.0	
			SP						
<u> </u>	GMC 2							0.0, 0.0	
10					10.0 <b>▼</b>		918.0	5.0	
10					ŠAND, trace silt, poorly graded, ve	ry fine grained, brown, moist,	916.0		
-	GMC				dense			0.1,	
-	3				15' Wet			0.1	
15			SP		⊽				
-	GMC							0.1,	(15-18) VOC, 1,4-Dioxane,
	4							0.0	Dissolved Lead Analytical Sample
20			L		20.0		908.0		SP-15 Stainless Steel Discrete
-					SILTY SAND, poorly graded, very	fine grained, brown, wet, dense			Sampler
-	GMC 5				28.5' Color change to gray			0.0, 0.0	
25									(23-26) VOC,
									1,4-Dioxane, Dissolved Lead Analytical
-	GMC				30-35' Occasional silt seams			0.0,	Sample SP-15 Stainless Steel Discrete
-	6							0.0	Sampler
30			SM						
9/14/2	GMC							0.0,	
- 108 	7							0.0	(31-34) VOC, 1,4-Dioxane, Dissolved Lead
35	KI								Analytical Sample SP-15 Stainless
₩ <u></u> -								0.0	Steel Discrete Sampler
А Б Б Б Б Б Б	GMC 8				20.0		000.0	0.0, 0.0	
40 - 40 -			SC		39.0 40.0 SANDY CLAY, gray, moist, mediui	m stiff	889.0 888.0		(38-40) VOC, 1,4-Dioxane,
GENERAL BH / TP / T					No Recovery				Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
45	-				45.0		883.0		
<u></u>					SILT with SAND, very fine grained, frequent sand and clay lenses	gray, wet, loose, high dilatancy,		4.5	
·  -  -	GMC 9		N A I					1.3, 1.8,	
M - ~ -			ML		46-52' Clay content increasing with slightly plastic	depth, becoming more stiff,		2.1	
50 8									

#### **WELL NUMBER GP-37**

PAGE 2 OF 2



BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20

GENERAL

**CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 PROJECT NUMBER 2606-0016 SAMPLE TYPE NUMBER SAMPLE RECOVERY (in) MATERIAL DESCRIPTION GRAPHIC LOG (mdd) WELL DEPTH (ft) U.S.C.S. **DIAGRAM** 딢 ML 52.0 876.0 2.1, GMC CLAY with SILT and SAND, plastic, gray, moist to very moist, 2.0, 10 medium stiff, frequent silt and fine sandy partings (varved texture) 2.0 CL 55 873.0 FAT CLAY, trace coarse sand, highly plastic, gary, moist to very moist, medium stiff, intermitted silt and fine sandy lenses 17 **GMC** CH 2.0, 60 868.0 CLAY, little silt, plastic, gray, moist to very moist, very stiff, few silt and fine sand partings 1.8, **GMC** 1.7, CL 12 4.8 65 65.0 863.0 CLAYEY SAND with Silt, very fine grained, trace coarse sand, gray, wet, very loose 3.0, (65-69) VOC, 1,4-Dioxane, Dissolved Lead GMC SC 4.9, 13 4.1 Analytical Sample SP-15 Stainless 70 858.0 SANDY LEAN CLAY, some silt and trace gravel, fine grained, Steel Discrete Sampler plastic, dark gray, moist, stiff to very stiff 3.7, GMC SC 8.3, 6.1 75 853.0 CLAY with SAND, some silt, highly plastic, very fine grained, gray, very moist, soft to medium stiff 6.1, GMC SC 6.8, 8.4 80 80.0 848.0 CLAYEY SAND with SILT, very fine grained, gray, very moist to wet, soft to medium stiff 7.3, (80-84) VOC, 1,4-Dioxane, GMC 7.0, 16 SC-Dissolved Lead Analytical 8.3 SM Sample SP-15 Stainless 85 Steel Discrete 841.0 7.6, **GMC** SILT with SAND, some clay, non-plastic, fine grained, gray, very 5.3, moist to wet, medium stiff, frequent clay and fine sand seams 8.9 ML 90 838.0 CLAYEY SAND, fine to medium grained, trace coarse sand, gray, SC 91.5 wet, very soft / loose 836.5 1.6, GMC SC 93.0 SANDY LEAN CLAY, plastic, fine to medium grained, trace gravel, 835.0 1.3, 18 gray, moist, very stiff 1.7 SAND, poorly graded, medium to coarse grained, trace silt and 95 gravel, gray, wet, very dense SP 2.0, **GMC** 2.0, (96-100) VOC, 1,4-Dioxane, Dissolved Lead 19 2.3 100 100.0 828.0 Analytical Sample SP-15 Stainless E.O.B. @ 100.0 ' BGS. Steel Discrete Sampler

## BORING NUMBER GP-38 PAGE 1 OF 1

N. T.
WENCK

	PROJECT NAME Remedial Investigation	
PROJECT NUMBER 2606-0016	PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 5	55110
	COMPLETED 6/29/20 GROUND ELEVATION 928 ft HOLE SIZE 2.25	
	stern Drilling, LLC GROUND WATER LEVELS:	
	ith 5' Dual-Tube   AT START OF DRILLING 7.0 ft / Elev 921.0 ft	
LOGGED BY Ben Holcomb	CHECKED BY S Waterman, P.G. AT END OF DRILLING	
NOTES	AFTER DRILLING	
SAMPLE TYPE NUMBER NUMBER	SAMPLE SAMPLE U.S.C.S. U.S.C.S. GRAPHIC LOG LOG	PID (ppm)
0.0	TOPSOIL, black, moist	
-		
	$\begin{bmatrix} \frac{\sqrt{k}}{\sqrt{k}}, \frac{\sqrt{k}}{\sqrt{k}} \\ \frac{\sqrt{k}}{\sqrt{k}}, \frac{\sqrt{k}}{\sqrt{k}} \end{bmatrix} = 0$ 927.0	
PP 1 (3-4') VOC & 1,4-Dioxane Analytical Sampl	SILTY SAND, poorly graded, very fine grained, brown, moist, loose 7' Wet	0.0,
PP 2	SM	0.0,

## BORING NUMBER GP-39 PAGE 1 OF 1

WENCK

CLIENT Water	Gremlin					PROJECT NAME Rem	edial Investigation		
PROJECT NUME	BER 2606-0016					PROJECT LOCATION _	4400 Otter Lake Road, White Be	ar Twp., MN 5	5110
DATE STARTED	6/29/20	CON	/IPLET	ED _	6/29/20	GROUND ELEVATION 926 ft HOLE SIZE 2.25			
DRILLING CONT	RACTOR Midweste	ern Dril	ling, L	LC		GROUND WATER LEVE	ELS:		
DRILLING METH	IOD Geoprobe with	5' Dua	I-Tube	)		$\overline{igspace}$ at start of Dr	RILLING 8.0 ft / Elev 918.0 ft		
LOGGED BY B	en Holcomb	CHE	CKED	ВΥ	S Waterman, P.G.		LING		
NOTES						AFTER DRILLING			
O DEPTH O (ff) SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG		MATERIAL D	ESCRIPTION		PID (ppm)
				71 N	TOPSOIL, bla	ick, moist			
			OL	·					
├ <b>- </b> ▼				<u> </u>	1.0			925.0	
					SILTY SAND,	poorly graded, very fine	grained, brown, moist, dense		
					8' Wet				
2.0									
<u> </u>									0.0
PP	(0.41) \ (0.000)								0.0, 0.0
	(3-4') VOC & 1,4-Dioxane								
<b>├</b>	Analytical Sample								
<b>├</b> -  <b> </b>									
4.0									
			SM						
			SIVI						
6.0									
L J PP									0.0,
8.0					$\nabla$				0.0
					⊻				
├ ┤ <b> </b>									
-   <b> </b>									
_									
10.0					10.0			916.0	
						E.O.B. @ 1	0.0 ' BGS.		
PP 8.0 10.0									

# BORING NUMBER GP-40 PAGE 1 OF 1

WENCK

	ater Gremlin				PROJECT NAME Remedial Investigation				
	NUMBER 2606-0016					PROJECT LOCATION _4400 Otter Lake Road, White Bear Twp., MN 55110			
	RTED 6/30/20	CON	/IPLET	ΓED (					
	CONTRACTOR Midwes								
	METHOD Geoprobe with				$\overline{\searrow}$ AT START OF DRILLING _7.0 ft / Elev 921.0 ft				
	Y Ben Holcomb								
					AFTER DRILLING				
O DEPTH (ft)	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)		
					Asphalt Surface	927.6			
2.0 	(3-4') VOC & 1,4-Dioxane Analytical Sample				SILTY SAND, poorly graded, very fine grained, brown, moist, dense 7' Wet		0.0, 0.0		
6.0 6.0 8.0 10.0	PP		SM		□ 10.0 E.O.B. @ 10.0 ' BGS.	918.0	0.0, 0.0		
8.0 10.0									

## BORING NUMBER GP-41 PAGE 1 OF 1



CLIENT Water Gremlin		PROJECT NAME Remedial Investigation	
PROJECT NUMBER 2606-0		PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN	55110
DATE STARTED 6/30/20		6/30/20 GROUND ELEVATION 926 ft HOLE SIZE 2.25	
		GROUND WATER LEVELS:	
DRILLING METHOD Geopre			
LOGGED BY Ben Holcomb	CHECKED BY	S Waterman, P.G. AT END OF DRILLING	
NOTES		AFTER DRILLING	
SAMPLE TYPE NUMBER NUMBER	SAMPLE RECOVERY (in) U.S.C.S. GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)
0.0		Asphalt Surface 0.4 925.	6
. –		SILTY SAND, poorly graded, very fine grained, black, moist, dense	.0
PP 1 (3-4') VO 1,4-Diox; Analytical S	& e enple		0.0,
6.0 6.0 	SM	∑ 10.0 E.O.B. @ 10.0 ' BGS.	0.0, 0.0

# BORING NUMBER GP-42 PAGE 1 OF 1

N. T.
WENCK

CLIEN.	T Wate	r Gremlin				PROJECT NAME Remedial Investigation	
		MBER 2606-0016				PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN	l 55110
		<b>D</b> 6/30/20					
		TRACTOR Midwester  HOD Geoprobe with		_		GROUND WATER LEVELS:  AT START OF DRILLING 9.0 ft / Elev 917.0 ft	
		Ben Holcomb					
		20				AFTER DRILLING	
O DEPTH	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
Ŭ					9 4 4	Concrete Surface	4
  5	PP 1	(3-4') VOC & 1,4-Dioxane Analytical Sample				SILTY SAND, poorly graded, very fine grained, dark gray, moist, dense 9' Wet	0.0,
  10	PP 2			SM		☑	0.0,
	PP 3					15.0	0.0, 0.0
13					1.1.1.	E.O.B. @ 15.0 ' BGS.	.0

# BORING NUMBER GP-43 PAGE 1 OF 1

N. Y.
WENCK

CLIEN	IT _Wate	er Gremlin				PROJECT NAME Remedial Investigation	on_				
	· ·	MBER _260	6 <u>-0016</u>			PROJECT LOCATION 4400 Otter Lake		White Bear Twp., MN 55110			
DATE	STARTE	<b>D</b> 6/30/20			COMPL	ETED 6/30/20         GROUND ELEVATION 916 ft	HOLE S	SIZE 2.25			
						, LLC GROUND WATER LEVELS:					
		THOD Geo					AT START OF DRILLING 6.0 ft / Elev 910.0 ft				
		Ben Holcon	nb		CHECK	ED BY S Waterman, P.G. AT END OF DRILLING 6.0 ft / Ele		ft			
NOTE	S	T				AFTER DRILLING					
O DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	Moisture Content	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM			
   5	PP 1		0.0, 0.0			CLAYEY SAND, fine grained, brown, moist, dense 6' Wet 9.5' Color change to gray					
10	PP 2		0.0, 0.0			Ť		(6-9) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless			
  15	PP 3		0.0, 0.0					Steel Discrete Sampler  SP-15 Stainless Steel Discrete			
   20	PP 4		0.0, 0.0			FAT CLAY, gray, wet, soft  18.0	0.0 8.0 6.0	Sampler (14-17) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample			
   25	PP 5		0.0, 0.0			SILTY SAND, poorly graded, fine grained, gray, wet, dense  22.5  SANDY CLAY, gray, wet, soft	3.5	(22-25) VOC, 1,4-Dioxane,			
	PP 6		0.0, 0.0			SILTY SAND, trace clay, poorly graded, fine grained, gray, wet, dense  34.5-35' Loose / soft	<u> </u>	Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler			
35	PP 7		0.0,			35.0 88	1.0	(30-33) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless			
35 .	GMC 8		0.0,			SANDY CLAY with Silt, fine grained, gray, wet, dense	6.0	Steel Discrete Sampler  (38-40) VOC, 1,4-Dioxane,			
30 35 35 40 40 40 40 40 40 40 40 40 40 40 40 40					241	E.O.B. @ 40.0 ' BGS.		Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler			

## WELL NUMBER GP-44 PAGE 1 OF 1



	T Wate									
	ECT NUM					PROJECT LOCATION 4400 Ott			· · · · · · · · · · · · · · · · · · ·	
					<b>COMPLETED</b> _7/1/20					
DRILL	ING CON	NTRAC	TOR	Midw	estern Drilling, LLC					
DRILL	ING MET	THOD	Geo	probe v	vith 5' Dual-Tube	$_{\perp}$ at start of drilling $_{\perp}$	15.0 ft / E	Elev 90	5.0 ft	
LOGG	ED BY _	Ben H	olcon	nb	CHECKED BY S Waterman, P.	G. $\sqrt{}$ AT END OF DRILLING 14	1.8 ft / Ele	v 905.2	ft	
NOTE	s									
о ОЕРТН (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL	DESCRIPTION		PID (ppm)	WELL DIAGRAM	
	Y		0.	711	TOPSOIL, black, moist					
<u> </u>	PP		OL	1/ 1/	2.5		917.5	0.0,		
	1 1				SANDY CLAY, brown, moist, soft		00	0.0		
5					9.5-10' Interbedded sand seams					
	PP 2		SC					0.0,		
- <sub>10</sub> -					40.0		040.0			
10					CLAYEY SAND, fine to medium of	grained, brown, very moist, medium	910.0			
	<b>Y</b>				dense	•				
	PP 3				14.8' Wet			0.0,		
			sc		Becoming more stiff with depth, c	olor change to gray		0.0		
15	<b>∆</b>		30		¥	o.o. c.i.a.i.go to g.a.y				
<b>-</b>	Y									
h -	PP							0.0,		
					18.5 FAT CLAY, highly plastic, gray, m	noist modium stiff	901.5	0.0		
20					TAT CLAT, Highly plastic, gray, if	ioist, medium sun				
L -	Y		СН							
	PP							0.0,		
<b>-</b>	5				23.0 SANDY CLAY, trace gravel, gray,	 moist. stiff	897.0	0.0		
25										
	<b>Y</b>								(24-27) VOC, 1,4-Dioxane,	
	  PP							0.0,	Dissolved Lead Analytical	
] -	6							0.0,	Sample SP-15 Stainless Steel Discrete	
			sc						Sampler	
30										
	PP 7							0.0,		
35					SAND, trace clay, poorly graded,	fine grained gray wet dones	885.0			
}	<b>Y</b>				Only D, liace clay, poorly graded,	mic grameu, gray, wet, uense				
<b>†</b> †	PP		SP					0.0,		
[	8							0.0	(14-17) VOC, 1,4-Dioxane,	
40					40.0		880.0		Dissolved Lead Analytical	
					E.O.B. @	40.0 ' BGS.			Sample SP-15 Stainless Steel Discrete Sampler	

# WELL NUMBER GP-45 PAGE 1 OF 1



CLIEN	NT Wate	er Grer	nlin			PROJECT NAME Remedial Inv	estigation		
PROJ	ECT NUI	MBER	2606	6-0016		PROJECT LOCATION 4400 Ot	ter Lake R	oad, W	hite Bear Twp., MN 55110
DATE	STARTE	ED _7/	1/20		<b>COMPLETED</b> 7/1/20	GROUND ELEVATION 920 ft	н	IOLE S	IZE _2.25
DRILI	ING CO	NTRAC	TOR	Midw	restern Drilling, LLC	GROUND WATER LEVELS:			
DRILI	ING ME	THOD	Geo	probe	with 5' Dual-Tube	$\overline{igspace}$ at start of drilling	12.0 ft / E	lev 908	3.0 ft
LOGG	SED BY	Cory A	Anders	son	CHECKED BY S Waterman, P.G	. TAT END OF DRILLING 1	1.0 ft / Elev	909.0	ft
NOTE	S					AFTER DRILLING			
		Ē							
O DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DI	ESCRIPTION		PID (ppm)	WELL DIAGRAM
	V		OL.	\lambda\	ը. <u>5TOPSOIL, black clay with silt and c</u>	rganics, moist	919.5_ر		
	PP 1		FILL		1.5 SAND, some Gravel and Clay, dark CLAY with SILT, gray-brown, moist		918.5	0.0, 0.0	
			CL					0.0	
5					5.0 FAT CLAY, trace silt, gray-brown, r	noist soft axidation mottling	915.0		
	PP 2		СН		TAT OLAT, trace sitt, gray-brown, t	noist, soft, oxidation mottling		0.0, 0.0	
10					9.8  SILTY SAND, poorly graded, very f	ine to medium grained, brown.	910.2		
-	<b> </b>		SM		SILTY SAND, poorly graded, very f eense, oxidation mottling 12.0 ▽	<b>3</b> , ,	908.0		
  15	PP 3		ML	#: \:\.\.	SILT with CLAY, gray-brown, very r	moist to wet, soft	905.0	0.0, 0.0	(11-14) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample
13					FAT CLAY, some Silt, gray, moist,	soft	905.0		SP-15 Stainless Steel Discrete Sampler
	PP 4		СН		19.0		901.0	0.0, 0.0	
20			SM SPG		19.8 SILTY SAND, poorly graded, very f 20.1 GRAVELLY SAND, poorly graded,		900.2 -\_899.9		
   25	PP 5		CH SP-		Moist, dense FAT CLAY, some Silt, plastic, gray  24.0  24.5 SAND with SILT, little gravel, gray,	moist, medium stiff	896.0 895.5	0.0, 0.0	
	Y		SM		SANDY CLAY, some Silt, gray, mo	ist, medium stiff			
WENCK.GDT 9/1	PP 6		sc		29.0 SAND, trace silt, poorly graded, me	edium grained, wet, dense	891.0	0.0, 0.0	
VTER GREMLIN.GPJ	PP 7		SP		35.0		QDE ()	0.0, 0.0	(29-32) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
× 35				100000	35.0		885.0		
GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20  0					E.O.B. @ 4	0.0 ' BGS.			(37-40) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete
B									Sampler

# WELL NUMBER GP-46 PAGE 1 OF 1



CLIEN	T Wate	er Gren	nlin		PROJECT NAM	Remedial Investigation		
PROJ	ECT NUI	MBER	2606	6-0016	PROJECT LOC	ATION 4400 Otter Lake R	load, W	/hite Bear Twp., MN 55110
DATE	STARTE	<b>D</b> _7/1	/ATION 920 ft H	HOLE SIZE 2.25				
DRILL	ING CO							
DRILL	ING ME	THOD .	Geo	probe v	vith 5' Dual-Tube	T OF DRILLING 12.0 ft / E	Elev 908	3.0 ft
LOGG	ED BY	Cory A	Anders	son	CHECKED BY S Waterman, P.G. TAT END	OF DRILLING 11.0 ft / Ele	v 909.0	ft
NOTE	s				AFTER D	RILLING		
O DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)	WELL DIAGRAM
	Y		OL	17.71.7. 17.71.7.7.7.7.7.7.7.7.7.7.7.7.7	TOPSOIL, black, moist 1.5	918.5		
  5	PP 1				SANDY CLAY, brown, moist, stiff 6.5' Soft	0.000	0.0, 0.0	
	PP 2		SC				0.0, 0.0	
10					\$ANDY CLAY, brown, wet, soft	910.0		(9-12) VOC.
   15	PP 3		SC		☑.5 Color change to gray, very moist	905.0	0.0, 0.0	(9-12) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
	7				SILTY SAND, trace clay, poorly graded, fine grained			
  - 20	PP 4		SM		dense	900.0	0.0, 0.0	(17-20) VOC, 1,4-Dioxane, Dissolved Lead Analytical
	Y		sc		CLAYEY SAND, gray, wet, dense			Sample SP-15 Stainless Steel Discrete
	PP				22.0	898.0	0.0,	Sampler
+ -	5		СН		FAT CLAY, plastic, gray, moist, stiff 24.0	896.0	0.0	
GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20  92	PP 6		sc		SANDY CLAY, trace gravel, gray, moist soft to med	ium stiff	0.0,	
30					30.0 SILTY SAND, poorly graded, very fine grained, trace	890.0 e gravel,		
32 - 32 - 35 - 35 - 35 - 35 - 35 - 35 -	PP 7		SM		red-brown, wet, dense	885.0	0.0, 0.0	(30-33) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
)  -  -	Y				SAND, trace silt, poorly graded, coarse grained, red dense			
17 BH / TP / WEL	PP 8		SP		40.0	880.0	0.0, 0.0	SP-15 Stainless Steel Discrete Sampler (38-40) VOC, 1.4-Dioxane,
NER/					E.O.B. @ 40.0 ' BGS.			Dissolved Lead Analytical Sample
<u>ც</u>								Gampie

## WELL NUMBER GP-47 PAGE 1 OF 1



GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20

CLIEN	IT Wate								
PROJ	ECT NUN	IBER	2606	5-0016		PROJECT LOCATION _4	1400 Otter Lake F	Road, W	/hite Bear Twp., MN 55110
DATE	STARTE	D _7/2	2/20		COMPLETED _7/2/20	GROUND ELEVATION _9	920 ft I	HOLE S	<b>IZE</b> 2.25
DRILL	ING CON	ITRAC	TOR	Midw	estern Drilling, LLC	GROUND WATER LEVEL	LS:		
DRILL	ING MET	HOD	Geor	orobe v	vith 5' Dual-Tube	$\overline{igspace}$ at start of Drii	LLING _15.0 ft / I	Elev 90	5.0 ft
LOGG	ED BY	Ben H	v 885.0	ft					
NOTE	s								
DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DE	SCRIPTION		PID (ppm)	WELL DIAGRAM
0	<i>t</i> s	RE							
   5	PP 1		FILL		0.5_ASPHALT Surface SILTY SAND, trace gravel, poorly gr loose 5.0	aded, fine grained, black,	919.5 dry,	0.0, 0.0	
	Y				SANDY CLAY, brown, moist, stiff				
 	PP 2				15-17' Wet			0.0, 0.0	
10	<u> </u>				16.5' Color change to gray				
   15	PP 3		SC		abla			0.0,	
 	PP 4				<u>v</u>			0.0,	
20	lack				19.5		900.5		
	Y		СН		FAT CLAY, gray, moist, stiff		898.0		
   25	PP 5		sc		CLAYEY SAND, fine grained, gray, r	noist, dense	895.0	0.0,	
	<b>Y</b>				SANDY CLAY, gray, moist, medium 31-33' Very moist to wet	stiff	090.0		
30	PP 6		SC		31-33 Very moist to wet			0.0,	
	PP 7				34.0		886.0	0.0,	
35					SAND, trace silt, poorly graded, med red-brown, wet, dense	lium to coarse grained,			
  	PP 8		SP					0.0,	SP-15 Stainless Steel Discrete Sampler
40					40.0 E.O.B. @ 40	.0 ' BGS.	880.0		(38-40) VOC, 1,4-Dioxane, Dissolved Lead
					@ 10	-			Analytical Sample

# WELL NUMBER GP-48 PAGE 1 OF 1



CLIEN	T Wate	er Gren	nlin			PROJECT NAME Remedial Investi	gation		
PROJI	ECT NUN	<b>MBER</b>	2606	6-0016		PROJECT LOCATION 4400 Otter	Lake Ro	oad, W	hite Bear Twp., MN 55110
DATE	STARTE	D _7/2	2/20		<b>COMPLETED</b> 7/2/20	GROUND ELEVATION 916 ft	н	OLE S	<b>IZE</b> 2.25
DRILL	ING CON	NTRAC	TOR	Midw	estern Drilling, LLC				
					with 5' Dual-Tube	$\frac{\sqrt{2}}{2}$ AT START OF DRILLING <u>8.0</u>			
	_	KJJ			CHECKED BY S Waterman, P.G	AT END OF DRILLING 11.4	ft / Elev	904.6	ft
NOTE	s					AFTER DRILLING			
о ОЕРТН (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DI	ESCRIPTION		PID (ppm)	WELL DIAGRAM
_	Y		PT	11/1/1	PEAT, clayey with organics, black,		915.0		
  - 5	PP 1		sc		SANDY CLAY, plastic, fine to medi stiff 5.0	um grained, tan, moist, medium	911.0	0.8, 0.0	
   10	PP 2		ML		SANDY SILT with CLAY, non-plasti to medium stiff, frequent fine sand a	c, fine grained, gray, moist, soft and silt lenses	911.0	0.0, 2.8, 1.8	(8.12),(00
  	PP 3				12.0 FAT CLAY, plastic, gray, very mois seams	t, soft, few silt and fine sand	904.0	0.8, 1.0	(8-12) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
15   20	PP 4		CH		19.0 <sub>20.0</sub> SANDY CLAY, some silt, moderate	plasticity, gray, moist to very	897.0 896.0	0.1, 2.7	
   25	PP 5				moist, soft to medium stiff SAND, poorly graded, fine to mediu gray, wet, loose, high dilatancy	m grained, some silt and clay,		1.7, 2.0	
30	PP 6		SP		30.0		886.0	3.0, 1.8	(25-27) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
	PP 7		ML		SANDY SILT with CLAY, fine to me medium stiff, few silt and fine sand  34.0  SANDY CLAY, plastic, fine to medi	seams	882.0	2.8, 1.9	(31-34) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample
35	PP 8		SC		coarse sand, gray, very moist, med  40.0  E.O.B. @ 4	ium stiff	876.0	1.4, 1.1	SP-15 Stainless Steel Discrete Sampler
i <b>l</b>									

## WELL NUMBER GP-49 PAGE 1 OF 2



CLIE	NT Wate	r Gren	nlin			PROJECT NAME Remedial Inv	estigation			
PROJ	ECT NUM	/IBER	2606	6-0016		PROJECT LOCATION 4400 Ot	ter Lake R	oad, W	/hite Bear Twp., MN 55110	
DATE	STARTE	<b>D</b> _7/6	6/20		COMPLETED 7/7/20	GROUND ELEVATION 920 ft HOLE SIZE 2.25				
DRILI	ING CON	ITRAC	TOR	Midw	restern Drilling, LLC	GROUND WATER LEVELS:				
DRILI	ING MET	HOD	Geor	orobe v	with 5' Macro-Core	$\overline{igsigma}$ at start of drilling	8.0 ft / Ele	ev 912.	0 ft	
LOGG	SED BY _	KJJ			CHECKED BY S Waterman, P.G.	▼ AT END OF DRILLING 5.	0 ft / Elev	915.0 f	t	
NOTE	s					AFTER DRILLING				
O (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DE	SCRIPTION		PID (ppm)	WELL DIAGRAM	
			OL	11/// 1////	0.5—TOPSOIL, clayey, black, moist		919.5			
   5	GMC 1		SC		SANDY LEAN CLAY, plastic, fine gradium stiff, some oxidation mottle:  5-10' Sand and silt content increasir moist, soft to medium stiff	S		0.0, 0.0		
-			SC							
	GMC 2				Ā			0.0, 0.0		
10			L		10.0		910.0			
	GMC		SP		SAND, poorly graded, fine to mediul red-brown, wet, slightly dense 13.0		907.0	0.0, 0.0	(10-12) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample	
ļ .	K		sc		SANDY CLAY, plastic, wet, very sof	t, some silt and fine sand seams			SP-15 Stainless Steel Discrete Sampler	
15	KI				15.0	L highly plantic dark gray yen	905.0			
	GMC 4		СН		FAT CLAY, some silt, little fine sand moist, medium stiff	, nigniy piastic, dark gray, very	004.0	0.0, 0.1	(17-20) VOC.	
20			SC		19.0 <sub>20.0</sub> SANDY CLAY, gray, very moist, me	dium stiff, frequent silt and sand	901.0 900.0		1,4-Dioxane, Dissolved Lead Analytical	
 	GMC 5		СН		lenses FAT CLAY, some silt and fine sand, medium stiff, few sand lenses  23.0 SANDY CLAY, little silt, trace grave	highly plastic, gray, very moist,	897.0	0.1, 0.0	Sample SP-15 Stainless Steel Discrete Sampler	
g			sc			, gray, very moist, soit				
25			ML		SANDY SILT, little clay, non-plastic, 27.0	gray, very moist, very soft	895.0 893.0			
	GMC 6		sc		SANDY CLAY, some silt, highly plas	stic, gray, moist, stiff		0.0, 0.1		
25 25 30 MENCATE HAVE EX OXEMENTAL BH / 1/1/ MENCATE HAVE BH	GMC 7		SC		SANDY CLAY, plastic, fine to mediu very moist, soft to medium stiff, few		890.0	0.1, 0.0		
35	GMC 8		SP	<i>(</i>	SAND, trace silt, poorly graded, fine wet, dense	to medium grained, red-brown,	885.0	0.0,		
<del>5</del> 40	KL				40.0		880.0			

### **WELL NUMBER GP-49**

PAGE 2 OF 2



GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20

WENCK **CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 SAMPLE RECOVERY (in) SAMPLE TYPE NUMBER MATERIAL DESCRIPTION GRAPHIC LOG PID (ppm) WELL DEPTH (ft) U.S.C.S. DIAGRAM 40 40-55' Liner jam due to heaving sands, low recovery. Switch to Macro Core sampler 40-75' 0.0, 0.0 **GMC** SAND, poorly graded, fine to medium grained, red-brown, wet, very dense 45 -(45-47) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler GMC SP 1.6 50 **GMC** 8.0 55 865.0 55.0 SAND, poorly graded, medium grained, trace silt and gravel, gray-brown, wet, dense 0.0, 0.0 GMC 12 Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete 60 Sampler SP 65 0.0, 0.0 **GMC** 13 70 850.0 GRAVELLY SAND, poorly graded, coarse grained, trace silt, gray-brown, wet, dense 0 : ( **GMC** 0.1, SP Ø 14 0.1 0 (73-75) VOC. 1,4-Dioxane, Dissolved Lead 75 845.0 Analytical Sample SP-15 Stainless E.O.B. @ 75.0 ' BGS. Steel Discrete Sampler GMC 0.0, 15 0.0

# WELL NUMBER GP-50 PAGE 1 OF 2



CLIEN	IT Wate	r Gren	nlin			PROJECT NAME Remedial Investi	gation		
PROJ	ECT NUN	/IBER	2606	-0016		PROJECT LOCATION 4400 Otter I	Lake R	oad, W	hite Bear Twp., MN 55110
					COMPLETED _7/9/20		⊦	IOLE S	IZE 2.25
					estern Drilling, LLC				
					vith 5' Macro-Core				
					CHECKED BY S Waterman, P.G				
NOTE						AFTER DRILLING			
O DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DE	ESCRIPTION		PID (ppm)	WELL DIAGRAM
	GMC 1		FILL		CLAYEY SAND, fine grained, trace		913.0	0.0	
10	GMC 2		PT		PEAT, clayey with organics, black, 7.0  SANDY CLAY, brown, moist, stiff to sand lenses  14' Color change to gray		911.0	0.0, 0.0	
15	GMC 3		SC		Σ			0.0, 0.0	
20	GMC 4				20.0 FAT CLAY, gray, moist, soft		898.0	0.0, 0.0	(15-18) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler
25	GMC 5		СН					0.0, 0.0	
30	GMC 6		sc		SANDY CLAY, gray, wet, stiff  30.0  No Recovery		891.0 888.0	0.0, 0.0	
35	X 1			7777	35.0		883.0		
40	GMC 7		SC		SANDY CLAY, gray, wet, soft 38' Moist 40-45' Very moist			0.0, 0.0	(35-38) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete
   - 45	GMC 8				Heaving sands @ 45' switch to Mac	cro Core 50' to 100'	873.0	0.0, 0.0	Sampler
  	GMC 9		SP		SAND, poorly graded, fine to mediu red-brown, wet, dense	ım grained, trace gravel,		0.0, 0.0	(45-47) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete
50	$\forall$		SP		50.0 SAND, poorly graded, very fine grai	ned, trace silt, wet, dense	868.0		Sampler

### **WELL NUMBER GP-50**

PAGE 2 OF 2



GENERAL BH / TP / WELL WATER GREMLIN.GPJ WENCK.GDT 9/14/20

**CLIENT** Water Gremlin PROJECT NAME Remedial Investigation PROJECT NUMBER 2606-0016 PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., MN 55110 SAMPLE TYPE NUMBER SAMPLE RECOVERY (in) MATERIAL DESCRIPTION GRAPHIC LOG PID (ppm) WELL U.S.C.S. DEPTH (ft) **DIAGRAM** SAND, poorly graded, very fine grained, trace silt, wet, dense GMC 0.0. (continued) SP 0.0 10 55 863.0 SAND, poorly graded, coarse grained, trace silt, brown, wet, dense **GMC** 0.0, 0.0 11 60 Dissolved Lead Analytical **GMC** 0.0, SP Steel Discrete 0.0 Sampler 12 65 GMC 0.0, 0.0 13 70 848.0 SAND with SILT, poorly graded, trace gravel, gray, wet, dense SP. **GMC** 0.0, SM 0.0 14 844.0 GRAVELLY SAND, trace silt, wet, dense 75 GP 842.5 SANDY SILT, very fine grained, gray, wet, very soft SM **GMC** 840.5 0.0 15 GRAVELLY SAND, trace silt, moderate grading, wet, dense 6 0° 80 0 GP Sample SP-15 Stainless GMC Po C 0.0, Steel Discrete 16 85 833.0 SAND, poorly graded, coarse grained, trace silt and gravel, brown, wet, medium dense GMC 0.0, 0.0 SP 90 **GMC** 0.0 825.0 18 GRAVELLY SAND, some cobbles, brown, wet, loose GP 95 823.0 SAND, poorly graded, coarse grained, trace gravel and cobbles, gray-brown, wet, loose **GMC** SP 0.0 19 -(98-100) VOC, 1,4-Dioxane, Dissolved Lead Analytical Sample SP-15 Stainless Steel Discrete Sampler 100 100.0 818.0 E.O.B. @ 100.0 ' BGS. Sampler

## BORING NUMBER SB-18 PAGE 1 OF 1

V
WENCK

						PROJECT NAME Remedial Investigation					
		MBER <u>2606-0016</u>		4DL E		PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp., M	N 55′	110			
		D 7/7/20				7/7/20					
		HOD Geoprobe with				1					
NOTE	s					AFTER DRILLING					
	111		<u> </u>								
O DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)			
					P 4 4	CONCRETE SURFACE					
2.0	PP 1	(2-4') VOC & 1,4-Dioxane Analytical Sample		FILL		SILTY SAND, poorly graded, fine to medium grained, trace gravel, dark brown, slightly moist, very dense		3.1, 0.1			
GENERAL BH / TP / WELL WATER GREMLIN GPJ WENCK GDT 9/14/20  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PP 2			SM		□ 10.0 E.O.B. @ 10.0 ' BGS.	:	2.2, 2.0			
GENERAL BH / TP / WELL											

# BORING NUMBER SB-19 PAGE 1 OF 1

N. T.	
WENCK	

VVL		C.										
CLIEN	T Wate	r Gremlin					PROJECT NAME Rem	nedial Invest	igation			
PROJE	CT NUM	IBER <u>2606-0016</u>					PROJECT LOCATION	4400 Otter	Lake Road,	, White Bear Twp	., MN 5	5110
DATE S	STARTE	<b>D</b> _7/7/20	CON	MPLE.	TED _	7/7/20	GROUND ELEVATION	930 ft	HOLE	<b>E SIZE</b> 2.25		
DRILLI	NG CON	ITRACTOR Midwest	ern Dril	lling, L	LC	_	GROUND WATER LEVE					
DRILLI	NG MET	HOD Geoprobe with	5' Dua	al-Tub	е							
LOGGE	ED BY _	KJJ	CHE	CKE	D BY _	S Waterman, P.G.	AT END OF DRIL	LING				
NOTES	S						AFTER DRILLING	} <u></u>				
O DEPTH	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG		MATERIAL D	ESCRIPTIC	М			PID (ppm)
					P 6 4	CONCRETE S	SURFACE				929.4	
	PP 1			FILL		black, moist, v	poorly graded, fine grai very dense, traces of co	nec, trace y	s, slight org	anic odor		0.0,
  	PP 2	(8-10') VOC & 1,4-Dioxane Analytical Sample				9.0 SILTY SAND, 9-10' Slight on	poorly graded, fine to m	nedium grair	ned, gray, m	noist, dense	921.0	0.0,
	PP 3			SM		12' Wet					915.0	0.0,
13					12,12,143	15.0	E.O.B. @ 1	5.0 ' BGS.			915.0	

## BORING NUMBER SB-20 PAGE 1 OF 1

V
WENCK

PROJECT NUMBER 2606-2016							PROJECT NAME Remedial Investigation	<b>A</b> . 5	
REMARKS UNIT OF THE PROPERTY O	DATE DRILL DRILL	STARTE ING CON	D 7/7/20 ITRACTOR Midwester HOD Geoprobe with	ern Dril 5' Dua	ling, L	LC e	7/7/20 GROUND ELEVATION 930 ft HOLE SIZE 2.25  GROUND WATER LEVELS:		
CONCRETE SURFACE  1.4-Dioxane Analytical Sample  PP 1  4.0  SILTY SAND, poorly graded, fine to medium grained, light brown, slightly moist, dense  929.4  FILL  4.0  SILTY SAND, poorly grade, fine to medium grained, light brown, moist, dense  926.0  926.0  SILTY SAND, poorly grade, fine to medium grained, light brown, moist, dense  9-10' Very moist to wet	NOTE	NOTES					AFTER DRILLING		
CONCRETE SURFACE  1,4-Dioxane Analytical Sample  FILL  4.0  SILTY SAND, poorly graded, fine to medium grained, light brown, slightly moist, dense  929.4  FILL  4.0  SILTY SAND, poorly grade, fine to medium grained, light brown, moist, dense  9-10' Very moist to wet		SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)
	2.0		1,4-Dioxane		FILL		0.6  SILTY SAND, poorly graded, fine to medium grained, light brown, slightly moist, dense  4.0  SILTY SAND, poorly grade, fine to medium grained, light brown, moist, dense		
	K GKEMLIN GPJ WENCK, GDJ 9/14/20	PP 2			SM		10.0	20.0	0.0,

# BORING NUMBER SB-21 PAGE 1 OF 1

V
WENCK

		er Gremlin MBER 2606-0016				PROJECT LOCATION 4400 Otter Lake Road, White Bear Two	NANI 5	 55110
DATE DRILL DRILL	STARTE ING CON	TRACTOR Midwester  HOD Geoprobe with	ern Dril 5' Dua	lling, L al-Tube	LC e	GROUND WATER LEVELS:		
		KJJ						
O DEPTH	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)
0.0  2.0  4.0	PP 1	(3-5') VOC & 1,4-Dioxane Analytical Sample		FILL		CONCRETE SURFACE  0.6  SILTY SAND, poorly graded, fine to medium grained, light brown, slightly moist, dense	929.4	0.0,
GENERAL BH / IF / WELL WATER ONE   0.09   0.00   0.	PP 2			SM		SILTY SAND, poorly grade, fine to medium grained, light brown, moist, dense  7-10' Very moist to wet	920.0	0.0,
ENERAL DIT								

## BORING NUMBER SB-22 PAGE 1 OF 1

V
WENCK

1						PROJECT NAME Remedial Investigation		
		MBER _2606-0016		4D:	TED	PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp	, MN 5	5110
		D 7/7/20				7/7/20 GROUND ELEVATION 930 ft HOLE SIZE 2.25 GROUND WATER LEVELS:		
		HOD _Geoprobe with						
						S Waterman, P.G. AT END OF DRILLING		
NOTE	s					AFTER DRILLING		
o DEPTH o (ft)	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		PID (ppm)
0.0  2.0  4.0	PP 1	(2-4') VOC & 1,4-Dioxane Analytical Sample		FILL		CONCRETE SURFACE  0.6  SILTY SAND, poorly graded, fine to medium grained, light brown, slightly moist, dense  3.0  SILTY SAND, poorly grade, fine to medium grained, red-brown, moist, dense  7-10' Very moist to wet	929.4	0.0,
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	PP 2			SM		□ 10.0 E.O.B. @ 10.0 ' BGS.	920.0	0.0,

## BORING NUMBER SB-23 PAGE 1 OF 1

A
WENCK

DATE S	STARTE						PROJECT LOCATION 4400 Otter Lake Road, White Bear Twp.,  GROUND ELEVATION 930 ft HOLE SIZE 1.25	MN 5	<u>5110</u>
DRILLI	NG MET	TRACTOR Midwestern Dri HOD Geoprobe Manual Sli KJJ CHI	de Ha	mmer			GROUND WATER LEVELS:  Very AT START OF DRILLING 6.0 ft / Elev 924.0 ft  AT END OF DRILLING		
		<u> </u>					AFTER DRILLING		
o DEPTH O (ft)	SAMPLE TYPE NUMBER	REMARKS	SAMPLE RECOVERY (in)	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		PID (ppm)
	m GS		24	FILL		0.6 SILTY S	SAND, poorly graded, fine to medium grained, dark brown, moist, dense	929.4	0.0
	on GS	(2-4') VOC & 1,4-Dioxane Analytical Sample	24	SM		SILTY S moist, r	SAND, poorly graded, fine to medium grained, light brown, nedium dense, some oxidation mottling y moist to wet	320.0	0.0
6.0	on GS		24	Civi		6.0 ▽		924.0	0.0
1	m GS		24			_	E.O.B. @ 6.0 ' BGS.		0.0
-									

### Appendix B

Vapor Sampling Form

W As	ENCK	Subsial	b Vapor	Purge 2 volumes (min.) to 5 volumes (recommended)		
AS	SOCIATES		ng Form			
Responsive partner. Excep	tional outcomes.	•	· · · · · · · · · · · · · · · · · · ·	Tubing Diam. (ID)	Volume (ml) / foot	
Project Name: Water Gremli	n			.06 (1/16) inch	0.56	
Project Number: B002606-1	9-017			.12 (1/8) inch	2.22	
Project Location: South Car	npus - 4316 Otter La	ke Road, White Bear	Township, MN	.19 (3/16) inch	5.58	
Field Technician: Ben Holco	omb			.25 (1/4) inch	9.65	
Contractor: Wenck				.31 (3/8) inch	14.84	
Sample ID	SS-1	SS-2	SS-3	SS-4		
Location Leak Test	Research & Development	Research & Development	Research & Development	Research & Development		
Sampling Method, i.e. vapor pin	Vapor Pin	Vapor Pin	Vapor Pin	Vapor Pin		
Temporary or permanent?	Temporary	Temporary	Temporary	Temporary		
Flow Restrictor Set Time	5-minutes	5-minutes	5-minutes	5-minutes		
Flow Restrictor Number	2392	2815	2362	1217		
Summa Canister Number	3309	3726	882	3730		
Summa Canister Size	1-liter	1-liter	1-liter	1-liter		
Purge Method	Syringe	Syringe	Syringe	Syringe		
Tubing Length (ft.)	Pace 3-way Sampler ~5 mL	Pace 3-way Sampler ~5 mL	Pace 3-way Sampler ~5 mL	Pace 3-way Sampler ~5 mL		
Tubing Volume (ml)	~ 5 mL	~ 5 mL	~ 5 mL	~ 5 mL		
Volume Purged (ml)	300 mL	301 mL	302 mL	303 mL		
Sample Date	7/10/2020	7/10/2020	7/10/2020	7/10/2020		
Sample Collection Time	10:41 - 10:47	10:50 - 10:57	10:58 - 11:04	11:43 - 11:51		
Can. Pressure Start (inHg)	-28	-28	-30	-29		
Can. Pressure end (inHg)	-2	-2	-3	-2		
PID Reading (ppm)	0	0.2	0.1	0.1		
Additional Notes						

### Appendix C

Residential Well Standard Operating Procedure

Title:	Residential Well Sampling
Date:	July 2020

#### 1.1 PURPOSE

This Standard Operating Procedure (SOP) provides detail for collecting residential groundwater samples near the Water Gremlin Company (Water Gremlin) facility located at 4400 Otter Lake Road, White Bear Lake Township, Ramsey County, Minnesota (the Site). Per the results of the April 3, 2020 and recommendations made by the Minnesota Pollution Control Agency (MPCA), 95 residents located south of the facility have been asked to participate in water quality testing. As a result, 47 residents have verified the presence of a well on their property and requested water testing.

Laboratory samples for 1,4-dioxane analysis will be submitted to Pace Analytical Services (Pace) for analysis. 1,4-dioxane analysis will be conducted using EPA Method 522.

Proper notification to homeowners will be made prior to sample collection by project personnel. During sampling care will be taken to collect samples in a respectful and diligent manner. All samples will be collected prior to any type of ancillary water treatment system located within the residence.

Analytical results will be used to fulfill the following data quality objectives (DQOs) and/or requirements for the Site:

- ▲ Evaluate risk to human health and the environment.
- ▲ Assess sources and extent of contamination to support site management decisions.

Additional DQOs may be added in the future including as necessary.

#### 1.2 BACKGROUND

Beginning in 1997, a series of soil and groundwater investigations were conducted in the vicinity of the Water Gremlin North Campus building. Multiple soil borings were advanced through the concrete floor inside the building as well as outside the building and six groundwater monitoring wells were completed at the Site.

Soil borings and monitoring wells completed under the North Campus building and along the south side of the North Campus building showed elevated concentrations of the chlorinated solvents TCE and 1,1,1-trichloroethane (1,1,1-TCA), which were used as solvents in the coating process at the time. Annual groundwater monitoring completed between 2000 and 2004 identified a southerly flow direction across the Site. Subsurface investigations identified a contiguous silty clay to clay confining unit across the Site that impeded vertical groundwater flow and confined known groundwater impacts to the water table aquifer at the Site.

Changes in the concentrations of chlorinated VOC concentrations in groundwater between 1997 and 2004 showed that natural biodegradation of these compounds was occurring. Concentrations of VOCs in the groundwater at the Site had generally decreased and were below their respective Minnesota Department of Health (MDH) Health Risk Limits (HRLs) during the last groundwater sampling event completed in April 2004. On May 14, 2004, the MPCA VIC staff issued a NFA letter to Water Gremlin for the identified release of volatile organic compounds (VOCs) to groundwater at the Site.

In 2019, a multi-phased remedial investigation began to further evaluate potential contamination to soil, soil vapor, sediment, surface water and groundwater with regulatory oversight of the MPCA. Investigations activities are ongoing and to date have included collection of soil, groundwater, surface water, sediment and vapor samples.

The June 2019 phase of the remedial investigation identified low concentrations of TCE in the groundwater primarily beneath and to the south of the North Campus building. In April 2019, the MDH sampled 13 private wells in the vicinity of the Water Gremlin facility for the presence of VOCs. No VOCs were identified in the sampled wells.

The most recent phase of the remedial investigation completed between August and December 2019 identified 1,4-dioxane in the on-site groundwater above the MDH HRL of 1.0 microgram per liter (ug/L). Based on the detected concentrations of 1,4-dioxane identified in the groundwater at the Site, the MDH sampled seven (7) private wells near the Water Gremlin facility for the presence of 1,4-dioxane in January 2020. The MDH private well sampling identified the presence of 1,4-dioxane in two (2) of the seven (7) wells at concentrations slightly above the laboratory reporting limit but below the MDH HRL.

In an email dated February 21, 2020 the MPCA requested Water Gremlin to complete a well receptor survey of drinking water wells within a one-mile radius of the Water Gremlin facility due to the low level detections of 1,4-dioxane in private domestic wells in the area, and the presence of 1,4-dioxane in the groundwater above the established HRL at the Water Gremlin facility.

#### 1.3 EQUIPMENT

- ▲ Appropriate health and safety gear (i.e., gloves, etc.)
- ▲ Hand tools, such as a wrench to remove filter systems or aerators (if necessary).
- ▲ Appropriate sample containers, trip blanks, and labels. Shallow container (for restricted spaces) for catching discharged water.
- ▲ Paper towels.
- Bound field logbook and appropriate field forms.
- Sample cooler with loose ice.
- Re-sealable plastic bags to protect labels and store samples within loose ice in cooler.
- Decontamination supplies (non-dedicated equipment will be rinsed with purge water
- Chain of Custody forms.

#### 1.4 PROCEDURES FOR SAMPLE PREPERATION

- A Personnel must don proper personal protective equipment and disposable nitrile gloves. New gloves will be worn at each location when collecting samples.
- ▲ If the resident has any type of water treatment, such as a water filter, conditioner, radon system, UV system, or pH adjuster, the sample will be collected prior to entry into this apparatus.
- When sampling from a faucet equipped with an aerator, the aerator will be removed.
- ▲ To the extent feasible, samples will be collected from a port or spigot located along the shortest distance outdoor plumbing "run" from the well holding tank. An outside spigot is preferable to an inside faucet, for convenience.

- Photograph sample location.
- ▲ Turn on the cold-water faucet or spigot at a high rate of flow.
- A Run the tap for 15-20 minutes (a minimum of 15 minutes) to allow for water to be purged from the pressure tank and cause the well pump to activate. This will allow for the collection of a sample representative of the aquifer in which the well has been constructed.
- ▲ If samples are to be collected from an outdoor spigot, a garden hose may be used to re-direct water away from the residence. The hose will be disconnected prior to sample collection. Care will be taken to remove as any spigot related fittings as conditions warrant.
- ▲ If a sample is to be collected from the basement holding tank, first purge the well using an "upstream" faucet or spigot for the required 15 minutes to purge supply lines prior to sample collection. Then purge water from the tap at the tank itself into an appropriate container (use a hose, should the tap be located near the ground) to flush the faucet and connections of any debris.
- ▲ Care will be taken to ensure that the sampling port is clean (e.g., no grease, or dirt, etc.) and no possible source of cross-contamination are nearby (e.g., fuel cans, household cleaners, etc.

#### 1.5 SAMPLE COLLECTION PROCEDURES

- After the initial purging period, reduce the flow, and collect samples in appropriate pre-preserved laboratory supplied sample containers. Reduce the flow rate at the tap such that the sample vials/bottles may be filled with minimum disturbance / turbulence. During sample collection, allow sample to flow down the inside of containers to minimize disturbance.
- ▲ In this order, collect a sufficient volume of water to fill the sample containers for the following analyses:
  - o 1,4 Dioxane (Low level detection Method 522 (0.2 ug/L RDL)).
  - Matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a rate of one MS/MSD set per 20 samples collected. MS/MSD samples shall be collected by filling a separate container for analysis immediately following the actual field sample collection.
  - Blind duplicate samples will be collected at a rate of one blind samples per 10 samples collected.
- ▲ Place labeled sample containers and QA/QC samples including the MS/MSD and one trip blank per sample cooler into a sample cooler with ice in re-sealable plastic bags. (Temperature should be a maximum of 4°C +/- 2°C upon laboratory receipt of samples).
- ▲ Record samples (e.g., sample ID, locations, etc.) in the field logbook and on sample field sheets.

- ▲ Complete chain of custody and include in sample shipment. Deliver samples to the laboratory at the end of each work day if possible.
- ▲ Once samples are collected, restore all plumbing to its original condition and discharge purged water generated during sample collection to the ground.

#### 1.6 QAULITY ASSURANCE

QA/QC procedures are outlined in the Sampling procedures discussed above. Trip blanks and spikes have been incorporated to assess the potential for sampling, shipping, sample matrix, and laboratory impacts on data quality.

#### 1.7 RECORDS AND DOCUMENTATION

A description of observations, any difficulties, all sampling activities, etc. will be documented in the field-book. Sample labels and Chain of Custody form will include the project name, unique sample IDs, time and date of sample collection, name of sampler and laboratory analysis and methods requested, at a minimum. All field notes are to be scanned and archived on the company server weekly.

Digital photography will be conducted during the field activities. Digital photography will be numbered and documented on the field sample forms to include a description of the scene, site area, date, and time. Field staff will review the photographs and compare them to the photographic documentation to confirm the written information and photographs match on a daily basis.

#### 1.8 DOCUMENTATION/DATA MANAGEMENT AND RETENTION

Field documentation from logbook sets, digital photography, email correspondence, and Chain of Custody forms will comprise the bulk of the field documentation associated with the residential sampling activities. All field notes are to be scanned and archived on the company server weekly.

The analytical laboratory will provide data as final analytical reports using a pdf format. The Wenck QA Manager and Risk Assessor are charged with tracking the reporting of analytical data and sample coordinates and tracks the external analytical data validation. The Wenck QA Manager and Risk Assessor will also track and manage the updating and storage of all analytical data tables generated during the preparation of the RI Report.

Digital data files are stored on a network drive at Wenck's Maple Plain, Minnesota office. The network servers are backed up daily, then replicated to the Cloud for indefinite storage. Data stored electronically by Wenck will be retrievable from the Cloud indefinitely.

Level 2 Laboratory Analytical Reports and Chain of Custody Documentation





July 07, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

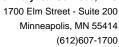
Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Osp

**Enclosures** 

cc: Aaron Benker, Wenck Associates Ben Holcomb, Wenck Associates, Inc. Kelly Jaworski, Wenck Associates Inc







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 868
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Maryland Certification #: 322

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081

New York Certification #: 11647 North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

New Jersey Certification #: MN002

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: WN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

#### **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122 Alabama Certification #: 40660 Alaska Certification 17-026

Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008

Indiana Certification #: C-TN-01

Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: Al30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002

Maryland Certification #: 324

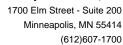
Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.01 A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789





#### **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10522729001	GP-34 (47-50)	Water	06/23/20 15:20	06/24/20 14:50
10522729002	GP-34 (75-78)	Water	06/24/20 08:00	06/24/20 14:50
10522729003	Rinsate-06232020	Water	06/23/20 16:50	06/24/20 14:50
10522729004	GP-34 (97-100)	Water	06/24/20 09:30	06/24/20 14:50
10522729005	Trip Blank	Water	06/23/20 00:00	06/24/20 14:50

(612)607-1700



#### **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10522729001	GP-34 (47-50)	EPA 6010D	DM	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	ACG	70	PAN
10522729002	GP-34 (75-78)	EPA 6010D	DM	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	ACG	70	PAN
10522729003	Rinsate-06232020	EPA 6010D	DM	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	ACG	70	PAN
10522729004	GP-34 (97-100)	EPA 6010D	DM	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	ACG	70	PAN
10522729005	Trip Blank	EPA 8260D	JHH	70	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin SRI

Date: 07/07/2020 05:02 PM

Sample: GP-34 (47-50)	Lab ID: 1052	22729001	Collected: 06/23/2	20 15:20	Received: 06	6/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	ethod: E	PA 3010A	_		
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 19:30	0 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytical		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	0.69	ug/L	0.28	1	06/25/20 17:23	06/29/20 01:08	8 123-91-1	
1,4-Dioxane-d8 (S)	42	%.	30-125	1	06/25/20 17:23	06/29/20 01:0	8	
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	ethod: 82	260D			
Acetone	ND	ug/L	50.0	1		06/30/20 20:10		
Allyl chloride	ND	ug/L	5.00	1		06/30/20 20:10		
Benzene	ND	ug/L	1.00	1	06/30/20 20:10			
Bromobenzene	ND	ug/L	1.00	1		06/30/20 20:10		
Bromochloromethane	ND	ug/L	1.00	1		06/30/20 20:10		
romodichloromethane	ND	ug/L	1.00	1		06/30/20 20:10		
romoform	ND	ug/L	1.00	1		06/30/20 20:10		
Bromomethane	ND	ug/L	5.00	1		06/30/20 20:10		
-Butylbenzene	ND	ug/L	1.00	1		06/30/20 20:10		
ec-Butylbenzene	ND	ug/L	1.00	1		06/30/20 20:10		
ert-Butylbenzene	ND	ug/L	1.00	1		06/30/20 20:10		
Carbon tetrachloride	ND	ug/L	1.00	1		06/30/20 20:10		
Chlorobenzene	ND	ug/L	1.00	1		06/30/20 20:10		
Dibromochloromethane	ND	ug/L	1.00	1		06/30/20 20:10		
Chloroethane	ND	ug/L	5.00	1		06/30/20 20:10		
Chloroform	ND	ug/L	5.00	1		06/30/20 20:10		
Chloromethane	ND	ug/L	2.50	1		06/30/20 20:10		
2-Chlorotoluene	ND	ug/L	1.00	1		06/30/20 20:10		
-Chlorotoluene	ND	ug/L	1.00	1		06/30/20 20:10		
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		06/30/20 20:10 06/30/20 20:10		
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1				
Dibromomethane	ND	ug/L	1.00	1	06/30/20 20:10			
,2-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:10			
,3-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:10		
,4-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:10 06/30/20 20:10		
Dichlorodifluoromethane Dichlorofluoromethane	ND	ug/L	5.00	1		06/30/20 20:10		
	ND	ug/L	5.00	1				
,1-Dichloroethane	ND	ug/L	1.00	1		06/30/20 20:10		
,2-Dichloroethane	ND	ug/L	1.00	1		06/30/20 20:10		
,1-Dichloroethene	ND ND	ug/L	1.00	1		06/30/20 20:10		
sis-1,2-Dichloroethene	ND ND	ug/L	1.00	1		06/30/20 20:10 06/30/20 20:10		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1				
,2-Dichloropropane	ND	ug/L	1.00	1		06/30/20 20:10		
I,1-Dichloropropene	ND	ug/L	1.00	1		06/30/20 20:10		
1,3-Dichloropropane	ND	ug/L	1.00	1		06/30/20 20:10		
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	U 10061-01-5	

(612)607-1700



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Sample: GP-34 (47-50)	Lab ID: 105	22729001	Collected: 06/23	/20 15:20	Received: 06	6/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation N	lethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 20:10	06/30/20 20:10	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1		06/30/20 20:10		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 20:10	06/30/20 20:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	1634-04-4	
laphthalene	ND	ug/L	5.00	1		06/30/20 20:10		
-Propylbenzene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	79-34-5	CC
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	76-13-1	
etrachloroethene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	) 127-18-4	
- etrahydrofuran	ND	ug/L	5.00	1	06/30/20 20:10	06/30/20 20:10	109-99-9	
oluene	ND	ug/L	1.00	1		06/30/20 20:10		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	87-61-6	
,2,4-Trichlorobenzene	ND	ug/L	1.00			06/30/20 20:10		
,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 20:10	06/30/20 20:10	79-00-5	
richloroethene	ND	ug/L	1.00	1		06/30/20 20:10		L0
richlorofluoromethane	ND	ug/L	5.00			06/30/20 20:10		
,2,3-Trichloropropane	ND	ug/L	2.50	1		06/30/20 20:10		
,2,4-Trimethylbenzene	ND	ug/L	1.00			06/30/20 20:10		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		06/30/20 20:10		
'inyl chloride	ND	ug/L	1.00			06/30/20 20:10		
(ylene (Total)	ND	ug/L	3.00			06/30/20 20:10		
Surrogates	. 15	~ <del>_</del> _	0.00	•	22.00,20 20.10	22,00,20 20.10		
oluene-d8 (S)	108	%	80.0-120	1	06/30/20 20:10	06/30/20 20:10	2037-26-5	
-Bromofluorobenzene (S)	95.7	%	77.0-126	1	06/30/20 20:10	06/30/20 20:10	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70.0-130	1		06/30/20 20:10		



Project: 2606-0017 Water Gremlin SRI

Date: 07/07/2020 05:02 PM

Sample: GP-34 (75-78)	Lab ID: 1052	22729002	Collected: 06/24/2	00:80 02	Received: 06	5/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	)10D Preparation Me	ethod: E	PA 3010A			
,	Pace Analytical							
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 19:33	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytical		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	0.67	ug/L	0.36	1	06/25/20 17:23	06/29/20 01:28	3 123-91-1	
1,4-Dioxane-d8 (S)	32	%.	30-125	1	06/25/20 17:23	06/29/20 01:28	3	
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	ethod: 82	260D			
A			50.0	4	00/20/20 20-20	00/20/20 20-20	0.07.04.4	
Acetone	ND	ug/L	50.0	1		06/30/20 20:30		
Allyl chloride Benzene	ND ND	ug/L	5.00	1		06/30/20 20:30		
Bromobenzene	ND ND	ug/L	1.00	1	06/30/20 20:30			
Bromochloromethane	ND ND	ug/L	1.00	1 1		06/30/20 20:30 06/30/20 20:30		
Bromodichloromethane	ND ND	ug/L ug/L	1.00 1.00	1		06/30/20 20:30		
Bromoform	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
Bromomethane	ND ND	-	5.00	1		06/30/20 20:30		
	ND ND	ug/L		1		06/30/20 20:30		
n-Butylbenzene	ND ND	ug/L	1.00	1		06/30/20 20:30		
ec-Butylbenzene ert-Butylbenzene	ND ND	ug/L ug/L	1.00 1.00	1		06/30/20 20:30		
Carbon tetrachloride	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
Chlorobenzene	ND ND	ug/L ug/L	1.00	1	06/30/20 20:30			
Dibromochloromethane	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
Chloroethane	ND ND	ug/L ug/L	5.00	1		06/30/20 20:30		
Chloroform	ND ND	ug/L ug/L	5.00	1		06/30/20 20:30		
Chloromethane	ND ND	ug/L ug/L	2.50	1		06/30/20 20:30		
2-Chlorotoluene	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
I-Chlorotoluene	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		06/30/20 20:30		
,2-Dibromoethane (EDB)	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		
Dibromomethane	ND	ug/L	1.00	1	06/30/20 20:30			
,2-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:30			
1,3-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:30		
1,4-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:30		
Dichlorodifluoromethane	ND	ug/L	5.00	1		06/30/20 20:30		
Dichlorofluoromethane	ND	ug/L	5.00	1		06/30/20 20:30		
I,1-Dichloroethane	ND	ug/L	1.00	1		06/30/20 20:30		
,2-Dichloroethane	ND	ug/L	1.00	1		06/30/20 20:30		
1,1-Dichloroethene	ND	ug/L	1.00	1		06/30/20 20:30		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		06/30/20 20:30		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		06/30/20 20:30		
1,2-Dichloropropane	ND	ug/L	1.00	1		06/30/20 20:30		
1,1-Dichloropropene	ND	ug/L	1.00	1		06/30/20 20:30		
1,3-Dichloropropane	ND	ug/L	1.00	1		06/30/20 20:30		
cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1		06/30/20 20:30		

(612)607-1700



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Sample: GP-34 (75-78)	Lab ID: 105	22729002	Collected: 06/24/2	20 08:00	Received: 06	5/24/20 14:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
, ,	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1		06/30/20 20:30		
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		06/30/20 20:30		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	98-82-8	
-Isopropyltoluene	ND	ug/L	1.00	1		06/30/20 20:30		
P-Butanone (MEK)	ND	ug/L	10.0	1		06/30/20 20:30		
Methylene Chloride	ND	ug/L	5.00	1		06/30/20 20:30		
-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 20:30	06/30/20 20:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	1634-04-4	
laphthalene	ND	ug/L	5.00	1	06/30/20 20:30	06/30/20 20:30	91-20-3	
-Propylbenzene	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		06/30/20 20:30		CC
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 20:30	06/30/20 20:30	76-13-1	
etrachloroethene	ND	ug/L	1.00	1		06/30/20 20:30		
- etrahydrofuran	ND	ug/L	5.00	1	06/30/20 20:30	06/30/20 20:30	109-99-9	
oluene	ND	ug/L	1.00	1		06/30/20 20:30		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:30		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		06/30/20 20:30		
,1,1-Trichloroethane	ND	ug/L	1.00	1		06/30/20 20:30		
,1,2-Trichloroethane	ND	ug/L	1.00	1		06/30/20 20:30		
richloroethene	ND	ug/L	1.00	1		06/30/20 20:30		L0
richlorofluoromethane	ND	ug/L	5.00	1		06/30/20 20:30		
,2,3-Trichloropropane	ND	ug/L	2.50	1		06/30/20 20:30		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		06/30/20 20:30		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		06/30/20 20:30		
/inyl chloride	ND	ug/L	1.00	1		06/30/20 20:30		
(ylene (Total)	ND	ug/L	3.00	1		06/30/20 20:30		
Surrogates			3.00	-	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
oluene-d8 (S)	109	%	80.0-120	1	06/30/20 20:30	06/30/20 20:30	2037-26-5	
-Bromofluorobenzene (S)	97.0	%	77.0-126	1	06/30/20 20:30	06/30/20 20:30	460-00-4	
,2-Dichloroethane-d4 (S)	112	%	70.0-130	1	06/30/20 20:30	06/30/20 20:30	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Date: 07/07/2020 05:02 PM

Sample: Rinsate-06232020	Lab ID: 1052	22729003	Collected: 06/23/2	0 16:50	Received: 06	6/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 19:36	6 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	2.1	ug/L	0.25	1	06/25/20 17:23	06/29/20 01:49	9 123-91-1	
1,4-Dioxane-d8 (S)	43	%.	30-125	1	06/25/20 17:23	06/29/20 01:49	9	
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	thod: 82	260D			
Acetone	ND	ug/L	50.0	1		06/30/20 20:50		
Allyl chloride	ND	ug/L	5.00	1		06/30/20 20:50		
Benzene	ND	ug/L	1.00	1	06/30/20 20:50			
Bromobenzene	ND	ug/L	1.00	1	06/30/20 20:50			
Bromochloromethane	ND	ug/L	1.00	1	06/30/20 20:50			
Bromodichloromethane	ND	ug/L	1.00	1	06/30/20 20:50			
Bromoform	ND	ug/L	1.00	1	06/30/20 20:50			
Bromomethane	ND	ug/L	5.00	1	06/30/20 20:50			
-Butylbenzene	ND	ug/L	1.00	1	06/30/20 20:50			
ec-Butylbenzene	ND	ug/L	1.00	1	06/30/20 20:50			
ert-Butylbenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	0 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	124-48-1	
Chloroethane	ND	ug/L	5.00	1	06/30/20 20:50	06/30/20 20:50	75-00-3	
Chloroform	ND	ug/L	5.00	1	06/30/20 20:50	06/30/20 20:50	0 67-66-3	
Chloromethane	ND	ug/L	2.50	1	06/30/20 20:50	06/30/20 20:50	74-87-3	
-Chlorotoluene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	95-49-8	
-Chlorotoluene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	0 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	06/30/20 20:50	06/30/20 20:50	96-12-8	
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	06/30/20 20:50			
Dibromomethane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	0 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	0 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	06/30/20 20:50			
Dichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 20:50			
,1-Dichloroethane	ND	ug/L	1.00	1	06/30/20 20:50			
,2-Dichloroethane	ND	ug/L	1.00	1	06/30/20 20:50			
,1-Dichloroethene	ND	ug/L	1.00	1	06/30/20 20:50			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 20:50			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 20:50			
1,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 20:50			
1,1-Dichloropropene	ND ND	ug/L ug/L	1.00	1	06/30/20 20:50			
1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	06/30/20 20:50			
cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	06/30/20 20:50			

(612)607-1700



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

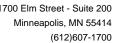
Sample: Rinsate-06232020	Lab ID: 10	522729003	Collected: 06/23/2	0 16:50	Received: 06	6/24/20 14:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace Nationa	l - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	60-29-7	
lexachloro-1,3-butadiene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 20:50	06/30/20 20:50	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	06/30/20 20:50	06/30/20 20:50	75-09-2	
-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 20:50	06/30/20 20:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	1634-04-4	
laphthalene	ND	ug/L	5.00	1	06/30/20 20:50	06/30/20 20:50	91-20-3	
-Propylbenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		06/30/20 20:50		CC
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 20:50			
etrachloroethene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	127-18-4	
- etrahydrofuran	ND	ug/L	5.00	1	06/30/20 20:50			
oluene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	108-88-3	
,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50			
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 20:50	06/30/20 20:50	79-00-5	
richloroethene	ND	ug/L	1.00	1		06/30/20 20:50		L0
richlorofluoromethane	ND	ug/L	5.00	1	06/30/20 20:50			-
,2,3-Trichloropropane	ND	ug/L	2.50	1	06/30/20 20:50			
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 20:50			
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 20:50			
/inyl chloride	ND	ug/L	1.00	1	06/30/20 20:50			
(ylene (Total)	ND	ug/L	3.00	1	06/30/20 20:50			
Surrogates	.10	~9'-	3.00	•	2 2. 00, 20 20.00	2 3. 0 0. 2 0 20.00	. 300 20 1	
oluene-d8 (S)	106	%	80.0-120	1	06/30/20 20:50	06/30/20 20:50	2037-26-5	
-Bromofluorobenzene (S)	96.4	%	77.0-126	1	06/30/20 20:50			
1,2-Dichloroethane-d4 (S)	107	%	70.0-130	1		06/30/20 20:50		



Project: 2606-0017 Water Gremlin SRI

Date: 07/07/2020 05:02 PM

Sample: GP-34 (97-100)	Lab ID: 1052	22729004	Collected: 06/24/2	0 09:30	Received: 06	6/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
_ead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 19:39	9 7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytical		270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM)	28.5	ug/L	0.36	1	06/25/20 17:23	06/29/20 02:10	0 123-91-1	
Surrogates		3						
1,4-Dioxane-d8 (S)	34	%.	30-125	1	06/25/20 17:23	06/29/20 02:10	)	
/OA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National -	Mt. Juliet						
Acetone	ND	ug/L	100	2	06/30/20 19:50	06/30/20 19:50	0 67-64-1	
Allyl chloride	ND	ug/L	10.0	2		06/30/20 19:50		
Benzene	ND	ug/L	2.00	2	06/30/20 19:50			
Bromobenzene	ND	ug/L	2.00	2	06/30/20 19:50			
Bromochloromethane	ND	ug/L	2.00	2	06/30/20 19:50			
Bromodichloromethane	ND	ug/L	2.00	2	06/30/20 19:50			
Bromoform	ND	ug/L	2.00	2		06/30/20 19:50		
Bromomethane	ND ND	ug/L ug/L	10.0	2	06/30/20 19:50			
	ND ND	•	2.00	2	06/30/20 19:50			
n-Butylbenzene		ug/L						
ec-Butylbenzene	ND	ug/L	2.00	2	06/30/20 19:50			
ert-Butylbenzene	ND	ug/L	2.00	2	06/30/20 19:50			
Carbon tetrachloride	ND	ug/L	2.00	2	06/30/20 19:50			
Chlorobenzene	ND	ug/L	2.00	2	06/30/20 19:50			
Dibromochloromethane	ND	ug/L	2.00	2	06/30/20 19:50			
Chloroethane	ND	ug/L	10.0	2	06/30/20 19:50			
Chloroform	ND	ug/L	10.0	2	06/30/20 19:50			
Chloromethane	ND	ug/L	5.00	2		06/30/20 19:50		
2-Chlorotoluene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	95-49-8	
I-Chlorotoluene	ND	ug/L	2.00	2	06/30/20 19:50			
,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2	06/30/20 19:50	06/30/20 19:50	96-12-8	
,2-Dibromoethane (EDB)	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	0 106-93-4	
Dibromomethane	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	74-95-3	
,2-Dichlorobenzene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	95-50-1	
,3-Dichlorobenzene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	541-73-1	
,4-Dichlorobenzene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	0 106-46-7	
Dichlorodifluoromethane	ND	ug/L	10.0	2	06/30/20 19:50	06/30/20 19:50	75-71-8	
Dichlorofluoromethane	ND	ug/L	10.0	2	06/30/20 19:50	06/30/20 19:50	75-43-4	
,1-Dichloroethane	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	75-34-3	
,2-Dichloroethane	ND	ug/L	2.00	2	06/30/20 19:50			
,1-Dichloroethene	ND	ug/L	2.00	2	06/30/20 19:50			
sis-1,2-Dichloroethene	ND	ug/L	2.00	2	06/30/20 19:50			
rans-1,2-Dichloroethene	ND	ug/L	2.00	2	06/30/20 19:50			
,2-Dichloropropane	ND ND	ug/L ug/L	2.00	2	06/30/20 19:50			
• •	ND ND	•	2.00	2	06/30/20 19:50			
1,1-Dichloropropene		ug/L			06/30/20 19:50			
I,3-Dichloropropane cis-1,3-Dichloropropene	ND ND	ug/L ug/L	2.00 2.00	2 2	06/30/20 19:50 06/30/20 19:50			





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Sample: GP-34 (97-100)	Lab ID: 105	22729004	Collected: 06/24/2	20 09:30	Received: 06	5/24/20 14:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
,	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	10061-02-6	
2,2-Dichloropropane	ND	ug/L	2.00	2		06/30/20 19:50		
Ethylbenzene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	2.00	2		06/30/20 19:50		
sopropylbenzene (Cumene)	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	98-82-8	
-Isopropyltoluene	ND	ug/L	2.00	2		06/30/20 19:50		
-Butanone (MEK)	ND	ug/L	20.0	2		06/30/20 19:50		
Methylene Chloride	ND	ug/L	10.0	2		06/30/20 19:50		
-Methyl-2-pentanone (MIBK)	ND	ug/L	20.0	2	06/30/20 19:50	06/30/20 19:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	1634-04-4	
laphthalene	ND	ug/L	10.0	2	06/30/20 19:50	06/30/20 19:50	91-20-3	
-Propylbenzene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	103-65-1	
tyrene	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	2.00	2		06/30/20 19:50		CC
,1,2-Trichlorotrifluoroethane	ND	ug/L	2.00	2	06/30/20 19:50	06/30/20 19:50	76-13-1	
etrachloroethene	ND	ug/L	2.00	2		06/30/20 19:50		
- etrahydrofuran	ND	ug/L	10.0	2	06/30/20 19:50	06/30/20 19:50	109-99-9	
oluene	ND	ug/L	2.00	2		06/30/20 19:50		
,2,3-Trichlorobenzene	ND	ug/L	2.00	2		06/30/20 19:50		
,2,4-Trichlorobenzene	ND	ug/L	2.00	2		06/30/20 19:50		
,1,1-Trichloroethane	ND	ug/L	2.00	2		06/30/20 19:50		
,1,2-Trichloroethane	ND	ug/L	2.00	2		06/30/20 19:50		
richloroethene	ND	ug/L	2.00	2		06/30/20 19:50		L0
richlorofluoromethane	ND	ug/L	10.0	2		06/30/20 19:50		
,2,3-Trichloropropane	ND	ug/L	5.00	2		06/30/20 19:50		
,2,4-Trimethylbenzene	ND	ug/L	2.00	2		06/30/20 19:50		
,3,5-Trimethylbenzene	ND	ug/L	2.00	2		06/30/20 19:50		
'inyl chloride	ND	ug/L	2.00	2		06/30/20 19:50		
(ylene (Total)	ND	ug/L	6.00	2		06/30/20 19:50		
Surrogates			3.00	_	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		,	
oluene-d8 (S)	109	%	80.0-120	2	06/30/20 19:50	06/30/20 19:50	2037-26-5	
-Bromofluorobenzene (S)	95.8	%	77.0-126	2	06/30/20 19:50	06/30/20 19:50	460-00-4	
,2-Dichloroethane-d4 (S)	110	%	70.0-130	2	06/30/20 19:50	06/30/20 19:50	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Sample: Trip Blank	Lab ID: 1	0522729005	Collected: 06/23/2	00:00	Received: 06	6/24/20 14:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical M	1ethod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace Nation	nal - Mt. Juliet						
Acetone	ND	ug/L	50.0	1	06/30/20 17:19	06/30/20 17:19	0 67-64-1	
Allyl chloride	ND ND	ug/L	5.00	1	06/30/20 17:19			
Benzene	ND	ug/L	1.00	1	06/30/20 17:19			
Bromobenzene	ND	ug/L	1.00	1	06/30/20 17:19			
Bromochloromethane	ND	ug/L	1.00	1	06/30/20 17:19			
Bromodichloromethane	ND	ug/L	1.00	1	06/30/20 17:19			
Bromoform	ND ND	ug/L	1.00	1	06/30/20 17:19			
Bromomethane	ND	ug/L	5.00	1	06/30/20 17:19			
n-Butylbenzene	ND	ug/L	1.00	1	06/30/20 17:19			
sec-Butylbenzene	ND	ug/L	1.00	1	06/30/20 17:19			
ert-Butylbenzene	ND ND	ug/L	1.00	1	06/30/20 17:19			
Carbon tetrachloride	ND ND	ug/L ug/L	1.00	1	06/30/20 17:19			
Chlorobenzene	ND	ug/L	1.00	1	06/30/20 17:19			
Dibromochloromethane	ND ND	ug/L	1.00	1	06/30/20 17:19			
Chloroethane	ND ND	ug/L	5.00	1	06/30/20 17:19			
Chloroform	ND ND	ug/L ug/L	5.00	1	06/30/20 17:19			
Chloromethane	ND ND	-	2.50	1	06/30/20 17:19			
-Chlorotoluene	ND ND	ug/L	1.00	1	06/30/20 17:19			
	ND ND	ug/L	1.00	1	06/30/20 17:19			
-Chlorotoluene		ug/L		1				
,2-Dibromo-3-chloropropane	ND	ug/L	5.00		06/30/20 17:19 06/30/20 17:19			
,2-Dibromoethane (EDB) Dibromomethane	ND ND	ug/L	1.00	1 1	06/30/20 17:19			
		ug/L	1.00					
,2-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 17:19			
,3-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 17:19		
,4-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 17:19			
Dichlorodifluoromethane	ND	ug/L	5.00	1	06/30/20 17:19			
Dichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 17:19			
,1-Dichloroethane	ND	ug/L	1.00	1	06/30/20 17:19			
,2-Dichloroethane	ND	ug/L	1.00	1		06/30/20 17:19		
,1-Dichloroethene	ND	ug/L	1.00	1	06/30/20 17:19			
is-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 17:19			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 17:19			
,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 17:19			
,1-Dichloropropene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	9 563-58-6	
,3-Dichloropropane	ND	ug/L	1.00	1		06/30/20 17:19		
is-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 17:19			
rans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 17:19			
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 17:19			
thylbenzene	ND	ug/L	1.00	1	06/30/20 17:19			
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 17:19			
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	06/30/20 17:19			
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 17:19			
-Isopropyltoluene	ND	ug/L	1.00	1	06/30/20 17:19			
-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 17:19			
Methylene Chloride	ND	ug/L	5.00	1	06/30/20 17:19			
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 17:19	06/30/20 17:19	9 108-10-1	

(612)607-1700



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Sample: Trip Blank	Lab ID: 1052	22729005	Collected: 06/23/2	20 00:00	Received: 06	/24/20 14:50 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	06/30/20 17:19	06/30/20 17:19	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	79-34-5	CC
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	06/30/20 17:19	06/30/20 17:19	109-99-9	
Toluene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	79-01-6	L0
Trichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 17:19	06/30/20 17:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	06/30/20 17:19	06/30/20 17:19	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	108-67-8	
Vinyl chloride	ND	ug/L	1.00	1	06/30/20 17:19	06/30/20 17:19	75-01-4	
Xylene (Total)	ND	ug/L	3.00	1	06/30/20 17:19	06/30/20 17:19	1330-20-7	
Surrogates								
Toluene-d8 (S)	108	%	80.0-120	1		06/30/20 17:19	2037-26-5	
4-Bromofluorobenzene (S)	97.1	%	77.0-126	1	06/30/20 17:19	06/30/20 17:19	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70.0-130	1	06/30/20 17:19	06/30/20 17:19	17060-07-0	

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#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

QC Batch: 684138 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004

METHOD BLANK: 3659785 Matrix: Water

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/01/20 19:21

LABORATORY CONTROL SAMPLE: 3659786

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead, Dissolved ug/L 1000 969 97 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3659787 3659788

MS MSD

10522971002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Result Result **RPD** RPD Qual Result Conc. % Rec % Rec Limits Lead, Dissolved ND ug/L 1000 1000 939 932 94 93 75-125 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

QC Batch: 1501893 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004, 10522729005

METHOD BLANK: R3545289-3 Matrix: Water

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004, 10522729005

	2723001, 10322723002,	Blank	Reporting	<b>311</b> . <b>2333</b>	
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	06/30/20 14:33	
Benzene	ug/L	ND	1.00	06/30/20 14:33	
Bromobenzene	ug/L	ND	1.00	06/30/20 14:33	
Bromodichloromethane	ug/L	ND	1.00	06/30/20 14:33	
Bromochloromethane	ug/L	ND	1.00	06/30/20 14:33	
Bromoform	ug/L	ND	1.00	06/30/20 14:33	
Bromomethane	ug/L	ND	5.00	06/30/20 14:33	
n-Butylbenzene	ug/L	ND	1.00	06/30/20 14:33	
sec-Butylbenzene	ug/L	ND	1.00	06/30/20 14:33	
tert-Butylbenzene	ug/L	ND	1.00	06/30/20 14:33	
Carbon tetrachloride	ug/L	ND	1.00	06/30/20 14:33	
Chlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
Dibromochloromethane	ug/L	ND	1.00	06/30/20 14:33	
Chloroethane	ug/L	ND	5.00	06/30/20 14:33	
Chloroform	ug/L	ND	5.00	06/30/20 14:33	
Chloromethane	ug/L	ND	2.50	06/30/20 14:33	
2-Chlorotoluene	ug/L	ND	1.00	06/30/20 14:33	
4-Chlorotoluene	ug/L	ND	1.00	06/30/20 14:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	06/30/20 14:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	06/30/20 14:33	
Dibromomethane	ug/L	ND	1.00	06/30/20 14:33	
1,2-Dichlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
1,3-Dichlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
1,4-Dichlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
Dichlorodifluoromethane	ug/L	ND	5.00	06/30/20 14:33	
Dichlorofluoromethane	ug/L	ND	5.00	06/30/20 14:33	
1,1-Dichloroethane	ug/L	ND	1.00	06/30/20 14:33	
1,2-Dichloroethane	ug/L	ND	1.00	06/30/20 14:33	
1,1-Dichloroethene	ug/L	ND	1.00	06/30/20 14:33	
cis-1,2-Dichloroethene	ug/L	ND	1.00	06/30/20 14:33	
trans-1,2-Dichloroethene	ug/L	ND	1.00	06/30/20 14:33	
1,2-Dichloropropane	ug/L	ND	1.00	06/30/20 14:33	
1,1-Dichloropropene	ug/L	ND	1.00	06/30/20 14:33	
1,3-Dichloropropane	ug/L	ND	1.00	06/30/20 14:33	
cis-1,3-Dichloropropene	ug/L	ND	1.00	06/30/20 14:33	
trans-1,3-Dichloropropene	ug/L	ND	1.00	06/30/20 14:33	
2,2-Dichloropropane	ug/L	ND	1.00	06/30/20 14:33	
Ethylbenzene	ug/L	ND	1.00	06/30/20 14:33	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	06/30/20 14:33	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	06/30/20 14:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

METHOD BLANK: R3545289-3 Matrix: Water

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004, 10522729005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	06/30/20 14:33	
p-Isopropyltoluene	ug/L	ND	1.00	06/30/20 14:33	
2-Butanone (MEK)	ug/L	ND	10.0	06/30/20 14:33	
Methylene Chloride	ug/L	ND	5.00	06/30/20 14:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	06/30/20 14:33	
Methyl-tert-butyl ether	ug/L	ND	1.00	06/30/20 14:33	
Naphthalene	ug/L	ND	5.00	06/30/20 14:33	
n-Propylbenzene	ug/L	ND	1.00	06/30/20 14:33	
Styrene	ug/L	ND	1.00	06/30/20 14:33	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	06/30/20 14:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	06/30/20 14:33	
Tetrachloroethene	ug/L	ND	1.00	06/30/20 14:33	
Tetrahydrofuran	ug/L	ND	5.00	06/30/20 14:33	
Toluene	ug/L	ND	1.00	06/30/20 14:33	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	06/30/20 14:33	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	06/30/20 14:33	
1,1,1-Trichloroethane	ug/L	ND	1.00	06/30/20 14:33	
1,1,2-Trichloroethane	ug/L	ND	1.00	06/30/20 14:33	
Trichloroethene	ug/L	ND	1.00	06/30/20 14:33	
Trichlorofluoromethane	ug/L	ND	5.00	06/30/20 14:33	
1,2,3-Trichloropropane	ug/L	ND	2.50	06/30/20 14:33	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	06/30/20 14:33	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	06/30/20 14:33	
Vinyl chloride	ug/L	ND	1.00	06/30/20 14:33	
Xylene (Total)	ug/L	ND	3.00	06/30/20 14:33	
Allyl chloride	ug/L	ND	5.00	06/30/20 14:33	
Toluene-d8 (S)	%	107	80.0-120	06/30/20 14:33	
4-Bromofluorobenzene (S)	%	97.4	77.0-126	06/30/20 14:33	
1,2-Dichloroethane-d4 (S)	%	114	70.0-130	06/30/20 14:33	

LABORATORY CONTROL SAMPLE &	289-1	R	3545289-2							
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	23.6	21.0	94.4	84.0	19.0-160	11.7	27	
Benzene	ug/L	5.00	5.10	5.28	102	106	70.0-123	3.47	20	
Bromobenzene	ug/L	5.00	4.29	4.41	85.8	88.2	73.0-121	2.76	20	
Bromodichloromethane	ug/L	5.00	5.12	5.54	102	111	75.0-120	7.88	20	
Bromochloromethane	ug/L	5.00	5.61	6.02	112	120	76.0-122	7.05	20	
Bromoform	ug/L	5.00	5.46	5.53	109	111	68.0-132	1.27	20	
Bromomethane	ug/L	5.00	5.17	5.20	103	104	10.0-160	0.579	25	
n-Butylbenzene	ug/L	5.00	4.25	4.45	85.0	89.0	73.0-125	4.60	20	
sec-Butylbenzene	ug/L	5.00	4.42	4.63	88.4	92.6	75.0-125	4.64	20	
tert-Butylbenzene	ug/L	5.00	4.39	4.61	87.8	92.2	76.0-124	4.89	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

LABORATORY CONTROL SAMPLE &	LCSD: R3545			3545289-2			_			
_		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifie
Carbon tetrachloride	ug/L	5.00	5.32	5.47	106	109	68.0-126	2.78	20	
Chlorobenzene	ug/L	5.00	5.89	5.97	118	119	80.0-121	1.35	20	
Dibromochloromethane	ug/L	5.00	5.87	5.81	117	116	77.0-125	1.03	20	
Chloroethane	ug/L	5.00	5.00	5.20	100	104	47.0-150	3.92	20	
Chloroform	ug/L	5.00	5.22	5.46	104	109	73.0-120	4.49	20	
Chloromethane	ug/L	5.00	5.22	5.25	104	105	41.0-142	0.573	20	
2-Chlorotoluene	ug/L	5.00	4.28	4.46	85.6	89.2	76.0-123	4.12	20	
4-Chlorotoluene	ug/L	5.00	4.13	4.30	82.6	86.0	75.0-122	4.03	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	4.46	4.62	89.2	92.4	58.0-134	3.52	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	5.20	5.46		109	80.0-122	4.88	20	
Dibromomethane	ug/L	5.00	5.28	5.45		109	80.0-120	3.17	20	
1,2-Dichlorobenzene	ug/L	5.00	5.00	5.04		101	79.0-121	0.797	20	
1,3-Dichlorobenzene	ug/L	5.00	4.80	4.84		96.8	79.0-120	0.830	20	
1,4-Dichlorobenzene	ug/L	5.00	4.65	4.78		95.6	79.0-120	2.76	20	
Dichlorodifluoromethane	ug/L	5.00	6.07	6.64		133	51.0-149	8.97	20	
Dichlorofluoromethane	ug/L	5.00	5.54	5.86		117		5.61	20	
1,1-Dichloroethane	ug/L	5.00	4.94	5.16		103	70.0-126	4.36	20	
1,2-Dichloroethane	ug/L	5.00	5.46	5.10		103	70.0-120	2.22	20	
1,1-Dichloroethene	_	5.00	5.05	5.45		107	71.0-124	7.62	20	
cis-1,2-Dichloroethene	ug/L	5.00	5.05	5.45 5.46		109	73.0-124	7.80	20	
-	ug/L						73.0-120			
rans-1,2-Dichloroethene	ug/L	5.00	5.12	4.99		99.8		2.57	20	
1,2-Dichloropropane	ug/L	5.00	4.43	4.95		99.0	77.0-125	11.1	20	
I,1-Dichloropropene	ug/L	5.00	4.82	5.07	96.4	101	74.0-126	5.06	20	
1,3-Dichloropropane	ug/L	5.00	4.89	5.05		101	80.0-120	3.22	20	
cis-1,3-Dichloropropene	ug/L	5.00	4.62	4.74		94.8	80.0-123	2.56	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.79	4.76		95.2	78.0-124	0.628	20	
2,2-Dichloropropane	ug/L	5.00	4.70	4.81	94.0	96.2	58.0-130	2.31	20	
Ethylbenzene	ug/L	5.00	5.45	5.65		113	79.0-123	3.60	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.29	4.23		84.6	66.0-130	1.41	20	
Hexachloro-1,3-butadiene	ug/L	5.00	4.71	4.96		99.2		5.17	20	
sopropylbenzene (Cumene)	ug/L	5.00	5.63	5.74		115	76.0-127	1.93	20	
o-Isopropyltoluene	ug/L	5.00	4.51	4.67		93.4	76.0-125	3.49	20	
2-Butanone (MEK)	ug/L	25.0	25.7	26.6		106	44.0-160	3.44	20	
Methylene Chloride	ug/L	5.00	4.48	4.47	89.6	89.4	67.0-120	0.223	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	27.1	27.1	108	108	68.0-142	0.00	20	
Methyl-tert-butyl ether	ug/L	5.00	4.57	4.66	91.4	93.2	68.0-125	1.95	20	
Naphthalene	ug/L	5.00	4.09	4.52		90.4	54.0-135	9.99	20	
n-Propylbenzene	ug/L	5.00	4.30	4.45	86.0	89.0	77.0-124	3.43	20	
Styrene	ug/L	5.00	5.40	5.65	108	113	73.0-130	4.52	20	
1,1,1,2-Tetrachloroethane	ug/L	5.00	5.55	5.69	111	114	75.0-125	2.49	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	3.92	4.09	78.4	81.8	65.0-130	4.24	20	
Tetrachloroethene	ug/L	5.00	5.87	6.21	117	124	72.0-132	5.63	20	
Tetrahydrofuran	ug/L	5.00	4.57	4.48			41.0-146	1.99	20	
Toluene	ug/L	5.00	5.25	5.29			79.0-120	0.759	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.36	5.72		114		6.50	20	
1,2,3-Trichlorobenzene	ug/L	5.00	4.37	5.05		101	50.0-138	14.4	20	
1,2,4-Trichlorobenzene	ug/L	5.00	4.30	4.55			57.0-137	5.65	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

LABORATORY CONTROL SAMPLE	E & LCSD: R3545	289-1	R	3545289-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.67	5.67	113	113	73.0-124	0.00	20	
1,1,2-Trichloroethane	ug/L	5.00	5.50	5.97	110	119	80.0-120	8.20	20	
Trichloroethene	ug/L	5.00	6.02	6.41	120	128	78.0-124	6.28	20 1	L0
Trichlorofluoromethane	ug/L	5.00	6.48	6.85	130	137	59.0-147	5.55	20	
1,2,3-Trichloropropane	ug/L	5.00	4.10	4.45	82.0	89.0	73.0-130	8.19	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.01	4.14	80.2	82.8	76.0-121	3.19	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.28	4.47	85.6	89.4	76.0-122	4.34	20	
Vinyl chloride	ug/L	5.00	5.21	5.40	104	108	67.0-131	3.58	20	
Xylene (Total)	ug/L	15.0	15.9	16.2	106	108	79.0-123	1.87	20	
Allyl chloride	ug/L	25.0	24.6	25.1	98.4	100	72.0-128	2.01	20	
Toluene-d8 (S)	%				108	106	80.0-120			
4-Bromofluorobenzene (S)	%				101	100	77.0-126			
1,2-Dichloroethane-d4 (S)	%				112	110	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





2606-0017 Water Gremlin SRI Project:

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

QC Batch: 683403 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

> Laboratory: Pace Analytical Services - Minneapolis

> > Qualifiers

10522729001, 10522729002, 10522729003, 10522729004 Associated Lab Samples:

METHOD BLANK: Matrix: Water

Associated Lab Samples: 10522729001, 10522729002, 10522729003, 10522729004

%.

Blank Reporting

Parameter Units Result Limit Analyzed 1,4-Dioxane (SIM) ND 0.25 06/28/20 23:45 ug/L 1,4-Dioxane-d8 (S) 43 30-125 06/28/20 23:45

LABORATORY CONTROL SAMPLE & LCSD: 3656351 3656352 Spike LCS LCSD LCS LCSD % Rec Max Parameter Units Conc. Result Result % Rec % Rec Limits **RPD RPD** Qualifiers 1.4-Dioxane (SIM) 10 9.7 97 97 ug/L 9.7 32-128 20 1,4-Dioxane-d8 (S) 36 40 30-125 %.

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **SAMPLE QUALIFIERS**

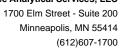
Sample: 10522729004

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Elevated RL due to sediment in sample vial.

#### **ANALYTE QUALIFIERS**

Date: 07/07/2020 05:02 PM

- CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.
- LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10522729

Date: 07/07/2020 05:02 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10522729001	GP-34 (47-50)	EPA 3010A	684138	EPA 6010D	684425
10522729002	GP-34 (75-78)	EPA 3010A	684138	EPA 6010D	684425
10522729003	Rinsate-06232020	EPA 3010A	684138	EPA 6010D	684425
10522729004	GP-34 (97-100)	EPA 3010A	684138	EPA 6010D	684425
10522729001	GP-34 (47-50)	EPA Mod. 3510C	683403	EPA 8270E by SIM	683556
10522729002	GP-34 (75-78)	EPA Mod. 3510C	683403	EPA 8270E by SIM	683556
10522729003	Rinsate-06232020	EPA Mod. 3510C	683403	EPA 8270E by SIM	683556
10522729004	GP-34 (97-100)	EPA Mod. 3510C	683403	EPA 8270E by SIM	683556
10522729001	GP-34 (47-50)	8260D	1501893	EPA 8260D	1501893
10522729002	GP-34 (75-78)	8260D	1501893	EPA 8260D	1501893
10522729003	Rinsate-06232020	8260D	1501893	EPA 8260D	1501893
10522729004	GP-34 (97-100)	8260D	1501893	EPA 8260D	1501893
10522729005	Trip Blank	8260D	1501893	EPA 8260D	1501893



# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ection A equired Client Information:	Section B Required Project Information:			Section C	ation:	٠		Page:	<u>.</u>	1 of \	<del></del>
impany: Wench Associates	Report To: Shake W	aterman		Attention:	ccounting a	Wenck rom	1	<del></del>			
Idress: 1800 Roneer Geek Ctr	ConvTo: 1 .	worshi, Aaron	Berker.	Company Nan	ne:	700 0.70.(	REGULATORY	AGENCY		en e	Masaca Actividados NATA de la casacidados
Maple Plan, MN	Ben Holcon	1	<del>* - • - /</del>	Address:			NPDES	GROUN	D WATER	DRINKIN	G WATER
nail To: Swaterman@wench.com	Purchase Order No.:			Pace Quote		•	UST	RCRA		OTHER	
ione: 612-710-8021 Fax: n/a	Project Name:	CASPT		Reference: Pace Project	<del></del>	<del></del>	Site Location			oe.	
equested Due Date/TAT: Standard	Project Number: 2606 -	Grenden SRI	-	Manager: Pace Profile #:				MN			
3 Tandard	2006-	6017					STATE:		्रश्		
Section D Valid Matrix	Cod (2) 6					The Asia Committee of the Committee of t	Analysis Filtere	a (t/N)			
Required Client Information MATRIX	Codes (FU) COME (COME) CODE (C	COLLECTED			Preservatives	N N N					
DRINKING WATEI WATER	Codes CODE CODE CODE CODE CODE CODE CODE CODE	ONDOOTE .	COLLECTION								
WASTE WATER PRODUCT SOIL/SOLID	(see valid	OMPOSITE COMPOSITI START END/GRAB	TEC			च			ξ		
SAMPLE ID WIPE	See valid		loo	SS S		estl lea			e e		
(A-Z, 0-9 / ,-) OTHER	AR Ш		P AT	CONTAINERS eserved					lo <u>r</u> ij		
Sample IDs MUST BE UNIQUE TISSUE	CODE TS		ТЕМР	N T N		alysis Te			힏		
# 5	P.E.		J.E.	S se c		Sso all			dua		
ITEM#	MATRIX SAMPLE 1	TE TIME DATE	SAMPLE.	# OF CONTAI Unpreserved H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub> HCI NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol	TAnalysis Dissolved 1,4-010000			Residual Chlorine (Y/N)	Pace Project	Vollab ID
1 GP-34( 47-50 )	WTG 6/23/	<del></del>		6 K	X	Silv X X V	1 1 1			VI: 200100	
2 GP-34 (75-78 )	WT & 6/24/			6 X	*	XXX		<del>- - - </del>	<del>                                     </del>		4888 WZ
3 Rinsate - 06232020		120 1650		6 X	X	K X X		+++	11	75 - 5 - 5	<i>i203</i>
4 GP-34 (97-100)	WT & 6/24			9 1	×	\ \ \ \ \ \ \ \	<del>                                     </del>		11	2.00 100	4888 Cely
5.9	100, 50, 51, 51, 51, 51, 51, 51, 51, 51, 51, 51	13	-1					+++	11	w5	1000 1
6							<del></del>	<del>-   -   -  </del> 	<del>-1 i</del>		
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ADDITIONAL COMMENTS	RELINQUISHED	EY / AFFILIATION	DATE	TIME	ACCEPTE	D BY / AFFILIATION	DATE	TIME	1	SAMPLE CONDI	TIONS
-Dissolved lead samples need	En Dela	8/WAI 6	/24/20	CALLERY CONTRACTOR AND	Wyatt Qua	lls/WAI	6/24/20	24 1.4859 2.51 11		1	
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lab filtered. *					ausp	Pace	6/24/6	145	1.7	4 70	17
GP-34(97-100) includes 3 voc										· (D)	6/24/20
vials with HCI removed due											15
		SAMPLER NAME AND			0.0 m/s.				O	o oler	fact
age		PRINT Name o	of SAMPLER:	Benjam	in Holow	b Wyatt	Qualls		Temp in °C	Y Cook	es fu
to strong rxn. ★ 24 of 28		SIGNATURE	of SAMPLER:	B	6612	/ DATE Signed	2/21/2 =		Tem	Received on Ice (Y/N) Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
와 2				111	O /	] (MM/DD/YY):	06/24/202	.0		-   w	_ σ
"Important Nata" By signing this face, we have been	pring Pace's NET 30 day payment to re	to and the egreening of late, whereas of	1.5% per month	Wyst	M/30 and			F-A	LL-O-020	rev.07, 15-Feb-20	07

# Pace Analytical®

## **Document Name:**

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Client Name:			Pr	oject #:	W	0#:1	L05	5227	29	
wenck						AKA		Due Date		01/20
Courier:         ☐ Fed Ex         ☐ UPS           ☐ Pace         ☐ SpeeDee			∐CI al See Ex	ient reptions		ENT: WE	NCK			
Tracking Number:										
Custody Seal on Cooler/Box Present? Yes	]No	Sea	als Intact	? Yes	□N	o <b>Biol</b> o	gical Ti	issue Frozen	?	
Packing Material: Subble Wrap Bubble Ba	gs [	]None	□Oth	er:			T	emp Blank?		es 🔲 No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)		Type of I	lce: Z	Wet [	]Blue	□None	□D	ry ∐Mel	ted	
Did Samples Originate in West Virginia?   Yes No	We	re All Co	ntainer '	Temps Take	n? ∐Ye	es 🔲 No 🔎	₹N/A			
Temp should be above freezing to 6°C Cooler Temp Rea	d w/ten	ıp blank	:	1.7		oc		age Correcte		
Correction Factor: Cooler Temp Correcte	d w/tem	p blank		1,	2	⁰c	(no		only): C	See Exception
USDA Regulated Soil: (	aps)? [	Yes	□No	A, Did san Hawaii	nples ori and Pue	ginate from a rto Rico)?	foreign SCUR/C		nationally No	including
							COM	MENTS:		<u>.</u> .
hain of Custody Present and Filled Out? hain of Custody Relinquished?	Yes Yes	No □No	<del></del>	1. 2.					71	
ampler Name and/or Signature on COC?				i —		····		•		
amples Arrived within Hold Time?	Yes	No □No	∐N/A	3. 4.				····		
nort Hold Time Analysis (<72 hr)?	☐Yes	ØÑ∘		5.				form/E coli  rthophos  O		D Hex Chrom
ush Turn Around Time Requested?	□Yes	⊠Ńo		6.				ернез 🖂 о	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
ufficient Volume?	☐⁄Yes	□No		7.						
orrect Containers Used?	<b>Z</b> Yes	□No		8.						
-Pace Containers Used?	Yes	□No								
ontainers Intact?	Yes	□No		9.		<del></del>			.,,	
eld Filtered Volume Received for Dissolved Tests?	□Yes	ΠNο	□n/a	10. Is se	diment	visible in the	dissolv	ed container	2 TVes	По
sufficient information available to reconcile the samples		FINE				Date/Time or				See Except
the COC?	Yes	□No			•	•				
Matrix: ☑Water □Soil □Oil □Other										
I containers needing acid/base preservation have been	□Yes	□No	☑N/A	12. Sample	<del>2</del> #			<del>.</del>		
necked?			<i></i>							
Il containers needing preservation are found to be in ompliance with EPA recommendation? $100_3$ , $120_4$ , $12$	∐Yes	□No	ØN/A		NaOH	□ нг	NO <sub>3</sub>	∏H₂SO₄		Zinc Acetate
cceptions: VOA, Coliform, TOC/DOC Oil and Grease,	TXVes	П№	□n/a	Positive fo	r Res. 📙	_ Yes				See Except
RO/8015 (water) and Dioxin/PFAS	7			Chlorine? Res. Chlori		_No 0-6 Roll	рн Рар	er Lot# 0-6 Strip		0-14 Strip
				ines. Cilion	IIC	0-0 KUII		0-0 3th		0-14 3trip
tra labels present on soil VOA or WIDRO containers?	∐Yes	□No	∠N/A	13.				L		See Except
eadspace in VOA Vials (greater than 6mm)?	Yes	□No	□N/A	**						
ip Blank Present? ip Blank Custody Seals Present?	ZYes □xes	∏No ∏No	□n/a □n/a	14. Pace	Trin Bla	nk Lot # (if p	urchaea	16	864	1025 N
CLIENT NOTIFICATION/RESOLUTION	- Jacas	□140			-				□Yes	
erson Contacted: omments/Resolution:				Date/Tin	iie:					
						-147		· · · · · ·		

Labeled by: \_\_\_\_



Document Name: Headspace Exception

Document Revised: 26Mar2020
Page 1 of 1

Document No.: ENV-FRM-MIN4-0140 Rev.00

Pace Analytical Services - **Minneapolis** 

Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
3	Ø	0	3	7
3	0	0	3	7
4	2	0	6	7
			71 / ·	
	greater than 6mm	greater than 6mm less than 6mm	greater than 6mm less than 6mm Headspace	greater than 6mm less than 6mm Headspace 3 0 0 3

	Samples were s	ent directly to th	e Subcontractir	ng Laboratory.				State Of Orig Cert. Needed		/es	No		Pa	ace Analytical www.pacelabs.com
Wor	rkorder: 10522729	Workorder N	ame: 2606-001	17 Water Gren	nlin SRI			Owner Recei	ved Dat	e:	6/24/2020		Its Requested	By: 7/7/2020
Repo	ort To	MOTOR DE	Subcontrac	ct To					1000		Requeste	d Analysi	S	
Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700				ational ebanon Road et, TN 37122		Pre	serv	ed Containers		y 8260D (Pace National)			A034	
	THE RESERVE TO SHEET	THE RESIDENCE IN COLUMN 2 IN C				1 4	2		1 1	b v		1 1	1 1 1 1	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	VG9H	WGBU			VOC				LAB USE ONLY
Item	<b>Sample ID</b> GP-34 (47-50)		77711223	Lab ID 10522729001	Matrix Water	3	Mean			X				LAB USE ONLY
1	CONTRACTOR OF THE PARTY OF THE	Туре	Date/Time		1000000	-	າຊຸລຸ					,-		1 - 2 / 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2
1	GP-34 (47-50)	Type PS	Date/Time 6/23/2020 15:20	10522729001	Water	3	AGBA			Х				-01 -02 -03
1 2	GP-34 (47-50) GP-34 (75-78)	Type PS PS	Date/Time 6/23/2020 15:20 6/24/2020 08:00	10522729001 10522729002	Water Water	3 3 3	365A			X X X				-01 -02 -03
1 2 3	GP-34 (47-50) GP-34 (75-78) Rinsate-06232020	PS PS PS	Date/Time 6/23/2020 15:20 6/24/2020 08:00 6/23/2020 16:50	10522729001 10522729002 10522729003	Water Water Water	3 3 3				X X X			Comments	-01

Received on Ice or N

Custody Seal Ø or N

J.8-4-24

TAB SCREEN: <0.5 mR/hr

Cooler Temperature on Receipt 24 °C

L1233773

Samples Intact (Y )or N

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical National Center Cooler Receipt		ation/	
Client: PACEMA		L123:	3773
Cooler Received/Opened On: 6 / 26 / 20	Temperature:	2.4	oc
Received By: Sandy Yossef			10 10
Signature: Sandy vosse-		1	
		and the second second	
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?	Transfer of the second		
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			





July 14, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on June 26, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp

annika.asp@pacelabs.com

ann Asp

(612)607-1700

Project Manager

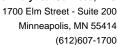
Enclosures

cc: Aaron Benker, Wenck

Ben Holcomb, Wenck Associates
Kelly Jaworski, Wenck Associates Inc
Kelly Jaworski, Wenck Associates, Inc.

Mr. Shane Waterman, Wenck Associates, Inc.







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: 2-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Maryland Certification #: 322

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: WN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

#### **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: Al30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002

Maine Certification #: 1N0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789



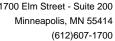


#### **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10522971001	GP-35 (14-17)	Water	06/25/20 14:45	06/26/20 09:00
10522971002	GP-35 (47-50)	Water	06/25/20 16:00	06/26/20 09:00
10522971003	GP-35 (68-72)	Water	06/25/20 18:00	06/26/20 09:00
10522971004	GP-35 (88-90)	Water	06/25/20 19:00	06/26/20 09:00
10522971005	HCL Trip Blank	Water	06/25/20 00:00	06/26/20 09:00





#### **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Lab ID Sample ID		Method	Analysts	Analytes Reported	Laboratory	
10522971001	GP-35 (14-17)	EPA 6010D		1	PASI-M	
		EPA 8270E by SIM	ZT	2	PASI-M	
		EPA 8260D	BMB	70	PAN	
10522971002	GP-35 (47-50)	EPA 6010D	DM	1	PASI-M	
		EPA 8270E by SIM	ZT	2	PASI-M	
		EPA 8260D	BMB	70	PAN	
10522971003	GP-35 (68-72)	EPA 6010D	DM	1	PASI-M	
		EPA 8270E by SIM	ZT	2	PASI-M	
		EPA 8260D	BMB	70	PAN	
10522971004	GP-35 (88-90)	EPA 6010D	DM	1	PASI-M	
		EPA 8270E by SIM	ZT	2	PASI-M	
		EPA 8260D	BMB	70	PAN	
10522971005	HCL Trip Blank	EPA 8260D	BMB	70	PAN	

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin

Date: 07/14/2020 11:57 AM

Sample: GP-35 (14-17)	Lab ID: 105	22971001	Collected: 06/25/2	0 14:45	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 19:42	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
1,4-Dioxane (SIM)	0.46	ug/L	0.31	1	06/26/20 14:19	06/30/20 12:13	123-91-1	1M
Surrogates 1,4-Dioxane-d8 (S)	22	%.	30-125	1	06/26/20 14:19	06/30/20 12:13	1	2M,P2
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260D Pace National - Mt. Juliet							
Acetone	ND	ug/L	50.0	1		06/30/20 08:38		
Allyl chloride	ND	ug/L	5.00	1		06/30/20 08:38		
Benzene	ND	ug/L	1.00	1		06/30/20 08:38		
Bromobenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	108-86-1	
Bromochloromethane	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	74-97-5	
Bromodichloromethane	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	75-27-4	
Bromoform	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	75-25-2	
Bromomethane	ND	ug/L	5.00	1	06/30/20 08:38	06/30/20 08:38	74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1		06/30/20 08:38		
Chlorobenzene	ND	ug/L	1.00	1		06/30/20 08:38		L0
Dibromochloromethane	ND	ug/L	1.00	1		06/30/20 08:38		_0
Chloroethane	ND	ug/L	5.00	1		06/30/20 08:38		
Chloroform	ND	ug/L	5.00	1		06/30/20 08:38		
Chloromethane	ND	ug/L	2.50	1		06/30/20 08:38		
2-Chlorotoluene	ND ND	•	1.00	1		06/30/20 08:38		
		ug/L						
4-Chlorotoluene	ND	ug/L	1.00	1		06/30/20 08:38		
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		06/30/20 08:38		
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		06/30/20 08:38		
Dibromomethane	ND	ug/L	1.00	1		06/30/20 08:38		
1,2-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 08:38		
1,3-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 08:38		
1,4-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1		06/30/20 08:38		
Dichlorofluoromethane	ND	ug/L	5.00	1		06/30/20 08:38		
1,1-Dichloroethane	ND	ug/L	1.00	1		06/30/20 08:38		
1,2-Dichloroethane	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.00	1		06/30/20 08:38		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	78-87-5	
1,1-Dichloropropene	ND	ug/L	1.00	1		06/30/20 08:38		
1,3-Dichloropropane	ND	ug/L	1.00	1		06/30/20 08:38		
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 08:38			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (14-17)	Lab ID: 105	22971001	Collected: 06/25/2	20 14:45	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	3 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	3 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	3 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	8 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	8 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 08:38	06/30/20 08:38	3 78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	06/30/20 08:38	06/30/20 08:38	3 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 08:38	06/30/20 08:38	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 08:38	06/30/20 08:38	3 1634-04-4	
Naphthalene	ND	ug/L	5.00	1	06/30/20 08:38			
n-Propylbenzene	ND	ug/L	1.00	1	06/30/20 08:38			
Styrene	ND	ug/L	1.00	1	06/30/20 08:38			
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 08:38			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 08:38			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 08:38			
etrachloroethene	ND	ug/L	1.00	1	06/30/20 08:38			LO
Tetrahydrofuran	ND	ug/L	5.00	1	06/30/20 08:38			
Toluene	ND	ug/L	1.00	1	06/30/20 08:38			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 08:38			
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 08:38			
1,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 08:38			
1,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 08:38			LO
richloroethene	ND	ug/L	1.00	1	06/30/20 08:38			LO
Trichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 08:38			
1,2,3-Trichloropropane	ND ND	ug/L	2.50	1	06/30/20 08:38			
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	06/30/20 08:38			
1,3,5-Trimethylbenzene	ND ND	ug/L ug/L	1.00	1	06/30/20 08:38			
/inyl chloride	ND ND	ug/L ug/L	1.00	1	06/30/20 08:38			
(ylene (Total)	ND ND	ug/L ug/L	3.00	1	06/30/20 08:38			
Surrogates	טאו	ug/L	3.00	1	00/30/20 00.38	00/30/20 00:30	1330-20-7	
Foluene-d8 (S)	108	%	80.0-120	1	06/30/20 08:38	06/30/20 08:38	3 2037-26-5	
I-Bromofluorobenzene (S)	95.1	%	77.0-126	1	06/30/20 08:38			
1,2-Dichloroethane-d4 (S)	114	%	70.0-120	1	06/30/20 08:38			



Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (47-50)	Lab ID:	10522971002	Collected: 0	06/25/2	0 16:00	Received: (	06/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report L	_imit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	010D Preparat	ion Me	thod: EF	PA 3010A			
	Pace Anal	ytical Services -	Minneapolis						
Lead, Dissolved	NE	ug/L		10.0	1	06/30/20 14:1	7 07/01/20 19:5	0 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical	Method: EPA 82	270E by SIM F	Prepara	ation Met	hod: EPA Mod	. 3510C		
oz. oz moot 11 bioxano 27 cim	-	ytical Services -		. op a. o					
1,4-Dioxane (SIM)	NE	ug/L		0.26	1	06/26/20 14:1	9 06/30/20 12:3	3 123-91-1	M1
Surrogates									
1,4-Dioxane-d8 (S)	43	8 %.	30	)-125	1	06/26/20 14:1	9 06/30/20 12:3	3	
/OA (GC/MS) 8260D	Analytical	Method: EPA 82	260D Preparat	ion Me	thod: 82	60D			
(		onal - Mt. Juliet							
Acetone	NE	J		50.0	1	06/30/20 08:5			
Allyl chloride	NE	J		5.00	1		9 06/30/20 08:5		
Benzene	NE	J		1.00	1		9 06/30/20 08:5		
Bromobenzene	NE	ū		1.00	1		9 06/30/20 08:5		
Bromochloromethane	NE	J		1.00	1		9 06/30/20 08:5		
Bromodichloromethane	NE	J		1.00	1		9 06/30/20 08:5		
Bromoform	NE	J		1.00	1		9 06/30/20 08:5		
Bromomethane	NE	ū		5.00	1		9 06/30/20 08:5		
-Butylbenzene	NE	ū		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 104-51-8	
ec-Butylbenzene	NE	J		1.00	1		9 06/30/20 08:5		
ert-Butylbenzene	NE	) ug/L		1.00	1		9 06/30/20 08:5		
Carbon tetrachloride	NE	) ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 56-23-5	
Chlorobenzene	NE	•		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 108-90-7	L0
Dibromochloromethane	NE	) ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 124-48-1	
Chloroethane	NE	) ug/L		5.00	1	06/30/20 08:5	9 06/30/20 08:5	9 75-00-3	
Chloroform	NE	) ug/L		5.00	1	06/30/20 08:5	9 06/30/20 08:5	9 67-66-3	
Chloromethane	NE	) ug/L		2.50	1	06/30/20 08:5	9 06/30/20 08:5	9 74-87-3	
2-Chlorotoluene	NE	ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 95-49-8	
I-Chlorotoluene	NE	) ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 106-43-4	
,2-Dibromo-3-chloropropane	NE	) ug/L		5.00	1	06/30/20 08:5	9 06/30/20 08:5	9 96-12-8	
,2-Dibromoethane (EDB)	NE	ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 106-93-4	
Dibromomethane	NE	ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 74-95-3	
,2-Dichlorobenzene	NE	ug/L		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 95-50-1	
,3-Dichlorobenzene	NE	•		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 541-73-1	
,4-Dichlorobenzene	NE	-		1.00	1	06/30/20 08:5	9 06/30/20 08:5	9 106-46-7	
Dichlorodifluoromethane	NE			5.00	1	06/30/20 08:5	9 06/30/20 08:5	9 75-71-8	
Dichlorofluoromethane	NE	ū		5.00	1		9 06/30/20 08:5		
,1-Dichloroethane	NE	-		1.00	1		9 06/30/20 08:5		
,2-Dichloroethane	NE	ū		1.00	1		9 06/30/20 08:5		
,1-Dichloroethene	NE	ū		1.00	1	06/30/20 08:5			
cis-1,2-Dichloroethene	NE	•		1.00	1	06/30/20 08:5			
rans-1,2-Dichloroethene	NE	-		1.00	1		9 06/30/20 08:5		
1,2-Dichloropropane	NE	-		1.00	1		9 06/30/20 08:5		
,1-Dichloropropene	NE	ū		1.00	1		9 06/30/20 08:5		
,3-Dichloropropane	NE NE	J		1.00	1	06/30/20 08:5			
cis-1,3-Dichloropropene	NE NE	•		1.00	1	06/30/20 08:5			

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (47-50)	Lab ID:	10522971002	Collected: 06/25/2	20 16:00	Received: 06	3/26/20 09:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical I	Method: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace Natio	nal - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 08:59	06/30/20 08:59	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 08:59	06/30/20 08:59	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 08:59	06/30/20 08:59	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 08:59	06/30/20 08:59	60-29-7	
Hexachloro-1,3-butadiene	ND	_	1.00	1	06/30/20 08:59	06/30/20 08:59	87-68-3	
sopropylbenzene (Cumene)	ND	_	1.00	1	06/30/20 08:59	06/30/20 08:59	98-82-8	
o-Isopropyltoluene	ND		1.00	1	06/30/20 08:59	06/30/20 08:59	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 08:59	06/30/20 08:59	78-93-3	
Methylene Chloride	ND	-	5.00	1	06/30/20 08:59	06/30/20 08:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	•	10.0	1	06/30/20 08:59	06/30/20 08:59	108-10-1	
Methyl-tert-butyl ether	ND	0	1.00	1	06/30/20 08:59			
Naphthalene	ND	U	5.00	1	06/30/20 08:59			
n-Propylbenzene	ND	Ū	1.00	1		06/30/20 08:59		
Styrene	ND	-	1.00	1		06/30/20 08:59		
1,1,1,2-Tetrachloroethane	ND	J	1.00	1	06/30/20 08:59	06/30/20 08:59	630-20-6	
1,1,2,2-Tetrachloroethane	ND	_	1.00	1		06/30/20 08:59		
1,1,2-Trichlorotrifluoroethane	ND	•	1.00	1		06/30/20 08:59		
Tetrachloroethene	ND	0	1.00	1		06/30/20 08:59		L0
Tetrahydrofuran	ND	_	5.00	1		06/30/20 08:59		
Foluene	ND	_	1.00	1	06/30/20 08:59			
1,2,3-Trichlorobenzene	ND	-	1.00	1		06/30/20 08:59		
1,2,4-Trichlorobenzene	ND	0	1.00	1		06/30/20 08:59		
1,1,1-Trichloroethane	ND	_	1.00	1		06/30/20 08:59		
1,1,2-Trichloroethane	ND	-	1.00	1		06/30/20 08:59		LO
Frichloroethene	ND	U	1.00	1				L0
Frichlorofluoromethane	ND	-	5.00	1		06/30/20 08:59		LO
1,2,3-Trichloropropane	ND	Ū	2.50	1		06/30/20 08:59		
,2,4-Trimethylbenzene	ND	_	1.00	1	06/30/20 08:59			
,3,5-Trimethylbenzene	ND	Ū	1.00	1		06/30/20 08:59		
/inyl chloride	NC NC	-	1.00	1	06/30/20 08:59			
Xylene (Total)	NC NC	U	3.00	1		06/30/20 08:59		
Surrogates	INL	, ug/L	3.00	1	00/30/20 00.39	00/30/20 00.59	1330-20-7	
Foluene-d8 (S)	108	8 %	80.0-120	1	06/30/20 08:59	06/30/20 08:59	2037-26-5	
4-Bromofluorobenzene (S)	98.3		77.0-126	1	06/30/20 08:59			
1,2-Dichloroethane-d4 (S)	113		70.0-120	1	06/30/20 08:59			



Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (68-72)	Lab ID: 10	522971003	Collected: 06/25/2	20 18:00	Received: 00	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Me	thod: EPA 60	010D Preparation Me	ethod: El	PA 3010A			
	Pace Analytic	al Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 20:0	5 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Me	thod: EPA 82	270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C		
	Pace Analytic	al Services -	Minneapolis					
1,4-Dioxane (SIM) <b>Surrogates</b>	0.32	ug/L	0.25	1	06/26/20 14:19	06/30/20 13:5	6 123-91-1	
1,4-Dioxane-d8 (S)	40	%.	30-125	1	06/26/20 14:19	06/30/20 13:5	6	
VOA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparation Me	ethod: 82	260D			
,	Pace Nationa							
Acetone	ND		50.0	1	06/30/20 00:40	06/30/20 09:1	0 67-64 1	
Acetone	ND ND	ug/L	50.0 5.00	1		06/30/20 09:1		
Allyl chloride Benzene		ug/L	5.00 1.00	1		06/30/20 09:1		
	ND	ug/L						
Bromobleremethane	ND	ug/L	1.00	1		06/30/20 09:1		
Bromochloromethane	ND	ug/L	1.00	1		06/30/20 09:1		
Bromodichloromethane	ND	ug/L	1.00	1		06/30/20 09:1		
Bromoform	ND	ug/L	1.00	1		06/30/20 09:1		
Bromomethane	ND	ug/L	5.00	1		06/30/20 09:1		
n-Butylbenzene	ND	ug/L	1.00	1		06/30/20 09:1		
sec-Butylbenzene	ND	ug/L	1.00	1		06/30/20 09:1		
tert-Butylbenzene	ND	ug/L	1.00	1		06/30/20 09:1		
Carbon tetrachloride	ND	ug/L	1.00	1		06/30/20 09:1		
Chlorobenzene	ND	ug/L	1.00	1		06/30/20 09:1		L0
Dibromochloromethane	ND	ug/L	1.00	1		06/30/20 09:1		
Chloroethane	ND	ug/L	5.00	1		06/30/20 09:1		
Chloroform	ND	ug/L	5.00	1	06/30/20 09:19	06/30/20 09:1	9 67-66-3	
Chloromethane	ND	ug/L	2.50	1	06/30/20 09:19	06/30/20 09:1	9 74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 95-49-8	
4-Chlorotoluene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	06/30/20 09:19	06/30/20 09:1	9 96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:1	9 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1		06/30/20 09:1		
Dichlorodifluoromethane	ND	ug/L	5.00	1		06/30/20 09:1		
Dichlorofluoromethane	ND	ug/L	5.00	1		06/30/20 09:1		
1,1-Dichloroethane	ND	ug/L	1.00	1		06/30/20 09:1		
1,2-Dichloroethane	ND	ug/L	1.00	1		06/30/20 09:1		
1.1-Dichloroethene	ND	ug/L	1.00	1		06/30/20 09:1		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		06/30/20 09:1		
trans-1,2-Dichloroethene	ND	ug/L	1.00	1		06/30/20 09:1		
1,2-Dichloropropane	ND ND	ug/L	1.00	1		06/30/20 09:1		
1,1-Dichloropropene	ND ND	ug/L ug/L	1.00	1		06/30/20 09:1		
' '		•						
1,3-Dichloropropane cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00 1.00	1 1		06/30/20 09:1 06/30/20 09:1		
313-1,3-DIGHIGIOPTOPENE	טא	ug/L	1.00	1	00/30/20 09.19	00/30/20 09.1	9 10001-01-5	



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (68-72)	Lab ID: 105	22971003	Collected: 06/25/2	20 18:00	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	06/30/20 09:19	06/30/20 09:19	9 78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	06/30/20 09:19	06/30/20 09:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	06/30/20 09:19	06/30/20 09:19	9 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 1634-04-4	
Naphthalene	ND	ug/L	5.00	1	06/30/20 09:19			
n-Propylbenzene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 09:19	06/30/20 09:19	9 79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 09:19			
Tetrachloroethene	ND	ug/L	1.00	1	06/30/20 09:19			L0
Tetrahydrofuran	ND	ug/L	5.00	1	06/30/20 09:19			
Toluene	ND	ug/L	1.00	1	06/30/20 09:19			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 09:19			
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 09:19			
,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 09:19			
1,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 09:19			LO
richloroethene	ND	ug/L	1.00	1	06/30/20 09:19			L0
Trichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 09:19			
1,2,3-Trichloropropane	ND	ug/L	2.50	1	06/30/20 09:19			
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	06/30/20 09:19			
,3,5-Trimethylbenzene	ND ND	ug/L	1.00	1	06/30/20 09:19			
/inyl chloride	ND ND	ug/L	1.00	1	06/30/20 09:19			
Kylene (Total)	ND ND	ug/L ug/L	3.00	1	06/30/20 09:19			
Surrogates	IND	ug/L	3.00	'	00/30/20 03.13	00/00/20 09.18	1330-20-7	
Foluene-d8 (S)	110	%	80.0-120	1	06/30/20 09:19	06/30/20 09:19	9 2037-26-5	
4-Bromofluorobenzene (S)	95.9	%	77.0-126	1	06/30/20 09:19			
1,2-Dichloroethane-d4 (S)	114	%	70.0-130	1	06/30/20 09:19			



Project: 2606-0017 Water Gremlin

Date: 07/14/2020 11:57 AM

Sample: GP-35 (88-90)	Lab ID: 105	22971004	Collected: 06/25/2	0 19:00	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	06/30/20 14:17	07/01/20 20:0	8 7439-92-1	
8270E MSSV 14 Dioxane By SIM			270E by SIM Prepara	ation Me	thod: EPA Mod. 3	3510C		
	Pace Analytica	l Services -	Minneapolis					
1,4-Dioxane (SIM)	ND	ug/L	0.89	1	07/06/20 17:48	07/08/20 13:5	6 123-91-1	H2,P1
Surrogates 1,4-Dioxane-d8 (S)	37	%.	30-125	1	07/06/20 17:48	07/08/20 13:5	ô	
,								
VOA (GC/MS) 8260D	•		260D Preparation Me	etnoa: 82	260D			
	Pace National	- IVIT. JUIIET						
Acetone	ND	ug/L	500	10	06/30/20 10:19	06/30/20 10:1	9 67-64-1	
Allyl chloride	ND	ug/L	50.0	10	06/30/20 10:19	06/30/20 10:1	9 107-05-1	
Benzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 71-43-2	
Bromobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 108-86-1	
Bromochloromethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 74-97-5	
Bromodichloromethane	ND	ug/L	10.0	10	06/30/20 10:19			
Bromoform	ND	ug/L	10.0	10	06/30/20 10:19			
Bromomethane	ND	ug/L	50.0	10	06/30/20 10:19			
n-Butylbenzene	ND	ug/L	10.0	10	06/30/20 10:19			
sec-Butylbenzene	ND	ug/L	10.0	10	06/30/20 10:19			
ert-Butylbenzene	ND	ug/L	10.0	10	06/30/20 10:19			
Carbon tetrachloride	ND	ug/L	10.0	10	06/30/20 10:19			
Chlorobenzene	ND ND	_	10.0	10	06/30/20 10:19			L0
		ug/L						LU
Dibromochloromethane	ND	ug/L	10.0	10	06/30/20 10:19			
Chloroethane	ND	ug/L	50.0	10	06/30/20 10:19			
Chloroform	ND	ug/L	50.0	10	06/30/20 10:19			
Chloromethane	ND	ug/L	25.0	10	06/30/20 10:19			
2-Chlorotoluene	ND	ug/L	10.0	10	06/30/20 10:19			
1-Chlorotoluene	ND	ug/L	10.0	10	06/30/20 10:19			
1,2-Dibromo-3-chloropropane	ND	ug/L	50.0	10	06/30/20 10:19			
I,2-Dibromoethane (EDB)	ND	ug/L	10.0	10	06/30/20 10:19			
Dibromomethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 74-95-3	
,2-Dichlorobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 106-46-7	
Dichlorodifluoromethane	ND	ug/L	50.0	10	06/30/20 10:19	06/30/20 10:1	9 75-71-8	
Dichlorofluoromethane	ND	ug/L	50.0	10	06/30/20 10:19	06/30/20 10:1	9 75-43-4	
,1-Dichloroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:1	9 75-34-3	
,2-Dichloroethane	ND	ug/L	10.0	10	06/30/20 10:19			
1,1-Dichloroethene	ND	ug/L	10.0	10	06/30/20 10:19			
cis-1,2-Dichloroethene	ND	ug/L	10.0	10	06/30/20 10:19			
rans-1,2-Dichloroethene	ND	ug/L	10.0	10	06/30/20 10:19			
1,2-Dichloropropane	ND	ug/L	10.0	10	06/30/20 10:19			
1,1-Dichloropropene	ND	ug/L	10.0	10	06/30/20 10:19			
I,3-Dichloropropene	ND ND	•	10.0	10	06/30/20 10:19			
cis-1,3-Dichloropropane	ND ND	ug/L ug/L	10.0	10	06/30/20 10:19			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: GP-35 (88-90)	Lab ID: 105	22971004	Collected: 06/25	/20 19:00	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	:60D Preparation	/lethod: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	10061-02-6	
2,2-Dichloropropane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 594-20-7	
Ethylbenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	98-82-8	
o-Isopropyltoluene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	99-87-6	
2-Butanone (MEK)	ND	ug/L	10	10		06/30/20 10:19		
Methylene Chloride	ND	ug/L	50.0	10		06/30/20 10:19		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10	10	06/30/20 10:19	06/30/20 10:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	1634-04-4	
laphthalene	ND	ug/L	50.0	10	06/30/20 10:19	06/30/20 10:19	91-20-3	
-Propylbenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	103-65-1	
Styrene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	76-13-1	
etrachloroethene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	127-18-4	L0
Tetrahydrofuran	ND	ug/L	50.0	10	06/30/20 10:19	06/30/20 10:19	109-99-9	
oluene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	108-88-3	
,2,3-Trichlorobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	9 87-61-6	
,2,4-Trichlorobenzene	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	120-82-1	
,1,1-Trichloroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	71-55-6	
,1,2-Trichloroethane	ND	ug/L	10.0	10	06/30/20 10:19	06/30/20 10:19	79-00-5	L0
Trichloroethene	ND	ug/L	10.0	) 10	06/30/20 10:19	06/30/20 10:19	79-01-6	L0
richlorofluoromethane	ND	ug/L	50.0	) 10	06/30/20 10:19	06/30/20 10:19	75-69-4	
,2,3-Trichloropropane	ND	ug/L	25.0			06/30/20 10:19		
,2,4-Trimethylbenzene	ND	ug/L	10.0			06/30/20 10:19		
,3,5-Trimethylbenzene	ND	ug/L	10.0			06/30/20 10:19		
/inyl chloride	ND	ug/L	10.0			06/30/20 10:19		
(ylene (Total)	ND	ug/L	30.0			06/30/20 10:19		
Surrogates		- 3		-				
oluene-d8 (S)	108	%	80.0-12	10	06/30/20 10:19	06/30/20 10:19	2037-26-5	
-Bromofluorobenzene (S)	98.4	%	77.0-12	10	06/30/20 10:19	06/30/20 10:19	9 460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70.0-13	) 10	06/30/20 10:19	06/30/20 10:19	9 17060-07-0	



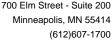
# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: HCL Trip Blank	Lab ID: 10	522971005	Collected: 0	06/25/20	00:00	Received: 06	6/26/20 09:00	Matrix: Water	
Parameters	Results	Units	Report L	_imit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparat	tion Met	thod: 82	60D			
	Pace Nationa	ıl - Mt. Juliet							
Acetone	ND	ug/L		50.0	1	06/30/20 02:28	06/30/20 02:28	R 67-64-1	
Allyl chloride	ND	ug/L		5.00	1		06/30/20 02:28		
Benzene	ND	ug/L		1.00	1		06/30/20 02:28		
Bromobenzene	ND	ug/L		1.00	1		06/30/20 02:28		
Bromochloromethane	ND	ug/L		1.00	1		06/30/20 02:28		
Bromodichloromethane	ND	ug/L		1.00	1		06/30/20 02:28		
Bromoform	ND	ug/L		1.00	1		06/30/20 02:28		
Bromomethane	ND	ug/L		5.00	1		06/30/20 02:28		
n-Butylbenzene	ND	ug/L		1.00	1		06/30/20 02:28		
sec-Butylbenzene	ND	ug/L		1.00	1		06/30/20 02:28		
tert-Butylbenzene	ND	ug/L		1.00	1		06/30/20 02:28		
Carbon tetrachloride	ND	ug/L		1.00	1		06/30/20 02:28		
Chlorobenzene	ND	ug/L		1.00	1		06/30/20 02:28		L0
Dibromochloromethane	ND	ug/L		1.00	1		06/30/20 02:28		
Chloroethane	ND	ug/L		5.00	1		06/30/20 02:28		
Chloroform	ND	ug/L		5.00	1		06/30/20 02:28		
Chloromethane	ND	ug/L		2.50	1		06/30/20 02:28		
2-Chlorotoluene	ND	ug/L		1.00	1		06/30/20 02:28		
4-Chlorotoluene	ND	ug/L		1.00	1		06/30/20 02:28		
1,2-Dibromo-3-chloropropane	ND	ug/L		5.00	1		06/30/20 02:28		
1,2-Dibromoethane (EDB)	ND	ug/L		1.00	1		06/30/20 02:28		
Dibromomethane	ND	ug/L		1.00	1		06/30/20 02:28		
1,2-Dichlorobenzene	ND	ug/L		1.00	1		06/30/20 02:28		
1,3-Dichlorobenzene	ND	ug/L		1.00	1		06/30/20 02:28		
1,4-Dichlorobenzene	ND	ug/L		1.00	1		06/30/20 02:28		
Dichlorodifluoromethane	ND	ug/L		5.00	1		06/30/20 02:28		
Dichlorofluoromethane	ND	ug/L		5.00	1		06/30/20 02:28		
1,1-Dichloroethane	ND	ug/L		1.00	1		06/30/20 02:28		
1,2-Dichloroethane	ND	ug/L		1.00	1		06/30/20 02:28		
1,1-Dichloroethene	ND	ug/L		1.00	1		06/30/20 02:28		
cis-1,2-Dichloroethene	ND	ug/L		1.00	1		06/30/20 02:28		
trans-1,2-Dichloroethene	ND	ug/L		1.00	1		06/30/20 02:28		
1,2-Dichloropropane	ND	ug/L		1.00	1		06/30/20 02:28		
1,1-Dichloropropene	ND	ug/L		1.00	1		06/30/20 02:28		
1,3-Dichloropropane	ND	ug/L		1.00	1		06/30/20 02:28		
cis-1,3-Dichloropropene	ND	ug/L		1.00	1		06/30/20 02:28		
rans-1,3-Dichloropropene	ND	ug/L		1.00	1		06/30/20 02:28		
2,2-Dichloropropane	ND	ug/L		1.00	1		06/30/20 02:28		
Ethylbenzene	ND	ug/L		1.00	1		06/30/20 02:28		
Diethyl ether (Ethyl ether)	ND	ug/L		1.00	1		06/30/20 02:28		
Hexachloro-1,3-butadiene	ND	ug/L		1.00	1		06/30/20 02:28		
sopropylbenzene (Cumene)	ND ND	ug/L		1.00	1		06/30/20 02:28		
o-Isopropyltoluene	ND ND	ug/L		1.00	1		06/30/20 02:28		
2-Butanone (MEK)	ND ND	ug/L		10.0	1		06/30/20 02:28		
Methylene Chloride	ND ND	ug/L ug/L		5.00	1		06/30/20 02:28		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L ug/L		10.0	1	06/30/20 02:28			





Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Sample: HCL Trip Blank	Lab ID: 1052	22971005	Collected: 06/25/2	20 00:00	Received: 06	/26/20 09:00 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	06/30/20 02:28	06/30/20 02:28	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	103-65-1	
Styrene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	127-18-4	L0
Tetrahydrofuran	ND	ug/L	5.00	1	06/30/20 02:28	06/30/20 02:28	109-99-9	
Toluene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	79-00-5	L0
Trichloroethene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	79-01-6	L0
Trichlorofluoromethane	ND	ug/L	5.00	1	06/30/20 02:28	06/30/20 02:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	06/30/20 02:28	06/30/20 02:28	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	06/30/20 02:28	06/30/20 02:28	75-01-4	
Xylene (Total)	ND	ug/L	3.00	1	06/30/20 02:28	06/30/20 02:28	1330-20-7	
Surrogates								
Toluene-d8 (S)	106	%	80.0-120	1	06/30/20 02:28	06/30/20 02:28	2037-26-5	
4-Bromofluorobenzene (S)	99.5	%	77.0-126	1	06/30/20 02:28	06/30/20 02:28	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70.0-130	1	06/30/20 02:28	06/30/20 02:28	17060-07-0	

700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

QC Batch: 684138 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10522971001, 10522971002, 10522971003, 10522971004

METHOD BLANK: 3659785 Matrix: Water

Associated Lab Samples: 10522971001, 10522971002, 10522971003, 10522971004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/01/20 19:21

LABORATORY CONTROL SAMPLE: 3659786

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead, Dissolved ug/L 1000 969 97 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3659787 3659788

MS MSD

10522971002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec **RPD** RPD Qual Result % Rec Limits Lead, Dissolved ND ug/L 1000 1000 939 932 94 93 75-125 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

QC Batch: 1501394 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10522971001, 10522971002, 10522971003, 10522971004, 10522971005

METHOD BLANK: R3545773-3 Matrix: Water

Associated Lab Samples: 10522971001, 10522971002, 10522971003, 10522971004, 10522971005

Down	17-9-	Blank	Reporting	A 1	Qualifiers	
Parameter	Units	Result	Limit	Analyzed		
Acetone	ug/L	ND	50.0	06/30/20 01:50		
Benzene	ug/L	ND	1.00	06/30/20 01:50		
Bromobenzene	ug/L	ND	1.00	06/30/20 01:50		
Bromodichloromethane	ug/L	ND	1.00	06/30/20 01:50		
Bromochloromethane	ug/L	ND	1.00	06/30/20 01:50		
Bromoform	ug/L	ND	1.00	06/30/20 01:50		
Bromomethane	ug/L	ND	5.00	06/30/20 01:50		
n-Butylbenzene	ug/L	ND	1.00	06/30/20 01:50		
sec-Butylbenzene	ug/L	ND	1.00	06/30/20 01:50		
ert-Butylbenzene	ug/L	ND	1.00	06/30/20 01:50		
Carbon tetrachloride	ug/L	ND	1.00	06/30/20 01:50		
Chlorobenzene	ug/L	ND	1.00	06/30/20 01:50		
Dibromochloromethane	ug/L	ND	1.00	06/30/20 01:50		
Chloroethane	ug/L	ND	5.00	06/30/20 01:50		
Chloroform	ug/L	ND	5.00	06/30/20 01:50		
Chloromethane	ug/L	ND	2.50	06/30/20 01:50		
2-Chlorotoluene	ug/L	ND	1.00	06/30/20 01:50		
I-Chlorotoluene	ug/L	ND	1.00	06/30/20 01:50		
,2-Dibromo-3-chloropropane	ug/L	ND	5.00	06/30/20 01:50		
,2-Dibromoethane (EDB)	ug/L	ND	1.00	06/30/20 01:50		
Dibromomethane	ug/L	ND	1.00	06/30/20 01:50		
,2-Dichlorobenzene	ug/L	ND	1.00	06/30/20 01:50		
,3-Dichlorobenzene	ug/L	ND	1.00	06/30/20 01:50		
,4-Dichlorobenzene	ug/L	ND	1.00	06/30/20 01:50		
Dichlorodifluoromethane	ug/L	ND	5.00	06/30/20 01:50		
Dichlorofluoromethane	ug/L	ND	5.00	06/30/20 01:50		
,1-Dichloroethane	ug/L	ND	1.00	06/30/20 01:50		
,2-Dichloroethane	ug/L	ND	1.00	06/30/20 01:50		
,1-Dichloroethene	ug/L	ND	1.00	06/30/20 01:50		
cis-1,2-Dichloroethene	ug/L	ND	1.00	06/30/20 01:50		
rans-1,2-Dichloroethene	ug/L	ND	1.00	06/30/20 01:50		
,2-Dichloropropane	ug/L	ND	1.00	06/30/20 01:50		
I,1-Dichloropropene	ug/L	ND	1.00	06/30/20 01:50		
I,3-Dichloropropane	ug/L	ND	1.00	06/30/20 01:50		
cis-1,3-Dichloropropene	ug/L	ND	1.00	06/30/20 01:50		
rans-1,3-Dichloropropene	ug/L	ND	1.00	06/30/20 01:50		
2,2-Dichloropropane	ug/L	ND	1.00	06/30/20 01:50		
Ethylbenzene	ug/L	ND	1.00	06/30/20 01:50		
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	06/30/20 01:50		
Hexachloro-1,3-butadiene	ug/L	ND	1.00	06/30/20 01:50		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

METHOD BLANK: R3545773-3 Matrix: Water

Associated Lab Samples: 10522971001, 10522971002, 10522971003, 10522971004, 10522971005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	06/30/20 01:50	
p-Isopropyltoluene	ug/L	ND	1.00	06/30/20 01:50	
2-Butanone (MEK)	ug/L	ND	10.0	06/30/20 01:50	
Methylene Chloride	ug/L	ND	5.00	06/30/20 01:50	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	06/30/20 01:50	
Methyl-tert-butyl ether	ug/L	ND	1.00	06/30/20 01:50	
Naphthalene	ug/L	ND	5.00	06/30/20 01:50	
n-Propylbenzene	ug/L	ND	1.00	06/30/20 01:50	
Styrene	ug/L	ND	1.00	06/30/20 01:50	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	06/30/20 01:50	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	06/30/20 01:50	
Tetrachloroethene	ug/L	ND	1.00	06/30/20 01:50	
Tetrahydrofuran	ug/L	ND	5.00	06/30/20 01:50	
Toluene	ug/L	ND	1.00	06/30/20 01:50	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	06/30/20 01:50	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	06/30/20 01:50	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	06/30/20 01:50	
1,1,1-Trichloroethane	ug/L	ND	1.00	06/30/20 01:50	
1,1,2-Trichloroethane	ug/L	ND	1.00	06/30/20 01:50	
Trichloroethene	ug/L	ND	1.00	06/30/20 01:50	
Trichlorofluoromethane	ug/L	ND	5.00	06/30/20 01:50	
1,2,3-Trichloropropane	ug/L	ND	2.50	06/30/20 01:50	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	06/30/20 01:50	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	06/30/20 01:50	
Vinyl chloride	ug/L	ND	1.00	06/30/20 01:50	
Xylene (Total)	ug/L	ND	3.00	06/30/20 01:50	
Allyl chloride	ug/L	ND	5.00	06/30/20 01:50	
Toluene-d8 (S)	%	106	80.0-120	06/30/20 01:50	
4-Bromofluorobenzene (S)	%	95.7	77.0-126	06/30/20 01:50	
1,2-Dichloroethane-d4 (S)	%	109	70.0-130	06/30/20 01:50	

LABORATORY CONTROL SAMPLE & L	CSD: R3545	773-1	R	3545773-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	23.9	24.1	95.6	96.4	19.0-160	0.833	27	
Benzene	ug/L	5.00	5.38	5.18	108	104	70.0-123	3.79	20	
Bromobenzene	ug/L	5.00	4.83	4.30	96.6	86.0	73.0-121	11.6	20	
Bromodichloromethane	ug/L	5.00	5.50	5.43	110	109	75.0-120	1.28	20	
Bromochloromethane	ug/L	5.00	5.81	5.82	116	116	76.0-122	0.172	20	
Bromoform	ug/L	5.00	5.87	5.43	117	109	68.0-132	7.79	20	
Bromomethane	ug/L	5.00	5.66	5.51	113	110	10.0-160	2.69	25	
n-Butylbenzene	ug/L	5.00	5.13	4.44	103	88.8	73.0-125	14.4	20	
sec-Butylbenzene	ug/L	5.00	5.28	4.60	106	92.0	75.0-125	13.8	20	
tert-Butylbenzene	ug/L	5.00	5.14	4.43	103	88.6	76.0-124	14.8	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

LABORATORY CONTROL SAMPLE 8	LCSD: R3545			3545773-2						
5 .	11.2	Spike	LCS	LCSD	LCS	LCSD	% Rec	555	Max	0 110
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
Carbon tetrachloride	ug/L	5.00	5.61	5.33		107	68.0-126	5.12	20	
Chlorobenzene	ug/L	5.00	6.45	6.02	129	120	80.0-121	6.90	20 1	_0
Dibromochloromethane	ug/L	5.00	6.22	6.04	124	121	77.0-125	2.94	20	
Chloroethane	ug/L	5.00	5.41	5.40	108	108	47.0-150	0.185	20	
Chloroform	ug/L	5.00	5.48	5.29	110	106	73.0-120	3.53	20	
Chloromethane	ug/L	5.00	5.46	5.56	109	111	41.0-142	1.81	20	
2-Chlorotoluene	ug/L	5.00	4.88	4.39	97.6	87.8	76.0-123	10.6	20	
1-Chlorotoluene	ug/L	5.00	4.75	4.27	95.0	85.4	75.0-122	10.6	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	5.67	5.06	113	101	58.0-134	11.4	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	5.60	5.44	112	109	80.0-122	2.90	20	
Dibromomethane	ug/L	5.00	5.33	5.22	107	104	80.0-120	2.09	20	
1,2-Dichlorobenzene	ug/L	5.00	5.62	4.94	112	98.8	79.0-121	12.9	20	
1,3-Dichlorobenzene	ug/L	5.00	5.50	4.97		99.4	79.0-120	10.1	20	
1,4-Dichlorobenzene	ug/L	5.00	5.24	4.73		94.6	79.0-120	10.2	20	
Dichlorodifluoromethane	ug/L	5.00	6.55	6.62			51.0-149	1.06	20	
Dichlorofluoromethane	ug/L	5.00	5.89	5.72		114	65.0-133	2.93	20	
1,1-Dichloroethane	ug/L	5.00	5.14	5.11	103	102		0.585	20	
I,2-Dichloroethane	ug/L	5.00	5.55	5.47		109	70.0-128	1.45	20	
,1-Dichloroethene	ug/L	5.00	5.65	5.54		111	71.0-124	1.97	20	
cis-1,2-Dichloroethene	ug/L	5.00	5.33	5.25		105	73.0-124	1.51	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.19	5.24		105	73.0-120	0.959	20	
1,2-Dichloropropane	ug/L	5.00	4.93	4.83		96.6	77.0-125	2.05	20	
,1-Dichloropropene	ug/L	5.00	5.05	5.14		103	74.0-126	1.77	20	
I,3-Dichloropropene	ug/L	5.00	5.37	5.02		100	80.0-120	6.74	20	
• •	ug/L ug/L	5.00	3.37 4.97	4.90		98.0	80.0-120	1.42	20	
cis-1,3-Dichloropropene										
rans-1,3-Dichloropropene	ug/L	5.00	5.28	5.10		102		3.47	20	
2,2-Dichloropropane	ug/L	5.00	5.28	4.93		98.6	58.0-130	6.86	20	
Ethylbenzene	ug/L	5.00	5.87	5.59			79.0-123	4.89	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.35	4.28		85.6	66.0-130	1.62	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.78	5.05		101	54.0-138	13.5	20	
sopropylbenzene (Cumene)	ug/L	5.00	6.06	5.75		115	76.0-127	5.25	20	
o-Isopropyltoluene	ug/L	5.00	5.12	4.61	102	92.2		10.5	20	
2-Butanone (MEK)	ug/L	25.0	27.2	26.3		105	44.0-160	3.36	20	
Methylene Chloride	ug/L	5.00	4.84	4.59		91.8	67.0-120	5.30	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	29.0	28.1	116		68.0-142	3.15	20	
Methyl-tert-butyl ether	ug/L	5.00	4.90	4.82		96.4		1.65	20	
Naphthalene	ug/L	5.00	4.87	4.36			54.0-135	11.1	20	
n-Propylbenzene	ug/L	5.00	5.11	4.50	102		77.0-124	12.7	20	
Styrene	ug/L	5.00	5.87	5.51	117		73.0-130	6.33	20	
I,1,1,2-Tetrachloroethane	ug/L	5.00	6.05	5.75	121		75.0-125	5.08	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	4.75	4.26	95.0		65.0-130	10.9	20	
Tetrachloroethene	ug/L	5.00	6.79	6.20	136	124	72.0-132	9.08	20	_0
Tetrahydrofuran	ug/L	5.00	4.81	4.39	96.2	87.8	41.0-146	9.13	20	
Toluene	ug/L	5.00	5.68	5.37	114	107	79.0-120	5.61	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.80	5.71	116	114	69.0-132	1.56	20	
1,2,3-Trichlorobenzene	ug/L	5.00	5.16	4.73	103	94.6	50.0-138	8.70	20	
1,2,4-Trichlorobenzene	ug/L	5.00	5.11	4.53	102		57.0-137	12.0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

LABORATORY CONTROL SAMPLE	& LCSD: R3545	773-1	R	3545773-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.72	5.57	114	111	73.0-124	2.66	20	
1,1,2-Trichloroethane	ug/L	5.00	6.10	5.73	122	115	80.0-120	6.26	20	L0
Trichloroethene	ug/L	5.00	6.40	6.29	128	126	78.0-124	1.73	20	L0
Trichlorofluoromethane	ug/L	5.00	6.55	6.59	131	132	59.0-147	0.609	20	
1,2,3-Trichloropropane	ug/L	5.00	4.70	4.46	94.0	89.2	73.0-130	5.24	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.61	4.10	92.2	82.0	76.0-121	11.7	20	
1,3,5-Trimethylbenzene	ug/L	5.00	5.00	4.32	100	86.4	76.0-122	14.6	20	
Vinyl chloride	ug/L	5.00	5.46	5.37	109	107	67.0-131	1.66	20	
Xylene (Total)	ug/L	15.0	17.1	16.2	114	108	79.0-123	5.41	20	
Allyl chloride	ug/L	25.0	26.1	25.5	104	102	72.0-128	2.33	20	
Toluene-d8 (S)	%				112	109	80.0-120			
4-Bromofluorobenzene (S)	%				101	99.7	77.0-126			
1,2-Dichloroethane-d4 (S)	%				113	110	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

QC Batch: 684799 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10522971001, 10522971002, 10522971003

METHOD BLANK: 3663035 Matrix: Water

Associated Lab Samples: 10522971001, 10522971002, 10522971003

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed 1,4-Dioxane (SIM) ND 0.25 06/30/20 11:31 ug/L 1,4-Dioxane-d8 (S) 37 30-125 06/30/20 11:31 %.

LABORATORY CONTROL SAMPLE: 3663036

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 94 32-128 ug/L 9.4 1,4-Dioxane-d8 (S) 35 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3663037 3663038 MS MSD 10522971002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L ND 10.5 10.5 12.9 16.5 121 155 32-130 30 M1 1,4-Dioxane-d8 (S) 47 50 30-125 %.

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





#### **QUALITY CONTROL DATA**

Project:

2606-0017 Water Gremlin

Pace Project No.:

10522971

QC Batch:

QC Batch Method:

685081

EPA Mod. 3510C

Analysis Method:

EPA 8270E by SIM

Analysis Description:

8270E Water 14 Dioxane by SIM

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples:

10522971004

METHOD BLANK: 3664339

9

Matrix: Water

Associated Lab Samples:

Date: 07/14/2020 11:57 AM

10522971004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (SIM)	ug/L	ND	0.25	07/08/20 12:54	
1,4-Dioxane-d8 (S)	%.	50	30-125	07/08/20 12:54	

LABORATORY CONTROL SAMPLE & LCS	SD: 3664340		36	64341						
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Farameter	UTIILS	COIIC.	Result	Result	% Kec	% Kec	LIIIIII	KPD	KFD	Qualifiers
1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S)	ug/L %.	10	10.9	10.8	109	108	32-128 30-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **SAMPLE QUALIFIERS**

Sample: 10522971004

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Lowest possible dilution due to sediment in sample vial.

#### **ANALYTE QUALIFIERS**

Date: 07/14/2020 11:57 AM

1M	Internal standard recovery outside laboratory control limits due to presence of sediment and emulsion.

- 2M Surrogate recovery outside laboratory control limits due to emulsion.
- H2 Extraction or preparation was conducted outside of the recognized method holding time.
- LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.
- P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10522971

Date: 07/14/2020 11:57 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10522971001	GP-35 (14-17)	EPA 3010A	684138	EPA 6010D	684425
10522971002	GP-35 (47-50)	EPA 3010A	684138	EPA 6010D	684425
10522971003	GP-35 (68-72)	EPA 3010A	684138	EPA 6010D	684425
10522971004	GP-35 (88-90)	EPA 3010A	684138	EPA 6010D	684425
10522971001	GP-35 (14-17)	EPA Mod. 3510C	684799	EPA 8270E by SIM	684917
10522971002	GP-35 (47-50)	EPA Mod. 3510C	684799	EPA 8270E by SIM	684917
0522971003	GP-35 (68-72)	EPA Mod. 3510C	684799	EPA 8270E by SIM	684917
10522971004	GP-35 (88-90)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10522971001	GP-35 (14-17)	8260D	1501394	EPA 8260D	1501394
10522971002	GP-35 (47-50)	8260D	1501394	EPA 8260D	1501394
10522971003	GP-35 (68-72)	8260D	1501394	EPA 8260D	1501394
10522971004	GP-35 (88-90)	8260D	1501394	EPA 8260D	1501394
10522971005	HCL Trip Blank	8260D	1501394	EPA 8260D	1501394

**'** अे ક છ .<u>3</u> 3 રં Samples Intact (V/V) Pace Project No./ Lab I.D. DRINKING WATER SAMPLE CONDITIONS 331001002 उट्टो २० १३५ 20 100 488 F-ALL-Q-020rev.07. 15-Feb-2007 200/00/488 Custody Sealed Cooler (Y/N) OTHER 00/02/ Ice (Y/N) Received on GROUND WATER Residual Chlorine (Y/N) O° ni qmaT 20 E 3 2020 REGULATORY AGENCY RCKA TIME Requested Analysis Filtered (Y/N) 220 Site Location STATE: NPDES DATE DATE Signed (MM/DD/YY): (MM/DD/YY): MO#:10522971 ŰST ACCEPTED BY / AFFILIATION DAZJ C3No221C 34AXOIC taeT sisylsnAt N/A Jedic SAMOSS Methanol 1052297 <sub>E</sub>O<sub>S</sub>S<sub>S</sub>N **Preservatives** HOBN HCI омн Р CHAIN-OF-CUSTODY / The Chain-of-Custody is a LEGAL DOCUM Invoice Informatic Company Name: <sup>†</sup>OS<sup>z</sup>H 1(6)/ Section C Pace Quote Reference: Pace Project Unpreserved 8 HACOMO # ОF СОИТАІИЕРЯ SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: SAMPLE TEMP AT COLLECTION DATE COMPOSITE END/GRAB E E CREMILL TONDER SERVICE COLLECTED DATE RELINQUISHED BY I AFFILIATION 88 8 § M 6-10-15/1900 COMPOSITE START STATES! Section B Required Project Information: PARON 5 SAMPLE TYPE (G=GRAB C=COMP) Project Number: (see valid codes to left) **BOOD XINTAM** Project Name opy To: 
 Valid Matrix Codes

 MATRIX
 CODE

 DENMANDER
 WY

 WASTE
 WY

 MASTE WW
 WI

 PRODUCT
 SI

 SOLL-SCUED
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 OIL
 WP

 AIR
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 AIR
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 200 Ø ちてきる ADDITIONAL COMMENTS Fax: n/a (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE SAMPLE ID Pace Analytical Section D Required Client Information equired Client Information Mpany: CENC SAN Due Date TI 5/4/2 6 ction A Page 25 of 29 ∞ o l

# Pace Analytical\*

# Document Name:

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt  I A S			Pro	oject #:	WO#:10522971
Courier: Dead by Dups					PM: AKA Due Date: 07/06/20
Courier: Fed Ex UPS Pace SpeeDec	∪ e	SPS ommercia	اع[و] al See Ex		CLIENT: WENCK
Tracking Number:	· · · · · · · · · · · · · · · · · · ·		[		
Custody Seal on Cooler/Box Present?	(No	Sea	ls Intact	?   Yes	Biological Tissue Frozen? Yes No No N/A
Packing Material: Bubble Wrap	ags [	None	□Oth	er:	Temp Blank? Yes No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)	ł .	Type of i	ce:	W/Vet [	BlueNoneDryMelted
Did Samples Originate in West Virginia? ☐Yes 🔻 🔊 Oo	We	ere All Co	ntainer 1	Temps Tak	ren? □Yes □No □No/A
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ter	mp blank	:	3.7	<sup>0</sup> C Average Corrected Temp
Correction Factor: + Cooler Temp Correcte	ed w/ten	np blank	<u>:</u>	<u>3,2</u>	(no temp blank only): See Exceptions  OC OC OC OC
USDA Regulated Soil: ( N/A, water sample/Other:		)			nitials of Person Examining Contents: <u>(026 Ze)</u>
Did samples originate in a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m			CA, FL, GA □No	-	amples originate from a foreign source (internationally, including ii and Puerto Rico)?
					88) and include with SCUR/COC paperwork.
		4	, _,-		COMMENTS:
Chain of Custody Present and Filled Out?	∑Yes	□No		1.	
Chain of Custody Relinguished?	Yes	□No		2.	
Sampler Name and/or Signature on COC?	Yes	□No	□N/A	3.	
Samples Arrived within Hold Time?	Ves	□No		4.	
Short Hold Time Analysis (<72 hr)?	□Yes	<b>\\\</b>		5.	ecal Coliform
Rush Turn Around Time Requested?	Yes	□No		6.	
Sufficient Volume?	Yes	□No		7.	
Correct Containers Used?	∑¥es	□No		8.	
-Pace Containers Used?	<u>D</u> Ýes	· □No			
Containers Intact?	Yes	□No	•	9.	
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	∑N/A	<del></del>	sediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	∑yes	□No		11. If no,	write ID/ Date/Time on Container Below:  See Exception
Matrix: Water Soil Oil Other					
All containers needing acid/base preservation have been checked?	Yes	□No_		12. Samp	le#
Checkeu:					·
All containers needing preservation are found to be in	□Yes	( <u>KIXI</u> )	- <b>N</b> A/A		☐ NaOH ☐ HNO₃ ☐ H₂SO₄ ☐ Zinc Acetate
compliance with EPA recommendation?	_		()		<del>_</del>
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)			Cours		or Res. Yes See Exception
Exceptions:(VOA, Coliform, TOC/DOC Oil and Grease,	Yes	□No	□n/a	Chlorine	
DRO/8015 (water) and Dioxin/PFAS	,			Res. Chlo	
Extra labels present on soil VOA or WIDRO containers?			N last /a	13.	See Exception
Headspace in VOA Vials (greater than 6mm)?	∐Yes ∐Yes	∏No ∑ivo	N/A □N/A	20.	
Trip Blank Present? Trip Blank Custody Seals Present?	∑Yes ∑Yes	□No □No	□N/A □N/A	14. Pac	e Trip Blank Lot # (if purchased): 260864
CLIENT NOTIFICATION/RESOLUTION					Field Data Required? Yes No
Person Contacted:				Date/T	• — —
Comments/Resolution:					
Project Manager Paulous		77			-
Project Manager Review:	complian	ce sample	s a convi	of this form	<b>Date:</b> 6/26/2020 will be sent to the North Carolina DEHNR Certification Office ( i.e. out of
hold, incorrect preservative, out of temp, incorrect containers).	Compilan	oc sample:	s, a cupy t	zi (1113 [UIIII	will be sent to the North Carolina Definit Certification Office ( 1.8 Out of

Labeled by: TN (1) / 5 Page 26 of 29

Woi	korder: 10522971 V	Vorkorder N	lame: 2606-001	7 Water Grer	mlin			Cert. N			x `		6/26/2	<b>No</b> 020	Res	ults F	Reques	sted B	y: 7/6/2020
	ort To		Subcontrac										Requ	estec	Analy				
Pace 1700 Suite Minr	ka Asp e Analytical Minnesota D Elm Street e 200 neapolis, MN 55414 ne (612)607-1700		Pace Nati 12065 Let Mt. Juliet,	oanon Road					0.0	D (Pace National) - TB	8260D (Pace National)	215		4					LIZ34205
-	To the state of th	X 100		ede jeden		P	reserv	ed Conta	ainers	8260D	y 826				100			100	
ltem	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	VGBH	VG9U			VOC by	voc b								LAB USE ONLY
1	GP-35 (14-17)	PS	6/25/2020 14:45	10522971001	Water	3	3	$\top$		$\top$	X								-0
2	GP-35 (47-50)	RQS	6/25/2020 16:00	10522971002	Water	9					X							April 1	, 0
3	GP-35 (68-72)	PS	6/25/2020 18:00	10522971003	Water	3	3				X								- 0
4	GP-35 (88-90)	PS	6/25/2020 19:00	10522971004	Water	6					X	(A		-	1180		-		. 30
5	HCL Trip Blank	PS	6/25/2020 00:00	10522971005	Water	2	-			X	X								. 05
			1- 1-		rete settine											Com	ments		
Trar	sfers Released By	PACE	Date/Time	Received I	Ву				Date/Ti	me	٦,	inpres	erved	vials	inclu	ded d	ue to e	fferves	scing. ok
2	100	A CK	o de de	1600							7								
3				2-	011				6/2	7/2	5 8	45							
Cal	oler Temperature on Rec	coint 1.7	°C Cus	tody Seal	Y or N	1	$\top$	Rece	ived o		_	),or	N			Sam	nles Ir	tact (	or N

(on= 29

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205 MET!

Jace Analytical Sal	ion aidu	dition	Upon Re	Sample Condition Upon Receipt (SCUR) - MN		Document Revised: 27Mar2020 Page 1 of 1	2020	
	EN	Doc /-FRM-I	Document No.:	Document No.: ENV-FRM-MIN4-0150 Rev.00		Pace Analytical Services Minneapolis	-	
Name:			Pro	Project #:	MO#: 10	10522971		1 1
Courier: Fed Ex UPS  Tracking Number:		Usps	See Exceptions		PM: AKA CLIENT: WENCK	Due Date:	07/06/20	
ooler/Box Present? Yes	å	Seal	Seals Intact?	Yes	NSO Biologic	Biological Tissue Frozen?	Tyes INO NA	É
Packing Material: Bubble Wrap Bubble Bags		None	Other:			Temp Blank?	Zves [	°N
Thermometer:		Type of Ice:		DWet 🗆 Blue	~	□Dry □Melted		
Did Samples Originate in West Virginia?   Ves   SBo	Wer	e All Con	tainer T	Were All Container Temps Taken?   Yes	å å	NA NA		
Temp should be above freezing to 6°C Cooler Temp Read w/temp blank:	d w/tem	p blank:		32	υ »	Average Corrected Temp (no temp blank only): 00	np ): See Exceptions 1 Container	xception
USDA Regulated Soil: ( NN NA, water sample/Other: )  Date/Initials of Person Examining Contents: ( )  Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internation) to LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?	d States:	AL, AR, C Jves Soil Che	A, FL, GA,	Date/Initials of Person E Did samples originate froi Hawail and Puerto Rico)? MN-Q-338) and include wi	Date/Initials of Person Examining Contents: Did samples originate from a foreign source (int Hawail and Puerto Rico)? IN-Q-338) and Include with SCUR/COC paper	ate/Initials of Person Examining Contents: (0262)  Did samples originate from a foreign source (internationally, including Hawail and Puerto Rico)?  Q-338) and include with SCUR/COC paperwork.	26 Z	2 %
Chain of Custody Present and Filled Out?	Z ves	N D		1		DMMEN 13:		
Chain of Custody Relinguished?	Nes	° N		2.		-		
Sampler Name and/or Signature on COC? Samples Arrived within Hold Time?		8 8 0	N/A	4 3				
Short Hold Time Analysis (<72 hr)?	Yes				orm   HPC   Tota	☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coll ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other	свор Пнех	Chrom
Rush Turn Around Time Requested?	N/es	° E		9 1				
Correct Containers Used?	S N	N C		. 00				
-Pace Containers Used?	Sie	° N			- 397	18		
Containers Intact?	- Wes	oN 🗆		.6				
Field Filtered Volume Received for Dissolved Tests? Is sufficient information available to reconcile the samples to the COC?  Matrix: 《Mwater ☐ Soil ☐ OII ☐ Other	Over Over	å å	MN/A	10. Is sedimen	<ol> <li>Is sediment visible in the dissolved contain.</li> <li>If no, write ID/ Date/Time on Container Below:</li> </ol>	Is sediment visible in the dissolved container? Yes no, write ID/ Date/Time on Container Below:		No See Exception
	Nes	o <sub>N</sub>	N/A	12. Sample #				
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO2, H,SO2, <2bH, NaOH > 9 Sulfide, NaOH>12 Cvanide)	Yes	(3)	A STORY	NaOH	HINO3	B	Zinc Acetate	etate
Exceptions: (DOA) Coliform, TOC/DOC Oil and Grease,	Nes N	No No	ON/A	Positive for Res. Chlorine?		pH Paper Lot#	See	See Exception
RO/8015 (Water) and DioxIn/PFAS				Res. Chlorine	0-6 Roll	0-6 Strip	0-14 Strip	rip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	Yes	28	NAA	13,			See	See Exception
Trip Blank Present? Trip Blank Custody Seals Present?		2 2   	N/A	14. Pace Trip Blank Lot #	lank Lot # (if pur	(if purchased): 2608169	50	
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Date/Time:		Field Data Required?	es No	
Comments/Resolution:			LIA DE					
Project Manager Review: (MANA) (M. Date: 6/26/2020	1436	10		Date	9	126/2020	-1	

Pace Analytical National Center for Testin Cooler Receipt Form	g & Innovation	
Client: KACEMV		1234 205
	perature: (.7°C	
Received By: Monica Rifenberrick		
Signature:		
Receipt Check List	NP Yes	No
COC Seal Present / Intact?	/	2000
COC Signed / Accurate?		BECKE B
Bottles arrive intact?	1	1 1 1 1 1 1 1 1 1
Correct bottles used?		
Sufficient volume sent?	/	
If Applicable		
VOA Zero headspace?	- /	535
Preservation Correct / Checked?		





July 13, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp

annika.asp@pacelabs.com

ann Asp

(612)607-1700

Project Manager

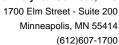
Enclosures

cc: Aaron Benker, Wenck

Ben Holcomb, Wenck Associates
Kelly Jaworski, Wenck Associates Inc
Kelly Jaworski, Wenck Associates, Inc.

Mr. Shane Waterman, Wenck Associates, Inc.







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929

CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959

Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Maryland Certification #: 322

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240 Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064

New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C

Wyoming UST Certification #: via A2LA 2926.01

Wisconsin Certification #: 999407970

# **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364 Kansas Certification #: E-10277 Kentucky UST Certification #: 16 Kentucky Certification #: 90010

Louisiana Certification #: Al30792 Louisiana DW Certification #: LA180010

Maine Certification #: TN0002 Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789





# **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523355001	GP-36 (3-5)	Solid	06/29/20 13:30	06/30/20 16:00
10523355002	GP-36 (8-10)	Water	06/30/20 10:30	06/30/20 16:00
10523355003	Rinsate 063020	Water	06/30/20 11:00	06/30/20 16:00
10523355004	GP-36 (13-17)	Water	06/30/20 11:30	06/30/20 16:00
10523355005	GP-36 (24-26)	Water	06/30/20 12:00	06/30/20 16:00
10523355006	GP-36 (38-40)	Water	06/30/20 13:00	06/30/20 16:00
10523355007	GP-36 (53-57)	Water	06/30/20 14:00	06/30/20 16:00
10523355008	Dup 063020	Water	06/30/20 00:00	06/30/20 16:00
10523355009	GP-36 (68-70)	Water	06/30/20 15:00	06/30/20 16:00
10523355010	Trip Blank	Water	06/29/20 00:00	06/30/20 16:00
10523355011	Trip Blank	Solid	06/29/20 00:00	06/30/20 16:00



# **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523355001	GP-36 (3-5)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523355002	GP-36 (8-10)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355003	Rinsate 063020	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355004	GP-36 (13-17)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355005	GP-36 (24-26)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355006	GP-36 (38-40)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355007	GP-36 (53-57)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	вмв	70	PAN
10523355008	Dup 063020	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	вмв	70	PAN
10523355009	GP-36 (68-70)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523355010	Trip Blank	EPA 8260D	BMB	70	PAN
10523355011	Trip Blank	EPA 8260D	ADM	71	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Methylene Chloride

Date: 07/13/2020 12:21 PM

Lab ID: 10523355001 Sample: GP-36 (3-5) Collected: 06/29/20 13:30 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 06/29/20 13:30 07/09/20 18:58 67-64-1 Acetone mg/kg 1.71 Allyl chloride ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 107-05-1 Benzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 71-43-2 ND 0.0342 06/29/20 13:30 07/09/20 18:58 108-86-1 Bromobenzene mg/kg 25 0.0342 Bromochloromethane ND mg/kg 25 06/29/20 13:30 07/09/20 18:58 74-97-5 Bromodichloromethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 75-27-4 Bromoform ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 75-25-2 mg/kg Bromomethane NΠ 0.171 25 06/29/20 13:30 07/09/20 18:58 74-83-9 mg/kg ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 98-06-6 Carbon tetrachloride ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 56-23-5 Chlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 108-90-7 Dibromochloromethane ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 124-48-1 mg/kg Chloroethane ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 75-00-3 06/29/20 13:30 07/09/20 18:58 67-66-3 Chloroform ND mg/kg 0.171 25 Chloromethane ND mg/kg 0.0855 25 06/29/20 13:30 07/09/20 18:58 74-87-3 2-Chlorotoluene ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 96-12-8 ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 74-95-3 Dibromomethane mg/kg 1,2-Dichlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 106-46-7 Dichlorodifluoromethane ND 0.171 25 mg/kg 06/29/20 13:30 07/09/20 18:58 75-71-8 Dichlorofluoromethane ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 75-43-4 1,1-Dichloroethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 75-34-3 ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 107-06-2 1.2-Dichloroethane mg/kg ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0342 25 06/29/20 13:30 07/09/20 18:58 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/29/20 13:30 07/09/20 18:58 156-60-5 0.0342 trans-1,2-Dichloroethene mg/kg ND 25 06/29/20 13:30 07/09/20 18:58 78-87-5 1,2-Dichloropropane mg/kg 0.0342 1,3-Dichloropropane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 142-28-9 2,2-Dichloropropane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 594-20-7 1,1-Dichloropropene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 563-58-6 ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 10061-02-6 ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 98-82-8 ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.342 25 06/29/20 13:30 07/09/20 18:58 78-93-3

#### **REPORT OF LABORATORY ANALYSIS**

0.171

25

06/29/20 13:30 07/09/20 18:58 75-09-2

ND

mg/kg



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

**Total Solids** 

Date: 07/13/2020 12:21 PM

Lab ID: 10523355001 Collected: 06/29/20 13:30 Received: 06/30/20 16:00 Sample: GP-36 (3-5) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.342 25 06/29/20 13:30 07/09/20 18:58 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 1634-04-4 Naphthalene ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 91-20-3 ND 0.0342 06/29/20 13:30 07/09/20 18:58 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0342 06/29/20 13:30 07/09/20 18:58 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0342 25 06/29/20 13:30 07/09/20 18:58 79-34-5 mg/kg ND Tetrachloroethene 0.0342 25 06/29/20 13:30 07/09/20 18:58 127-18-4 mg/kg ND 0.171 25 06/29/20 13:30 07/09/20 18:58 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 71-55-6 1,1,2-Trichloroethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 79-00-5 Trichloroethene ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 79-01-6 Trichlorofluoromethane ND mg/kg 0.171 25 06/29/20 13:30 07/09/20 18:58 75-69-4 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 76-13-1 ND 1,2,3-Trichloropropane mg/kg 0.0855 25 06/29/20 13:30 07/09/20 18:58 96-18-4 ND Vinyl chloride mg/kg 0.0342 25 06/29/20 13:30 07/09/20 18:58 75-01-4 ND 0.103 25 Xylene (Total) mg/kg 06/29/20 13:30 07/09/20 18:58 1330-20-7 1,4-Dioxane (p-Dioxane) ND mg/kg 3.42 25 06/29/20 13:30 07/09/20 18:58 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 108 % 70.0-130 25 06/29/20 13:30 07/09/20 18:58 17060-07-0 97.7 75.0-131 Toluene-d8 (S) % 25 06/29/20 13:30 07/09/20 18:58 2037-26-5 99.2 % 67.0-138 25 06/29/20 13:30 07/09/20 18:58 460-00-4 4-Bromofluorobenzene (S) Total Solids 2540 G-2011 Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet

#### **REPORT OF LABORATORY ANALYSIS**

07/08/20 23:14 07/08/20 23:24

86.7

%



Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (8-10)	Lab ID: 105	23355002	Collected: 06/30/2	0 10:30	Received: 06	5/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	•		010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica		•					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:56	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Metl Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	ethod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.50	1	07/06/20 17:48	07/08/20 14:17	123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	39	%.	30-125	1	07/06/20 17:48	07/08/20 14:17		P1
VOA (GC/MS) 8260D	Analytical Metl Pace National		260D Preparation Me	thod: 8	260D			
Nactors			F0.0	4	07/07/20 00:42	07/07/20 00:40	67.64.4	
Acetone	ND ND	ug/L	50.0	1		07/07/20 00:42		
Allyl chloride	ND	ug/L	5.00	1		07/07/20 00:42 07/07/20 00:42		
Benzene	ND	ug/L	1.00	1			_	
Bromobenzene	ND	ug/L	1.00	1		07/07/20 00:42		1.0
Bromochloromethane	ND	ug/L	1.00	1		07/07/20 00:42		L0
Bromodichloromethane Bromoform	ND	ug/L	1.00	1		07/07/20 00:42		
	ND	ug/L	1.00	1		07/07/20 00:42		
Bromomethane	ND	ug/L	5.00	1		07/07/20 00:42		
n-Butylbenzene	ND	ug/L	1.00	1		07/07/20 00:42		
ec-Butylbenzene	ND	ug/L	1.00	1		07/07/20 00:42		
ert-Butylbenzene	ND	ug/L	1.00	1		07/07/20 00:42		
Carbon tetrachloride	ND	ug/L	1.00	1		07/07/20 00:42		1.0
Chlorobenzene	ND	ug/L	1.00	1		07/07/20 00:42		L0
Dibromochloromethane	ND	ug/L	1.00	1		07/07/20 00:42		
Chloroethane	ND	ug/L	5.00	1		07/07/20 00:42		
Chloroform	ND	ug/L	5.00	1		07/07/20 00:42		
Chloromethane	ND	ug/L	2.50	1		07/07/20 00:42		
2-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 00:42		
4-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 00:42		
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/07/20 00:42		
I,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/07/20 00:42		
Dibromomethane	ND	ug/L	1.00	1		07/07/20 00:42		
I,2-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:42		
1,3-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:42		
I,4-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:42		
Dichlorodifluoromethane	ND	ug/L	5.00	1		07/07/20 00:42		
Dichlorofluoromethane	ND	ug/L	5.00	1		07/07/20 00:42		
,1-Dichloroethane	ND	ug/L	1.00	1		07/07/20 00:42		
1,2-Dichloroethane	ND	ug/L	1.00	1		07/07/20 00:42		
1,1-Dichloroethene	ND	ug/L	1.00	1		07/07/20 00:42		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 00:42		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 00:42		
1,2-Dichloropropane	ND	ug/L	1.00	1		07/07/20 00:42		
1,1-Dichloropropene	ND	ug/L	1.00	1		07/07/20 00:42		
1,3-Dichloropropane	ND	ug/L	1.00	1		07/07/20 00:42		
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:42	07/07/20 00:42	10061-01-5	

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

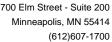
Sample: GP-36 (8-10)	Lab ID:	10523355002	Collected: 06/30/	20 10:30	Received: 06	3/30/20 16:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical N	/lethod: EPA 82	260D Preparation M	ethod: 82	260D			
	Pace Natio	nal - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:42	07/07/20 00:42	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:42	07/07/20 00:42	594-20-7	
Ethylbenzene	ND		1.00	1	07/07/20 00:42	07/07/20 00:42	100-41-4	
Diethyl ether (Ethyl ether)	ND		1.00	1	07/07/20 00:42	07/07/20 00:42	60-29-7	
Hexachloro-1,3-butadiene	ND	_	1.00	1	07/07/20 00:42	07/07/20 00:42	87-68-3	
sopropylbenzene (Cumene)	ND	-	1.00	1	07/07/20 00:42	07/07/20 00:42	98-82-8	
o-Isopropyltoluene	ND	J	1.00	1		07/07/20 00:42		
2-Butanone (MEK)	ND	•	10.0	1	07/07/20 00:42	07/07/20 00:42	78-93-3	
Methylene Chloride	ND	_	5.00	1		07/07/20 00:42		
I-Methyl-2-pentanone (MIBK)	ND	_	10.0	1		07/07/20 00:42		
Methyl-tert-butyl ether	ND	•	1.00	1		07/07/20 00:42		
Naphthalene	ND	-	5.00	1		07/07/20 00:42		
n-Propylbenzene	ND	_	1.00	1		07/07/20 00:42		
Styrene	ND		1.00	1		07/07/20 00:42		
I,1,1,2-Tetrachloroethane	ND	- 3	1.00	1		07/07/20 00:42		
,1,2,2-Tetrachloroethane	ND	•	1.00	1		07/07/20 00:42		
,1,2-Trichlorotrifluoroethane	ND	J	1.00	1		07/07/20 00:42		
etrachloroethene	ND	0	1.00	1		07/07/20 00:42		LO
Tetrahydrofuran	ND	•	5.00	1		07/07/20 00:42		
Foluene	ND	0	1.00	1		07/07/20 00:42		
1,2,3-Trichlorobenzene	ND	•	1.00	1		07/07/20 00:42		
1,2,4-Trichlorobenzene	ND	J	1.00	1		07/07/20 00:42		
I,1,1-Trichloroethane	ND	_	1.00	1		07/07/20 00:42		
1,1,2-Trichloroethane	ND	-	1.00	1		07/07/20 00:42		
richloroethene	ND	0	1.00	1		07/07/20 00:42		CC,L0
Trichlorofluoromethane	ND		5.00	1		07/07/20 00:42		00,20
1,2,3-Trichloropropane	ND		2.50	1		07/07/20 00:42		
,2,4-Trimethylbenzene	ND	J	1.00	1		07/07/20 00:42		
,3,5-Trimethylbenzene	ND		1.00	1		07/07/20 00:42		
/inyl chloride	ND ND	•	1.00	1		07/07/20 00:42		
Kylene (Total)	ND ND	J	3.00	1		07/07/20 00:42		
Surrogates	ND	ug/L	3.00	1	01/01/20 00.42	01/01/20 00.42	1330-20-7	
Foluene-d8 (S)	110	%	80.0-120	1	07/07/20 00:42	07/07/20 00:42	2037-26-5	
I-Bromofluorobenzene (S)	99.4		77.0-126	1		07/07/20 00:42		
1,2-Dichloroethane-d4 (S)	114		70.0-130	1		07/07/20 00:42		



Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Parameters												
	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua				
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A							
	Pace Analytica	Services -	Minneapolis									
_ead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:59	7439-92-1					
3270E MSSV 14 Dioxane By SIM	•	Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis										
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/01/20 15:59	07/06/20 07:17	123-91-1					
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	39	%.	30-125	1	07/01/20 15:59	07/06/20 07:17						
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	thod: 82	260D							
Acetone	ND	ug/L	50.0	1		07/07/20 01:03						
Allyl chloride	ND	ug/L	5.00	1		07/07/20 01:03						
Benzene	ND	ug/L	1.00	1		07/07/20 01:03						
Bromobenzene	ND	ug/L	1.00	1		07/07/20 01:03						
Bromochloromethane	ND	ug/L	1.00	1		07/07/20 01:03		L0				
Bromodichloromethane	ND	ug/L	1.00	1		07/07/20 01:03						
Bromoform	ND	ug/L	1.00	1		07/07/20 01:03						
Bromomethane	ND	ug/L	5.00	1	07/07/20 01:03	07/07/20 01:03	74-83-9					
-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	104-51-8					
ec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	135-98-8					
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	98-06-6					
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	56-23-5					
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	108-90-7	L0				
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	124-48-1					
Chloroethane	ND	ug/L	5.00	1	07/07/20 01:03	07/07/20 01:03	75-00-3					
Chloroform	ND	ug/L	5.00	1	07/07/20 01:03	07/07/20 01:03	67-66-3					
Chloromethane	ND	ug/L	2.50	1	07/07/20 01:03	07/07/20 01:03	74-87-3					
2-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 01:03						
I-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 01:03						
I,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/07/20 01:03						
I,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/07/20 01:03						
Dibromomethane	ND	ug/L	1.00	1		07/07/20 01:03						
I,2-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 01:03						
1,3-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 01:03						
1,4-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 01:03						
Dichlorodifluoromethane	ND	ug/L ug/L	5.00	1		07/07/20 01:03						
Dichlorofluoromethane	ND	ug/L	5.00	1		07/07/20 01:03						
,1-Dichloroethane	ND	-	1.00	1		07/07/20 01:03						
, 1-Dichloroethane	ND ND	ug/L	1.00	1		07/07/20 01:03						
		ug/L										
I,1-Dichloroethene	ND ND	ug/L	1.00	1		07/07/20 01:03 07/07/20 01:03						
cis-1,2-Dichloroethene	ND ND	ug/L	1.00	1								
rans-1,2-Dichloroethene	ND	ug/L ug/L	1.00 1.00	1		07/07/20 01:03						
2 Diablerences		110/1	7 ()()	1	07/07/20 01:03	- 07/07/20 01:03	/ ひ-ひ/-5					
	ND	-										
1,2-Dichloropropane 1,1-Dichloropropene 1,3-Dichloropropane	ND ND ND	ug/L ug/L	1.00	1 1	07/07/20 01:03	07/07/20 01:03 07/07/20 01:03	563-58-6					





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: Rinsate 063020	Lab ID: 105	23355003	Collected: 06/30/2	20 11:00	Received: 06	6/30/20 16:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260D									
	Pace National	- Mt. Juliet								
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 10061-02-6			
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 594-20-7			
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 100-41-4			
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	8 60-29-7			
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	87-68-3			
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 98-82-8			
o-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 99-87-6			
2-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 01:03	07/07/20 01:03	3 78-93-3			
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 01:03					
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 01:03	07/07/20 01:03	3 108-10-1			
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 01:03					
Naphthalene	ND	ug/L	5.00	1	07/07/20 01:03	07/07/20 01:03	3 91-20-3			
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 103-65-1			
Styrene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 100-42-5			
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 630-20-6			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 79-34-5			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 76-13-1			
Tetrachloroethene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 127-18-4	L0		
Tetrahydrofuran	ND	ug/L	5.00	1	07/07/20 01:03	07/07/20 01:03	3 109-99-9			
- Toluene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 108-88-3			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	87-61-6			
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:03					
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 71-55-6			
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/07/20 01:03	07/07/20 01:03	3 79-00-5			
Frichloroethene	ND	ug/L	1.00	1	07/07/20 01:03			L0		
richlorofluoromethane	ND	ug/L	5.00	1	07/07/20 01:03					
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/07/20 01:03					
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 01:03					
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 01:03					
/inyl chloride	ND	ug/L	1.00	1	07/07/20 01:03					
(ylene (Total)	ND	ug/L	3.00	1	07/07/20 01:03					
Surrogates	. 15	~ <i>y</i> =	0.00	•	21.0.,20 01.00	21,01,20 01.00				
oluene-d8 (S)	111	%	80.0-120	1	07/07/20 01:03	07/07/20 01:03	3 2037-26-5			
-Bromofluorobenzene (S)	98.6	%	77.0-126	1	07/07/20 01:03	07/07/20 01:03	3 460-00-4			
,2-Dichloroethane-d4 (S)	118	%	70.0-130	1	07/07/20 01:03					



Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (13-17)	Lab ID: 105	23355004	Collected: 06/30/2	0 11:30	Received: 06	3/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:02	2 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ition Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	1.2	ug/L	0.26	1	07/06/20 17:48	07/10/20 12:47	7 123-91-1	
1,4-Dioxane-d8 (S)	22	%.	30-125	1	07/06/20 17:48	07/10/20 12:47	7	1M
VOA (GC/MS) 8260D	•		260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/07/20 01:23	07/07/20 01:23	3 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 107-05-1	
Benzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 71-43-2	
Bromobenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 108-86-1	
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 74-97-5	L0
Bromodichloromethane	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 75-27-4	
Bromoform	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 75-25-2	
Bromomethane	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 108-90-7	L0
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 75-00-3	
Chloroform	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/07/20 01:23	07/07/20 01:23	3 74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 95-49-8	
1-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	3 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	1	07/07/20 01:23	07/07/20 01:23	3 75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/07/20 01:23			
I,2-Dichloroethane	ND	ug/L	1.00	1	07/07/20 01:23			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/07/20 01:23			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 01:23			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 01:23			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:23			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:23			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:23			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:23			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: GP-36 (13-17)	Lab ID:	10523355004	Collected: 06/30	/20 11:30	Received: 06	i/30/20 16:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical N	Method: EPA 82	260D Preparation M	lethod: 82	260D			
	Pace Natio	nal - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:23	07/07/20 01:23	594-20-7	
Ethylbenzene	ND		1.00	1	07/07/20 01:23	07/07/20 01:23	100-41-4	
Diethyl ether (Ethyl ether)	ND		1.00	1	07/07/20 01:23	07/07/20 01:23	60-29-7	
Hexachloro-1,3-butadiene	ND	_	1.00	1		07/07/20 01:23		
sopropylbenzene (Cumene)	ND	_	1.00	1	07/07/20 01:23	07/07/20 01:23	98-82-8	
o-Isopropyltoluene	ND		1.00	1		07/07/20 01:23		
2-Butanone (MEK)	ND	•	10.0	1	07/07/20 01:23	07/07/20 01:23	78-93-3	
Methylene Chloride	ND	_	5.00	1		07/07/20 01:23		
1-Methyl-2-pentanone (MIBK)	ND		10.0			07/07/20 01:23		
Methyl-tert-butyl ether	ND	•	1.00			07/07/20 01:23		
Naphthalene	ND	-	5.00			07/07/20 01:23		
n-Propylbenzene	ND	_	1.00			07/07/20 01:23		
Styrene	ND	_	1.00			07/07/20 01:23		
I,1,1,2-Tetrachloroethane	ND	0	1.00			07/07/20 01:23		
,1,2,2-Tetrachloroethane	ND	•	1.00			07/07/20 01:23		
,1,2-Trichlorotrifluoroethane	ND		1.00			07/07/20 01:23		
etrachloroethene	ND	J	1.00			07/07/20 01:23		LO
Tetrahydrofuran	ND	•	5.00			07/07/20 01:23		
Foluene	ND	•	1.00			07/07/20 01:23		
1,2,3-Trichlorobenzene	ND	•	1.00			07/07/20 01:23		
1,2,4-Trichlorobenzene	ND	0	1.00			07/07/20 01:23		
I,1,1-Trichloroethane	ND	_	1.00			07/07/20 01:23		
1,1,2-Trichloroethane	ND	_	1.00			07/07/20 01:23		
Frichloroethene	1.30	J	1.00			07/07/20 01:23		CC,L0
Trichlorofluoromethane	ND		5.00			07/07/20 01:23		00,20
I,2,3-Trichloropropane	ND	_	2.50			07/07/20 01:23		
,2,4-Trimethylbenzene	ND	ŭ	1.00			07/07/20 01:23		
1,3,5-Trimethylbenzene	ND	_	1.00			07/07/20 01:23		
/inyl chloride	ND	•	1.00			07/07/20 01:23		
Kylene (Total)	ND ND	J	3.00			07/07/20 01:23		
Surrogates	ND	ug/L	3.00	ı	01/01/20 01.20	01,01/20 01.20	1000 20 7	
Foluene-d8 (S)	111	%	80.0-120	1	07/07/20 01:23	07/07/20 01:23	2037-26-5	
4-Bromofluorobenzene (S)	96.3		77.0-126			07/07/20 01:23		
1,2-Dichloroethane-d4 (S)	114		70.0-130		07/07/20 01:23			



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (24-26)	Lab ID: 1052	23355005	Collected: 06/30/2	20 12:00	Received: 06	5/30/20 16:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	10D Preparation Me	ethod: E	PA 3010A						
	Pace Analytica	Services -	Minneapolis								
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:0	5 7439-92-1				
8270E MSSV 14 Dioxane By SIM	•	lytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C e Analytical Services - Minneapolis									
1,4-Dioxane (SIM) Surrogates	1.1	ug/L	0.25	1	07/06/20 17:48	07/08/20 14:59	9 123-91-1				
1,4-Dioxane-d8 (S)	36	%.	30-125	1	07/06/20 17:48	07/08/20 14:59	9				
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	ethod: 8	260D						
						0=/0=/00 04					
Actione	ND	ug/L	50.0	1	07/07/20 01:43						
Allyl chloride	ND	ug/L	5.00	1	07/07/20 01:43						
Benzene	ND	ug/L	1.00	1	07/07/20 01:43						
Bromobenzene	ND	ug/L	1.00	1	07/07/20 01:43			1.0			
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 01:43			LO			
Bromodichloromethane	ND	ug/L	1.00	1	07/07/20 01:43 07/07/20 01:43						
Bromoform	ND	ug/L	1.00	1							
Bromomethane	ND	ug/L	5.00	1	07/07/20 01:43						
n-Butylbenzene	ND	ug/L	1.00	1	07/07/20 01:43						
sec-Butylbenzene	ND ND	ug/L	1.00 1.00	1 1	07/07/20 01:43 07/07/20 01:43						
ert-Butylbenzene Carbon tetrachloride	ND ND	ug/L ug/L	1.00	1	07/07/20 01:43						
Chlorobenzene	ND ND	ug/L ug/L	1.00	1	07/07/20 01:43			L0			
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 01:43			LU			
Chloroethane	ND	ug/L	5.00	1	07/07/20 01:43						
Chloroform	ND	ug/L	5.00	1	07/07/20 01:43						
Chloromethane	ND	ug/L	2.50	1	07/07/20 01:43						
2-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 01:43						
4-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 01:43						
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/07/20 01:43						
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/07/20 01:43						
Dibromomethane	ND	ug/L	1.00	1	07/07/20 01:43						
1.2-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:43						
1.3-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:43						
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 106-46-7				
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/07/20 01:43						
Dichlorofluoromethane	ND	ug/L	5.00	1	07/07/20 01:43	07/07/20 01:43	3 75-43-4				
1,1-Dichloroethane	2.85	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 75-34-3				
1,2-Dichloroethane	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 107-06-2				
I,1-Dichloroethene	1.98	ug/L	1.00	1	07/07/20 01:43						
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 156-59-2				
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 156-60-5				
1,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 78-87-5				
1,1-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 563-58-6				
1,3-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 142-28-9				
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 10061-01-5				

### **REPORT OF LABORATORY ANALYSIS**

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### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: GP-36 (24-26)	Lab ID: 105	Lab ID: 10523355005 Collected: 06/30/20 12:00 Received: 06/30/20 16:00 Matrix: Water							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D				
	Pace National	- Mt. Juliet							
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 10061-02-6		
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 594-20-7		
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 100-41-4		
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 60-29-7		
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	87-68-3		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 98-82-8		
p-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 99-87-6		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 01:43	07/07/20 01:43	3 78-93-3		
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 01:43	07/07/20 01:43	3 75-09-2		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 01:43	07/07/20 01:43	3 108-10-1		
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 01:43	07/07/20 01:43	3 1634-04-4		
laphthalene	ND	ug/L	5.00	1	07/07/20 01:43				
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 01:43				
Styrene	ND	ug/L	1.00	1	07/07/20 01:43				
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 01:43				
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 01:43				
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/07/20 01:43				
etrachloroethene	ND	ug/L	1.00	1	07/07/20 01:43			LO	
Tetrahydrofuran	ND	ug/L	5.00	1	07/07/20 01:43				
Toluene	ND	ug/L	1.00	1	07/07/20 01:48				
,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:48				
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 01:43				
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 01:48				
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/07/20 01:48				
richloroethene	ND	ug/L	1.00	1	07/07/20 01:43			LO	
Trichlorofluoromethane	ND ND	ug/L	5.00	1	07/07/20 01:43			LU	
,2,3-Trichloropropane	ND ND	ug/L	2.50	1	07/07/20 01:43				
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	07/07/20 01:43				
•	ND ND	J	1.00	1	07/07/20 01:43				
,3,5-Trimethylbenzene /inyl chloride	ND ND	ug/L ug/L	1.00	1	07/07/20 01:43				
•	ND ND	•	3.00	1	07/07/20 01:43				
Kylene (Total) S <b>urrogates</b>	ND	ug/L	3.00	1	01/01/20 01:43	07/07/20 01:4	0 1330-20-7		
Foluene-d8 (S)	107	%	80.0-120	1	07/07/20 01:43	07/07/20 01-4	3 2037-26-5		
1-Bromofluorobenzene (S)	94.8	%	77.0-126	1	07/07/20 01:43				
` '	94.6 115	%	70.0-120	1	07/07/20 01:43				
1,2-Dichloroethane-d4 (S)	115	%	70.0-130	1	07/07/20 01:43	07/07/20 01:43	0-10-00011		



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (38-40)	Lab ID: 105	23355006	Collected: 06/30/2	0 13:00	Received: 06	6/30/20 16:00 I	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A						
	Pace Analytica	l Services -	Minneapolis								
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:08	7439-92-1				
8270E MSSV 14 Dioxane By SIM	•	alytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C ce Analytical Services - Minneapolis									
1,4-Dioxane (SIM)	3.0	ug/L	0.25	1	07/06/20 17:48	07/08/20 15:20	123-91-1				
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	36	%.	30-125	1	07/06/20 17:48	07/08/20 15:20	)				
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	thod: 8	260D						
Acetone	ND	ug/L	50.0	1		07/07/20 02:03					
Allyl chloride	ND	ug/L	5.00	1		07/07/20 02:03					
Benzene	ND	ug/L	1.00	1		07/07/20 02:03					
Bromobenzene	ND	ug/L	1.00	1		07/07/20 02:03					
Bromochloromethane	ND	ug/L	1.00	1		07/07/20 02:03		LO			
Bromodichloromethane	ND	ug/L	1.00	1		07/07/20 02:03					
Bromoform	ND	ug/L	1.00	1		07/07/20 02:03					
Bromomethane	ND	ug/L	5.00	1		07/07/20 02:03					
-Butylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 104-51-8				
ec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	135-98-8				
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	98-06-6				
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	56-23-5				
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	108-90-7	L0			
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 124-48-1				
Chloroethane	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	75-00-3				
Chloroform	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	8 67-66-3				
Chloromethane	ND	ug/L	2.50	1	07/07/20 02:03	07/07/20 02:03	3 74-87-3				
2-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 02:03					
I-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 02:03					
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/07/20 02:03					
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/07/20 02:03					
Dibromomethane	ND	ug/L	1.00	1		07/07/20 02:03					
I.2-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 02:03					
,,2-Dichlorobenzene	ND	-	1.00	1		07/07/20 02:03					
		ug/L				07/07/20 02:03					
,4-Dichlorobenzene	ND	ug/L	1.00	1							
Dichlorodifluoromethane	ND	ug/L	5.00	1		07/07/20 02:03					
Dichlorofluoromethane	ND	ug/L	5.00	1		07/07/20 02:03					
,1-Dichloroethane	ND	ug/L	1.00	1		07/07/20 02:03					
,2-Dichloroethane	ND	ug/L	1.00	1		07/07/20 02:03					
I,1-Dichloroethene	ND	ug/L	1.00	1		07/07/20 02:03					
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 02:03					
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 02:03					
1,2-Dichloropropane	ND	ug/L	1.00	1		07/07/20 02:03					
,1-Dichloropropene	ND	ug/L	1.00	1		07/07/20 02:03					
1,3-Dichloropropane	ND	ug/L	1.00	1		07/07/20 02:03					
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	10061-01-5				



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: GP-36 (38-40)	Lab ID: 10	0523355006	Collected: 06/30/2	20 13:00	Received: 06	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical M	ethod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace Nation	al - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 02:03	07/07/20 02:03	3 78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	3 75-09-2	
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 02:03	07/07/20 02:03	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 1634-04-4	
laphthalene	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	3 91-20-3	
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 103-65-1	
Styrene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 76-13-1	
etrachloroethene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 127-18-4	L0
Tetrahydrofuran	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	3 109-99-9	
oluene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 108-88-3	
,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	87-61-6	
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 79-00-5	
richloroethene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 79-01-6	L0
richlorofluoromethane	ND	ug/L	5.00	1	07/07/20 02:03	07/07/20 02:03	3 75-69-4	
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/07/20 02:03	07/07/20 02:03	3 96-18-4	
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 108-67-8	
inyl chloride	ND	ug/L	1.00	1	07/07/20 02:03	07/07/20 02:03	3 75-01-4	
(ylene (Total)	ND	ug/L	3.00	1		07/07/20 02:03		
Surrogates		J						
oluene-d8 (S)	108	%	80.0-120	1	07/07/20 02:03	07/07/20 02:03	3 2037-26-5	
-Bromofluorobenzene (S)	96.3	%	77.0-126	1	07/07/20 02:03	07/07/20 02:03	3 460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70.0-130	1	07/07/20 02:03	07/07/20 02:03	3 17060-07-0	



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (53-57)	Lab ID: 105	23355007	Collected: 06/30/2	0 14:00	Received: 06	3/30/20 16:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A						
	Pace Analytica	l Services -	Minneapolis								
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:11	7439-92-1				
8270E MSSV 14 Dioxane By SIM	•	alytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C									
1,4-Dioxane (SIM)	0.32	ug/L	0.29	1	07/06/20 17:48	07/08/20 15:41	123-91-1				
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	39	%.	30-125	1	07/06/20 17:48	07/08/20 15:41					
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	thod: 82	260D						
			50.0		07/07/00 00 00	07/07/00 00 00					
Acetone	ND	ug/L	50.0	1		07/07/20 00:22					
Allyl chloride	ND	ug/L	5.00	1		07/07/20 00:22					
Benzene	ND	ug/L	1.00	1	07/07/20 00:22						
Bromobenzene	ND	ug/L	1.00	1	07/07/20 00:22						
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 00:22			L0			
romodichloromethane	ND	ug/L	1.00	1	07/07/20 00:22						
Bromoform	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 75-25-2				
Bromomethane	ND	ug/L	5.00	1	07/07/20 00:22	07/07/20 00:22	2 74-83-9				
-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 104-51-8				
ec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	135-98-8				
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	98-06-6				
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 56-23-5				
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 108-90-7	L0			
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 124-48-1				
Chloroethane	ND	ug/L	5.00	1	07/07/20 00:22						
Chloroform	ND	ug/L	5.00	1	07/07/20 00:22						
Chloromethane	ND	ug/L	2.50	1	07/07/20 00:22						
2-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 00:22						
I-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 00:22						
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/07/20 00:22						
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/07/20 00:22						
Dibromomethane	ND	ug/L	1.00	1	07/07/20 00:22						
.2-Dichlorobenzene		•		1							
,	ND	ug/L	1.00		07/07/20 00:22						
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 00:22						
,4-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:22					
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/07/20 00:22						
Dichlorofluoromethane	ND	ug/L	5.00	1	07/07/20 00:22						
,1-Dichloroethane	ND	ug/L	1.00	1	07/07/20 00:22						
,2-Dichloroethane	ND	ug/L	1.00	1	07/07/20 00:22						
,1-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:22						
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:22						
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 156-60-5				
1,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 78-87-5				
1,1-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 563-58-6				
1,3-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:22						
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:22						



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: GP-36 (53-57)	Lab ID: 105	Lab ID: 10523355007 Collected: 06/30/20 14:00 Received: 06/30/20 16:00 Matrix: Water							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
VOA (GC/MS) 8260D	Analytical Metl	nod: EPA 82	260D Preparation Me	ethod: 82	260D				
	Pace National	- Mt. Juliet							
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 10061-02-6		
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 594-20-7		
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 100-41-4		
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 60-29-7		
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 87-68-3		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 98-82-8		
p-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 00:22	07/07/20 00:22	2 99-87-6		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 00:22	07/07/20 00:22	2 78-93-3		
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 00:22	07/07/20 00:22	2 75-09-2		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 00:22	07/07/20 00:22	2 108-10-1		
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/07/20 00:22			
laphthalene	ND	ug/L	5.00	1		07/07/20 00:22			
n-Propylbenzene	ND	ug/L	1.00	1	07/07/20 00:22				
Styrene	ND	ug/L	1.00	1		07/07/20 00:22			
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/07/20 00:22			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/07/20 00:22			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/07/20 00:22			
etrachloroethene	ND	ug/L	1.00	1		07/07/20 00:22		LO	
etrahydrofuran	ND	ug/L	5.00	1		07/07/20 00:22			
Toluene	ND	ug/L	1.00	1		07/07/20 00:22			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:22			
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:22			
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 00:22				
1,1,2-Trichloroethane	ND	ug/L	1.00	1		07/07/20 00:22			
richloroethene	ND	ug/L	1.00	1		07/07/20 00:22		LO	
Trichlorofluoromethane	ND ND	ug/L ug/L	5.00	1		07/07/20 00:22		LU	
,2,3-Trichloropropane	ND ND	ug/L ug/L	2.50	1		07/07/20 00:22			
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1		07/07/20 00:22			
•	ND	•	1.00	1		07/07/20 00:22			
,3,5-Trimethylbenzene	ND ND	ug/L		1		07/07/20 00:22			
/inyl chloride		ug/L	1.00						
(ylene (Total) Surrogates	ND	ug/L	3.00	1	07/07/20 00:22	07/07/20 00:22	2 1330-20-7		
Foluene-d8 (S)	109	%	80.0-120	1	07/07/20 00:22	07/07/20 00:22	2 2037-26-5		
I-Bromofluorobenzene (S)	98.3	%	77.0-126	1		07/07/20 00:22			
` '				1					
1,2-Dichloroethane-d4 (S)	113	%	70.0-130	Т	07/07/20 00:22	07/07/20 00:22	2 1/060-07-0		



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: Dup 063020	Lab ID: 105	23355008	Collected: 06/30/2	20 00:00	Received: 06	i/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	I Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:14	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	ethod: EPA Mod. (	3510C		
1,4-Dioxane (SIM)	3.0	ug/L	0.50	1	07/06/20 17:48	07/08/20 16:01	123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	28	%.	30-125	1	07/06/20 17:48	07/08/20 16:01		1M,P1
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	ethod: 8	260D			
Acetone	ND	ug/L	50.0	1		07/07/20 05:15		
Allyl chloride	ND	ug/L	5.00	1		07/07/20 05:15		
Benzene	ND	ug/L	1.00	1		07/07/20 05:15		
Bromobenzene	ND	ug/L	1.00	1		07/07/20 05:15		
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	74-97-5	L0
Bromodichloromethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	75-27-4	
Bromoform	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	75-25-2	
Bromomethane	ND	ug/L	5.00	1	07/07/20 05:15	07/07/20 05:15	74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	108-90-7	LO
Dibromochloromethane	ND	ug/L	1.00	1		07/07/20 05:15		
Chloroethane	ND	ug/L	5.00	1		07/07/20 05:15		
Chloroform	ND	ug/L	5.00	1		07/07/20 05:15		
Chloromethane	ND	ug/L	2.50	1		07/07/20 05:15		
2-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 05:15		
4-Chlorotoluene	ND	ug/L	1.00	1		07/07/20 05:15		
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/07/20 05:15		
1,2-Dibromo-3-chloropropane 1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/07/20 05:15		
Dibromomethane	ND	ug/L	1.00	1		07/07/20 05:15		
	ND ND	•	1.00	1		07/07/20 05:15		
1,2-Dichlorobenzene		ug/L						
1,3-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 05:15		
1,4-Dichlorobenzene	ND	ug/L	1.00	1		07/07/20 05:15		
Dichlorodifluoromethane	ND	ug/L	5.00	1		07/07/20 05:15		
Dichlorofluoromethane	ND	ug/L	5.00	1		07/07/20 05:15		
1,1-Dichloroethane	ND	ug/L	1.00	1		07/07/20 05:15		
1,2-Dichloroethane	ND	ug/L	1.00	1		07/07/20 05:15		
1,1-Dichloroethene	ND	ug/L	1.00	1		07/07/20 05:15		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 05:15		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/07/20 05:15		
1,2-Dichloropropane	ND	ug/L	1.00	1		07/07/20 05:15		
1,1-Dichloropropene	ND	ug/L	1.00	1		07/07/20 05:15		
1,3-Dichloropropane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	142-28-9	
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	10061-01-5	



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: Dup 063020	Lab ID: 105	Collected: 06/30/2	0 00:00	Received: 06	6/30/20 16:00	latrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	5 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	98-82-8	
-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	99-87-6	
P-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 05:15	07/07/20 05:15	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 05:15	07/07/20 05:15	75-09-2	
-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 05:15	07/07/20 05:15	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	1634-04-4	
laphthalene	ND	ug/L	5.00	1	07/07/20 05:15	07/07/20 05:15	91-20-3	
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	103-65-1	
Styrene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	76-13-1	
etrachloroethene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	127-18-4	L0
etrahydrofuran	ND	ug/L	5.00	1	07/07/20 05:15	07/07/20 05:15	109-99-9	
oluene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	108-88-3	
,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	87-61-6	
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	79-00-5	
richloroethene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	79-01-6	LO
richlorofluoromethane	ND	ug/L	5.00	1	07/07/20 05:15	07/07/20 05:15	75-69-4	
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/07/20 05:15	07/07/20 05:15	96-18-4	
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/07/20 05:15	07/07/20 05:15	75-01-4	
(ylene (Total)	ND	ug/L	3.00	1	07/07/20 05:15	07/07/20 05:15	1330-20-7	
Surrogates		•						
oluene-d8 (S)	109	%	80.0-120	1	07/07/20 05:15	07/07/20 05:15	2037-26-5	
-Bromofluorobenzene (S)	97.0	%	77.0-126	1	07/07/20 05:15	07/07/20 05:15	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70.0-130	1	07/07/20 05:15	07/07/20 05:15	17060-07-0	



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/13/2020 12:21 PM

Sample: GP-36 (68-70)	Lab ID: 105	23355009	Collected: 06/30/2	0 15:00	Received: 06	3/30/20 16:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	10D Preparation Me	thod: El	PA 3010A						
	Pace Analytica	l Services -	Minneapolis								
_ead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 17:17	7439-92-1				
3270E MSSV 14 Dioxane By SIM		alytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C ce Analytical Services - Minneapolis									
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.50	1	07/06/20 17:48	07/08/20 16:22	2 123-91-1				
1,4-Dioxane-d8 (S)	36	%.	30-125	1	07/06/20 17:48	07/08/20 16:22	2	P1			
VOA (GC/MS) 8260D	Analytical Meth Pace National		260D Preparation Me	thod: 82	260D						
Acetone	ND	ug/L	50.0	1	07/07/20 05:35						
Allyl chloride	ND	ug/L	5.00	1	07/07/20 05:35						
Benzene	ND	ug/L	1.00	1	07/07/20 05:35						
Bromobenzene	ND	ug/L	1.00	1	07/07/20 05:35						
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 05:35			L0			
Bromodichloromethane	ND	ug/L	1.00	1	07/07/20 05:35						
Bromoform	ND	ug/L	1.00	1	07/07/20 05:35						
Bromomethane	ND	ug/L	5.00	1	07/07/20 05:35						
-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:35						
ec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:35						
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 05:35						
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 05:35						
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 05:35			L0			
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 05:35						
Chloroethane	ND	ug/L	5.00	1	07/07/20 05:35						
Chloroform	ND	ug/L	5.00	1	07/07/20 05:35						
Chloromethane	ND	ug/L	2.50	1	07/07/20 05:35						
2-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 05:35						
4-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 05:35						
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/07/20 05:35						
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/07/20 05:35						
Dibromomethane	ND	ug/L	1.00	1	07/07/20 05:35						
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:35						
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:35						
,4-Dichlorobenzene Dichlorodifluoromethane	ND ND	ug/L	1.00 5.00	1	07/07/20 05:35 07/07/20 05:35						
Dichlorofluoromethane	ND ND	ug/L	5.00	1 1	07/07/20 05:35						
	ND ND	ug/L	1.00	1	07/07/20 05:35						
,1-Dichloroethane		ug/L									
I,2-Dichloroethane	ND ND	ug/L	1.00	1 1	07/07/20 05:35 07/07/20 05:35						
l,1-Dichloroethene cis-1,2-Dichloroethene	ND ND	ug/L ug/L	1.00 1.00	1	07/07/20 05:35						
rans-1,2-Dichloroethene	ND ND	•	1.00	1	07/07/20 05:35						
1,2-Dichloropropane	ND ND	ug/L	1.00	1	07/07/20 05:35						
	ND ND	ug/L		1	07/07/20 05:35						
I,1-Dichloropropene		ug/L	1.00								
I,3-Dichloropropane cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00 1.00	1 1	07/07/20 05:35 07/07/20 05:35						



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: GP-36 (68-70)	Lab ID: 10523355009 Collected: 06/30/20 15:00 Received: 06/30/20 16:00 Matrix: Water							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
rans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 05:35	07/07/20 05:35	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 05:35	07/07/20 05:35	5 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 05:35	07/07/20 05:35	5 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 05:35	07/07/20 05:35	5 1634-04-4	
laphthalene	ND	ug/L	5.00	1	07/07/20 05:35			
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 05:35			
Styrene	ND	ug/L	1.00	1	07/07/20 05:35			
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 05:35			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/07/20 05:35			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/07/20 05:35			
etrachloroethene	ND	ug/L	1.00	1	07/07/20 05:35			LO
Tetrahydrofuran	ND	ug/L	5.00	1	07/07/20 05:35			
Toluene	ND	ug/L	1.00	1	07/07/20 05:35			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:35			
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/07/20 05:35			
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/07/20 05:35			
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/07/20 05:35			
richloroethene	ND ND	ug/L	1.00	1	07/07/20 05:35			L0
Trichlorofluoromethane	ND ND	ug/L	5.00	1	07/07/20 05:35			LU
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/07/20 05:35			
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	07/07/20 05:35			
•	ND ND	•	1.00	1	07/07/20 05:35			
,3,5-Trimethylbenzene /inyl chloride	ND ND	ug/L ug/L	1.00	1	07/07/20 05:35			
•	ND ND	•	3.00	1	07/07/20 05:35			
<pre>⟨ylene (Total) Surrogates</pre>	ND	ug/L	3.00	1	01/01/20 05:35	07/07/20 05:35	) 1330-20-7	
Foluene-d8 (S)	110	%	80.0-120	1	07/07/20 05:35	07/07/20 05:36	5 2037-26-5	
I-Bromofluorobenzene (S)	99.1	%	77.0-126	1	07/07/20 05:35			
1,2-Dichloroethane-d4 (S)	115	% %	70.0-120	1	07/07/20 05:35			



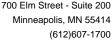
### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: Trip Blank	Lab ID: 105	23355010	Collected:	06/29/2	0 00:00	Received: (	06/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Prepara	ation Me	thod: 82	:60D			
	Pace National	- Mt. Juliet							
Acetone	ND	ug/L		50.0	1	07/06/20 22:4	0 07/06/20 22:4	0 67-64-1	
Allyl chloride	ND	ug/L		5.00	1		0 07/06/20 22:4		
Benzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
Bromobenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
Bromochloromethane	ND	ug/L		1.00	1	07/06/20 22:4	0 07/06/20 22:4	0 74-97-5	L0
Bromodichloromethane	ND	ug/L		1.00	1		0 07/06/20 22:4		
Bromoform	ND	ug/L		1.00	1		0 07/06/20 22:4		
Bromomethane	ND	ug/L		5.00	1		0 07/06/20 22:4		
n-Butylbenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
sec-Butylbenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
tert-Butylbenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
Carbon tetrachloride	ND	ug/L		1.00	1		0 07/06/20 22:4		
Chlorobenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		LO
Dibromochloromethane	ND	ug/L		1.00	1		0 07/06/20 22:4		
Chloroethane	ND	ug/L		5.00	1		0 07/06/20 22:4		
Chloroform	ND	ug/L		5.00	1		0 07/06/20 22:4		
Chloromethane	ND	ug/L		2.50	1		0 07/06/20 22:4		
2-Chlorotoluene	ND	ug/L		1.00	1		0 07/06/20 22:4		
4-Chlorotoluene	ND ND	ug/L		1.00	1		0 07/06/20 22:4		
1,2-Dibromo-3-chloropropane	ND ND	ug/L		5.00	1		0 07/06/20 22:4		
	ND ND	-		1.00	1		0 07/06/20 22:4 0 07/06/20 22:4		
1,2-Dibromoethane (EDB) Dibromomethane	ND ND	ug/L ug/L		1.00	1		0		
1,2-Dichlorobenzene	ND ND	ug/L		1.00	1		0 07/06/20 22:4		
1,3-Dichlorobenzene	ND ND	ug/L ug/L		1.00	1		0 07/06/20 22:4 0 07/06/20 22:4		
	ND ND	-		1.00	1		0 07/06/20 22:4 0 07/06/20 22:4		
1,4-Dichlorobenzene		ug/L							
Dichlorodifluoromethane	ND	ug/L		5.00	1		0 07/06/20 22:4		
Dichlorofluoromethane	ND	ug/L		5.00	1		0 07/06/20 22:4		
1,1-Dichloroethane	ND	ug/L		1.00	1		0 07/06/20 22:4		
1,2-Dichloroethane	ND	ug/L		1.00	1		0 07/06/20 22:4		
1,1-Dichloroethene	ND	ug/L		1.00	1		0 07/06/20 22:4		
cis-1,2-Dichloroethene	ND	ug/L		1.00	1		0 07/06/20 22:4		
trans-1,2-Dichloroethene	ND	ug/L		1.00	1		0 07/06/20 22:4		
1,2-Dichloropropane	ND	ug/L		1.00	1		0 07/06/20 22:4		
1,1-Dichloropropene	ND	ug/L		1.00	1		0 07/06/20 22:4	1 111 11 1	
1,3-Dichloropropane	ND	ug/L		1.00	1		0 07/06/20 22:4		
cis-1,3-Dichloropropene	ND	ug/L		1.00	1		0 07/06/20 22:4		
trans-1,3-Dichloropropene	ND	ug/L		1.00	1		0 07/06/20 22:4		
2,2-Dichloropropane	ND	ug/L		1.00	1		0 07/06/20 22:4		
Ethylbenzene	ND	ug/L		1.00	1		0 07/06/20 22:4		
Diethyl ether (Ethyl ether)	ND	ug/L		1.00	1		0 07/06/20 22:4		
Hexachloro-1,3-butadiene	ND	ug/L		1.00	1		0 07/06/20 22:4		
sopropylbenzene (Cumene)	ND	ug/L		1.00	1		0 07/06/20 22:4		
o-Isopropyltoluene	ND	ug/L		1.00	1		0 07/06/20 22:4		
2-Butanone (MEK)	ND	ug/L		10.0	1		0 07/06/20 22:4		
Methylene Chloride	ND	ug/L		5.00	1	07/06/20 22:4	0 07/06/20 22:4	0 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L		10.0	1	07/06/20 22:4	0 07/06/20 22:4	0 108-10-1	





### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Sample: Trip Blank	Lab ID: 1052	23355010	Collected: 06/29/2	20 00:00	Received: 06	/30/20 16:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/06/20 22:40	07/06/20 22:40	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	103-65-1	
Styrene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	127-18-4	L0
Tetrahydrofuran	ND	ug/L	5.00	1	07/06/20 22:40	07/06/20 22:40	109-99-9	
Toluene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	79-01-6	L0
Trichlorofluoromethane	ND	ug/L	5.00	1	07/06/20 22:40	07/06/20 22:40	75-69-4	
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/06/20 22:40	07/06/20 22:40	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/06/20 22:40	07/06/20 22:40	75-01-4	
(ylene (Total)	ND	ug/L	3.00	1	07/06/20 22:40	07/06/20 22:40	1330-20-7	
Surrogates		-						
Toluene-d8 (S)	104	%	80.0-120	1	07/06/20 22:40	07/06/20 22:40	2037-26-5	
I-Bromofluorobenzene (S)	96.9	%	77.0-126	1	07/06/20 22:40	07/06/20 22:40	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70.0-130	1	07/06/20 22:40	07/06/20 22:40	17060-07-0	



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Lab ID: 10523355011 Sample: Trip Blank Collected: 06/29/20 00:00 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet NΠ 1.25 25 06/29/20 00:00 07/09/20 19:19 67-64-1 Acetone mg/kg Allyl chloride ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 107-05-1 Benzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 71-43-2 ND 0.0250 06/29/20 00:00 07/09/20 19:19 Bromobenzene mg/kg 25 108-86-1 0.0250 06/29/20 00:00 07/09/20 19:19 74-97-5 Bromochloromethane ND mg/kg 25 Bromodichloromethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 75-27-4 Bromoform ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 75-25-2 mg/kg **Bromomethane** NΠ 0.125 25 06/29/20 00:00 07/09/20 19:19 74-83-9 mg/kg ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 98-06-6 Carbon tetrachloride ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 56-23-5 Chlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 108-90-7 Dibromochloromethane ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 124-48-1 mg/kg Chloroethane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 75-00-3 06/29/20 00:00 07/09/20 19:19 67-66-3 Chloroform ND mg/kg 0.125 25 Chloromethane ND mg/kg 0.0625 25 06/29/20 00:00 07/09/20 19:19 74-87-3 2-Chlorotoluene ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 96-12-8 06/29/20 00:00 07/09/20 19:19 74-95-3 ND 25 Dibromomethane mg/kg 0.0250 1,2-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 106-46-7 Dichlorodifluoromethane ND 0.125 25 06/29/20 00:00 07/09/20 19:19 mg/kg 75-71-8 Dichlorofluoromethane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 75-43-4 1,1-Dichloroethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 75-34-3 ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 107-06-2 1.2-Dichloroethane mg/kg ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0250 25 06/29/20 00:00 07/09/20 19:19 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/29/20 00:00 07/09/20 19:19 156-60-5 0.0250 trans-1,2-Dichloroethene mg/kg ND 25 1,2-Dichloropropane mg/kg 0.0250 06/29/20 00:00 07/09/20 19:19 78-87-5 1,3-Dichloropropane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 142-28-9 2,2-Dichloropropane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 594-20-7 1,1-Dichloropropene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 563-58-6 ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 10061-02-6 ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 98-82-8 ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.250 25 06/29/20 00:00 07/09/20 19:19 78-93-3 Methylene Chloride ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 75-09-2



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

4-Bromofluorobenzene (S)

Date: 07/13/2020 12:21 PM

98.5

%

Lab ID: 10523355011 Collected: 06/29/20 00:00 Received: 06/30/20 16:00 Sample: Trip Blank Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.250 25 06/29/20 00:00 07/09/20 19:19 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 1634-04-4 Naphthalene ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 91-20-3 n-Propylbenzene ND 0.0250 06/29/20 00:00 07/09/20 19:19 103-65-1 mg/kg 25 ND 0.0250 06/29/20 00:00 07/09/20 19:19 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0250 25 06/29/20 00:00 07/09/20 19:19 79-34-5 mg/kg ND 0.0250 06/29/20 00:00 07/09/20 19:19 127-18-4 Tetrachloroethene 25 mg/kg ND 0.125 25 06/29/20 00:00 07/09/20 19:19 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 19:19 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 87-61-6 06/29/20 00:00 07/09/20 19:19 120-82-1 1,2,4-Trichlorobenzene ND mg/kg 0.0250 25 1,2,4-Trimethylbenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 71-55-6 1,1,2-Trichloroethane ND 0.0250 06/29/20 00:00 07/09/20 19:19 79-00-5 mg/kg 25 Trichloroethene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 79-01-6 Trichlorofluoromethane ND mg/kg 25 06/29/20 00:00 07/09/20 19:19 75-69-4 0.125 06/29/20 00:00 07/09/20 19:19 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0250 25 ND 1,2,3-Trichloropropane mg/kg 0.0625 25 06/29/20 00:00 07/09/20 19:19 96-18-4 ND Vinyl chloride mg/kg 0.0250 25 06/29/20 00:00 07/09/20 19:19 75-01-4 06/29/20 00:00 07/09/20 19:19 1330-20-7 ND 25 Xylene (Total) mg/kg 0.0750 1,4-Dioxane (p-Dioxane) ND mg/kg 2.50 25 06/29/20 00:00 07/09/20 19:19 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 108 % 70.0-130 25 06/29/20 00:00 07/09/20 19:19 17060-07-0 91.9 75.0-131 06/29/20 00:00 07/09/20 19:19 2037-26-5 Toluene-d8 (S) % 25

67.0-138

25

06/29/20 00:00 07/09/20 19:19 460-00-4



**QUALITY CONTROL DATA** 

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

QC Batch: 684710 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523355002, 10523355003, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008,

10523355009

METHOD BLANK: 3662363 Matrix: Water

Associated Lab Samples: 10523355002, 10523355003, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008,

10523355009

ParameterUnitsBlank Reporting ResultReporting LimitAnalyzedQualifiersLead, Dissolvedug/LND10.007/06/20 15:51

LABORATORY CONTROL SAMPLE: 3662364

Spike LCS LCS % Rec Parameter Units Result % Rec Limits Qualifiers Conc. 96 Lead, Dissolved ug/L 1000 959 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3662365 3662366

MS MSD

10523363001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Lead, Dissolved ND 75-125 20 1000 1000 935 934 93 93 0 ug/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

QC Batch: 1504675 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523355002, 10523355003, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008,

10523355009, 10523355010

METHOD BLANK: R3547423-3 Matrix: Water

Associated Lab Samples: 10523355002, 10523355003, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008,

10523355009, 10523355010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/06/20 20:47	
Benzene	ug/L	ND	1.00	07/06/20 20:47	
Bromobenzene	ug/L	ND	1.00	07/06/20 20:47	
Bromodichloromethane	ug/L	ND	1.00	07/06/20 20:47	
Bromochloromethane	ug/L	ND	1.00	07/06/20 20:47	
Bromoform	ug/L	ND	1.00	07/06/20 20:47	
Bromomethane	ug/L	ND	5.00	07/06/20 20:47	
n-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
sec-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
tert-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Carbon tetrachloride	ug/L	ND	1.00	07/06/20 20:47	
Chlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
Dibromochloromethane	ug/L	ND	1.00	07/06/20 20:47	
Chloroethane	ug/L	ND	5.00	07/06/20 20:47	
Chloroform	ug/L	ND	5.00	07/06/20 20:47	
Chloromethane	ug/L	ND	2.50	07/06/20 20:47	
2-Chlorotoluene	ug/L	ND	1.00	07/06/20 20:47	
4-Chlorotoluene	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/06/20 20:47	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/06/20 20:47	
Dibromomethane	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
Dichlorodifluoromethane	ug/L	ND	5.00	07/06/20 20:47	
Dichlorofluoromethane	ug/L	ND	5.00	07/06/20 20:47	
1,1-Dichloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,1-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
1,1-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
1,3-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
2,2-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
Ethylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/06/20 20:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

METHOD BLANK: R3547423-3 Matrix: Water

Associated Lab Samples: 10523355002, 10523355003, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008,

10523355009, 10523355010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	ND ND	1.00	07/06/20 20:47	
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/06/20 20:47	
p-Isopropyltoluene	ug/L	ND	1.00	07/06/20 20:47	
2-Butanone (MEK)	ug/L	ND	10.0	07/06/20 20:47	
Methylene Chloride	ug/L	ND	5.00	07/06/20 20:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/06/20 20:47	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/06/20 20:47	
Naphthalene	ug/L	ND	5.00	07/06/20 20:47	
n-Propylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Styrene	ug/L	ND	1.00	07/06/20 20:47	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/06/20 20:47	
Tetrachloroethene	ug/L	ND	1.00	07/06/20 20:47	
Tetrahydrofuran	ug/L	ND	5.00	07/06/20 20:47	
Toluene	ug/L	ND	1.00	07/06/20 20:47	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/06/20 20:47	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/06/20 20:47	
Trichloroethene	ug/L	ND	1.00	07/06/20 20:47	
Trichlorofluoromethane	ug/L	ND	5.00	07/06/20 20:47	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/06/20 20:47	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/06/20 20:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Vinyl chloride	ug/L	ND	1.00	07/06/20 20:47	
Xylene (Total)	ug/L	ND	3.00	07/06/20 20:47	
Allyl chloride	ug/L	ND	5.00	07/06/20 20:47	
Toluene-d8 (S)	%	109	80.0-120	07/06/20 20:47	
4-Bromofluorobenzene (S)	%	96.5	77.0-126	07/06/20 20:47	
1,2-Dichloroethane-d4 (S)	%	112	70.0-130	07/06/20 20:47	

LABORATORY CONTROL SAMPLE & LCSD: R3547423-1 R3547423-2											
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max		
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers	
Acetone	ug/L	25.0	22.1	19.2	88.4	76.8	19.0-160	14.0	27		
Benzene	ug/L	5.00	5.46	5.39	109	108	70.0-123	1.29	20		
Bromobenzene	ug/L	5.00	4.46	4.41	89.2	88.2	73.0-121	1.13	20		
Bromodichloromethane	ug/L	5.00	5.61	5.66	112	113	75.0-120	0.887	20		
Bromochloromethane	ug/L	5.00	5.97	6.24	119	125	76.0-122	4.42	20 l	_0	
Bromoform	ug/L	5.00	5.66	5.36	113	107	68.0-132	5.44	20		
Bromomethane	ug/L	5.00	5.56	5.63	111	113	10.0-160	1.25	25		
n-Butylbenzene	ug/L	5.00	4.62	4.66	92.4	93.2	73.0-125	0.862	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

LABORATORY CONTROL SAMPLE &	& LCSD: R3547	423-1	R	3547423-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
ec-Butylbenzene	ug/L	5.00	4.58	4.70	91.6	94.0	75.0-125	2.59	20	
ert-Butylbenzene	ug/L	5.00	4.46	4.63	89.2	92.6	76.0-124	3.74	20	
Carbon tetrachloride	ug/L	5.00	5.88	5.64	118	113	68.0-126	4.17	20	
Chlorobenzene	ug/L	5.00	6.12	6.19	122	124	80.0-121	1.14	20	L0
Dibromochloromethane	ug/L	5.00	6.06	6.07	121	121	77.0-125	0.165	20	
Chloroethane	ug/L	5.00	5.63	5.44	113	109	47.0-150	3.43	20	
Chloroform	ug/L	5.00	5.46	5.51	109	110	73.0-120	0.912	20	
Chloromethane	ug/L	5.00	5.91	5.82	118	116	41.0-142	1.53	20	
2-Chlorotoluene	ug/L	5.00	4.42	4.49	88.4	89.8	76.0-123	1.57	20	
I-Chlorotoluene	ug/L	5.00	4.07	4.22	81.4	84.4	75.0-122	3.62	20	
,2-Dibromo-3-chloropropane	ug/L	5.00	4.96	4.63		92.6	58.0-134	6.88	20	
,2-Dibromoethane (EDB)	ug/L	5.00	5.45	5.55		111	80.0-122	1.82	20	
Dibromomethane	ug/L	5.00	5.45	5.40		108	80.0-120	0.922	20	
,2-Dichlorobenzene	ug/L	5.00	5.18	5.10		102	79.0-121	1.56	20	
,3-Dichlorobenzene	ug/L	5.00	4.95	4.96		99.2		0.202	20	
,4-Dichlorobenzene	ug/L	5.00	4.85	5.05		101	79.0-120	4.04	20	
Dichlorodifluoromethane	ug/L	5.00	7.31	7.18		144	51.0-149	1.79	20	
Dichlorofluoromethane	ug/L	5.00	5.91	5.85		117	65.0-133	1.02	20	
,1-Dichloroethane	ug/L	5.00	5.15	5.44		109	70.0-126	5.48	20	
,2-Dichloroethane	ug/L	5.00	5.87	5.69		114	70.0-120	3.11	20	
,1-Dichloroethene	ug/L	5.00	5.38	5.53		111	71.0-124	2.75	20	
is-1,2-Dichloroethene	ug/L	5.00	5.30	5.45		109	73.0-124	2.79	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.49	5.43		117	73.0-120	6.18	20	
,2-Dichloropropane	ug/L	5.00	4.84	4.78		95.6	77.0-125	1.25	20	
,1-Dichloropropene	ug/L	5.00	5.38	5.56		111	74.0-125	3.29	20	
,3-Dichloropropane		5.00	4.99	5.17	99.8	103	80.0-120	3.54	20	
is-1,3-Dichloropropene	ug/L ug/L	5.00	4.99	5.17	99.6 96.4	100	80.0-120	3.87	20	
	Ū						78.0-124			
rans-1,3-Dichloropropene	ug/L	5.00	5.01	5.05	100	101		0.795	20	
2,2-Dichloropropane	ug/L	5.00	5.46	5.41	109	108	58.0-130	0.920	20	
thylbenzene	ug/L	5.00	5.63	5.70		114	79.0-123	1.24	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.29	4.49		89.8	66.0-130	4.56	20	
lexachloro-1,3-butadiene	ug/L	5.00	5.10	5.16		103	54.0-138	1.17	20	
sopropylbenzene (Cumene)	ug/L	5.00	5.71	5.84		117	76.0-127	2.25	20	
o-Isopropyltoluene	ug/L	5.00	4.64	4.84		96.8	76.0-125	4.22	20	
2-Butanone (MEK)	ug/L	25.0	25.6	25.8		103	44.0-160	0.778	20	
Methylene Chloride	ug/L	5.00	4.61	4.74		94.8	67.0-120	2.78	20	
-Methyl-2-pentanone (MIBK)	ug/L	25.0	27.0	27.4		110	68.0-142	1.47	20	
Methyl-tert-butyl ether	ug/L	5.00	4.20	4.49	84.0	89.8	68.0-125	6.67	20	
laphthalene	ug/L	5.00	4.29	4.37		87.4	54.0-135	1.85	20	
-Propylbenzene	ug/L	5.00	4.62	4.60			77.0-124	0.434	20	
Styrene	ug/L	5.00	5.51	5.60			73.0-130	1.62	20	
,1,1,2-Tetrachloroethane	ug/L	5.00	5.77	5.85			75.0-125	1.38	20	
,1,2,2-Tetrachloroethane	ug/L	5.00	4.21	4.36			65.0-130	3.50	20	
etrachloroethene	ug/L	5.00	6.84	6.64			72.0-132	2.97	20	L0
etrahydrofuran	ug/L	5.00	4.19	4.37		87.4		4.21	20	
oluene	ug/L	5.00	5.52	5.54		111	79.0-120	0.362	20	
,1,2-Trichlorotrifluoroethane	ug/L	5.00	6.27	5.82	125	116	69.0-132	7.44	20	

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### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3547	423-1	R	3547423-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,3-Trichlorobenzene	ug/L	5.00	4.85	4.91	97.0	98.2	50.0-138	1.23	20	
1,2,4-Trichlorobenzene	ug/L	5.00	4.65	4.76	93.0	95.2	57.0-137	2.34	20	
1,1,1-Trichloroethane	ug/L	5.00	5.83	5.80	117	116	73.0-124	0.516	20	
1,1,2-Trichloroethane	ug/L	5.00	5.80	5.72	116	114	80.0-120	1.39	20	
Trichloroethene	ug/L	5.00	6.49	6.43	130	129	78.0-124	0.929	20 L	_0
Trichlorofluoromethane	ug/L	5.00	7.05	6.86	141	137	59.0-147	2.73	20	
1,2,3-Trichloropropane	ug/L	5.00	4.14	4.43	82.8	88.6	73.0-130	6.77	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.11	4.27	82.2	85.4	76.0-121	3.82	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.35	4.64	87.0	92.8	76.0-122	6.45	20	
Vinyl chloride	ug/L	5.00	5.77	5.75	115	115	67.0-131	0.347	20	
Xylene (Total)	ug/L	15.0	16.1	16.6	107	111	79.0-123	3.06	20	
Allyl chloride	ug/L	25.0	27.5	26.9	110	108	72.0-128	2.21	20	
Toluene-d8 (S)	%				107	108	80.0-120			
4-Bromofluorobenzene (S)	%				102	100	77.0-126			
1,2-Dichloroethane-d4 (S)	%				115	110	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

QC Batch: 1505870 Analysis Method: EPA 8260D

QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523355001, 10523355011

METHOD BLANK: R3547929-4 Matrix: Solid

Associated Lab Samples: 10523355001, 10523355011

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	 	ND	0.0500	07/09/20 13:27	
Benzene	mg/kg	ND	0.00100	07/09/20 13:27	
Bromobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Bromodichloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Bromochloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Bromoform	mg/kg	ND	0.00100	07/09/20 13:27	
Bromomethane	mg/kg	ND	0.00500	07/09/20 13:27	
n-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
sec-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
tert-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Carbon tetrachloride	mg/kg	ND	0.00100	07/09/20 13:27	
Chlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Dibromochloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Chloroethane	mg/kg	ND	0.00500	07/09/20 13:27	
Chloroform	mg/kg	ND	0.00500	07/09/20 13:27	
Chloromethane	mg/kg	ND	0.00250	07/09/20 13:27	
2-Chlorotoluene	mg/kg	ND	0.00100	07/09/20 13:27	
4-Chlorotoluene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	07/09/20 13:27	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	07/09/20 13:27	
Dibromomethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Dichlorodifluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
Dichlorofluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
1,1-Dichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
2,2-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
Ethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	07/09/20 13:27	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	07/09/20 13:27	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

METHOD BLANK: R3547929-4 Matrix: Solid

Associated Lab Samples: 10523355001, 10523355011

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	mg/kg	ND ND	0.00100	07/09/20 13:27	
p-Isopropyltoluene	mg/kg	ND	0.00100	07/09/20 13:27	
2-Butanone (MEK)	mg/kg	ND	0.0100	07/09/20 13:27	
Methylene Chloride	mg/kg	ND	0.00500	07/09/20 13:27	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	07/09/20 13:27	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	07/09/20 13:27	
Naphthalene	mg/kg	ND	0.00500	07/09/20 13:27	
n-Propylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Styrene	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
Tetrachloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
Tetrahydrofuran	mg/kg	ND	0.00500	07/09/20 13:27	
Toluene	mg/kg	ND	0.00500	07/09/20 13:27	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
Trichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
Trichlorofluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	07/09/20 13:27	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Vinyl chloride	mg/kg	ND	0.00100	07/09/20 13:27	
Xylene (Total)	mg/kg	ND	0.00300	07/09/20 13:27	
Allyl chloride	mg/kg	ND	0.00500	07/09/20 13:27	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	0.100	07/09/20 13:27	
Toluene-d8 (S)	%	93.8	75.0-131	07/09/20 13:27	
4-Bromofluorobenzene (S)	%	96.3	67.0-138	07/09/20 13:27	
1,2-Dichloroethane-d4 (S)	%	109	70.0-130	07/09/20 13:27	

LABORATORY CONTROL SAMPLE & LCSD: R3547929-1 R3547929-2											
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max		
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers	
Acetone	mg/kg	0.125	0.122	0.128	97.6	102	10.0-160	4.80	31		
Benzene	mg/kg	0.0250	0.0265	0.0274	106	110	70.0-123	3.34	20		
Bromobenzene	mg/kg	0.0250	0.0240	0.0251	96.0	100	73.0-121	4.48	20		
Bromodichloromethane	mg/kg	0.0250	0.0281	0.0291	112	116	73.0-121	3.50	20		
Bromochloromethane	mg/kg	0.0250	0.0270	0.0280	108	112	77.0-128	3.64	20		
Bromoform	mg/kg	0.0250	0.0275	0.0287	110	115	64.0-132	4.27	20		
Bromomethane	mg/kg	0.0250	0.0319	0.0322	128	129	56.0-147	0.936	20		
n-Butylbenzene	mg/kg	0.0250	0.0260	0.0268	104	107	68.0-135	3.03	20		
sec-Butylbenzene	mg/kg	0.0250	0.0255	0.0262	102	105	74.0-130	2.71	20		

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

ABORATORY CONTROL SAMPLE &	LCSD: R3547	929-1	R	3547929-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
ert-Butylbenzene	mg/kg	0.0250	0.0262	0.0269	105	108	75.0-127	2.64	20	
arbon tetrachloride	mg/kg	0.0250	0.0314	0.0316	126	126	66.0-128	0.635	20	
hlorobenzene	mg/kg	0.0250	0.0254	0.0261	102	104	76.0-128	2.72	20	
ibromochloromethane	mg/kg	0.0250	0.0270	0.0277	108	111	74.0-127	2.56	20	
hloroethane	mg/kg	0.0250	0.0325	0.0326	130	130	61.0-134	0.307	20	
hloroform	mg/kg	0.0250	0.0274	0.0284	110	114	72.0-123	3.58	20	
hloromethane	mg/kg	0.0250	0.0238	0.0240	95.2	96.0	51.0-138	0.837	20	
-Chlorotoluene	mg/kg	0.0250	0.0252	0.0263	101	105	75.0-124	4.27	20	
-Chlorotoluene	mg/kg	0.0250	0.0253	0.0261	101	104	75.0-124	3.11	20	
,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0232	0.0263	92.8	105	59.0-130	12.5	20	
,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0248	0.0254	99.2	102	74.0-128	2.39	20	
ibromomethane	mg/kg	0.0250	0.0275	0.0284	110	114	75.0-122	3.22	20	
,2-Dichlorobenzene	mg/kg	0.0250	0.0249	0.0259	99.6	104	76.0-124	3.94	20	
,3-Dichlorobenzene	mg/kg	0.0250	0.0249	0.0257	99.6	103	76.0-125	3.16	20	
,4-Dichlorobenzene	mg/kg	0.0250	0.0255	0.0268	102	107	77.0-121	4.97	20	
richlorodifluoromethane	mg/kg	0.0250	0.0307	0.0292	123	117	43.0-156	5.01	20	
ichlorofluoromethane	mg/kg	0.0250	0.0293	0.0298	117	119	65.0-137	1.69	20	
.1-Dichloroethane	mg/kg	0.0250	0.0273	0.0279	109		70.0-127	2.17	20	
,2-Dichloroethane	mg/kg	0.0250	0.0282	0.0288	113	115	65.0-131	2.11	20	
,1-Dichloroethene	mg/kg	0.0250	0.0282	0.0282	113	113	65.0-131	0.00	20	
is-1,2-Dichloroethene	mg/kg	0.0250	0.0271	0.0275	108	110	73.0-125	1.47	20	
ans-1,2-Dichloroethene	mg/kg	0.0250	0.0272	0.0280	109	112	71.0-125	2.90	20	
,2-Dichloropropane	mg/kg	0.0250	0.0256	0.0265	102	106	74.0-125	3.45	20	
,1-Dichloropropene	mg/kg	0.0250	0.0277	0.0279	111		73.0-125	0.719	20	
,3-Dichloropropane	mg/kg	0.0250	0.0243	0.0247	97.2	98.8	80.0-125	1.63	20	
is-1,3-Dichloropropene	mg/kg	0.0250	0.0272	0.0277	109	111	76.0-127	1.82	20	
ans-1,3-Dichloropropene	mg/kg	0.0250	0.0266	0.0277	106	109	73.0-127	2.60	20	
,2-Dichloropropane	mg/kg	0.0250	0.0302	0.0308	121	123	59.0-135	1.97	20	
thylbenzene	mg/kg	0.0250	0.0263	0.0265	105	106	74.0-126	0.758	20	
ritylberizene liethyl ether (Ethyl ether)	mg/kg	0.0250	0.0258	0.0258	103	103	64.0-137	0.00	20	
lexachloro-1,3-butadiene	mg/kg	0.0250	0.0311	0.0200	124	127	57.0-150	1.91	20	
sopropylbenzene (Cumene)	mg/kg	0.0250	0.0269	0.0270	108	108	72.0-127	0.371	20	
-Isopropyltoluene	mg/kg	0.0250	0.0209	0.0274	100	110	72.0-127	0.733	20	
-Butanone (MEK)	mg/kg	0.0230	0.0272	0.0274	92.0	96.8	30.0-160	5.08	24	
lethylene Chloride	mg/kg	0.123	0.113	0.121	100	102	68.0-100	1.59	20	
-Methyl-2-pentanone (MIBK)	mg/kg	0.0230	0.0230	0.0234	91.2	96.8	56.0-143	5.96	20	
lethyl-tert-butyl ether	mg/kg	0.123	0.114	0.121	102	108	66.0-132	5.69	20	
laphthalene	mg/kg	0.0250	0.0236	0.0271	97.6		59.0-130	8.25	20	
-Propylbenzene	mg/kg	0.0250	0.0244	0.0263	102	106 104	74.0-126	2.72	20	
tyrene	mg/kg	0.0250	0.0254	0.0261	102	104	72.0-120	3.85	20	
,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0255	0.0265	102		74.0-127	3.01	20	
,1,2,2-Tetrachioroethane		0.0250	0.0202	0.0270	87.2	95.2		8.77	20	
	mg/kg						70.0-126			
etrachloroethene	mg/kg	0.0250	0.0276	0.0281	110			1.80	20	
etrahydrofuran	mg/kg	0.0250	0.0221	0.0225	88.4		37.0-146	1.79	24	
oluene	mg/kg	0.0250	0.0240	0.0247	96.0		75.0-121	2.87	20	
,1,2-Trichlorotrifluoroethane ,2,3-Trichlorobenzene	mg/kg mg/kg	0.0250 0.0250	0.0289 0.0278	0.0292 0.0301	116 111	117 120	61.0-139 59.0-139	1.03 7.94	20 20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

LABORATORY CONTROL SAMPLE & LCSD: R3547929-1 R3547929-2										
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0287	0.0298	115	119	62.0-137	3.76	20	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0312	0.0315	125	126	69.0-126	0.957	20	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0237	0.0247	94.8	98.8	78.0-123	4.13	20	
Trichloroethene	mg/kg	0.0250	0.0280	0.0285	112	114	76.0-126	1.77	20	
Trichlorofluoromethane	mg/kg	0.0250	0.0327	0.0326	131	130	61.0-142	0.306	20	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0249	0.0264	99.6	106	67.0-129	5.85	20	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0254	0.0259	102	104	70.0-126	1.95	20	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0257	0.0266	103	106	73.0-127	3.44	20	
Vinyl chloride	mg/kg	0.0250	0.0287	0.0292	115	117	63.0-134	1.73	20	
Xylene (Total)	mg/kg	0.0750	0.0773	0.0789	103	105	72.0-127	2.05	20	
Allyl chloride	mg/kg	0.125	0.133	0.136	106	109	70.0-131	2.23	20	
Toluene-d8 (S)	%				93.9	94.8	75.0-131			
4-Bromofluorobenzene (S)	%				98.4	99.9	67.0-138			
1,2-Dichloroethane-d4 (S)	%				116	121	70.0-130			

LABORATORY CONTROL SAMPLE:	R3547929-3					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg	1.00	1.15	115	18.0-160	
Toluene-d8 (S)	%			93.3	75.0-131	
4-Bromofluorobenzene (S)	%			97.1	67.0-138	
1,2-Dichloroethane-d4 (S)	%			106	70.0-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project:

2606-0017 Water Gremlin

Pace Project No.:

10523355

QC Batch:

QC Batch Method:

684521

EPA Mod. 3510C

Analysis Method:

EPA 8270E by SIM

Analysis Description:

8270E Water 14 Dioxane by SIM

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples:

10523355003

METHOD BLANK:

Matrix: Water

Associated Lab Samples: 10523355003

Parameter

Blank Reporting Result

Limit

Qualifiers

1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S) Units ug/L %.

ND 26

0.25 07/06/20 02:26 30-125 07/06/20 02:26

Analyzed

S0

LABORATORY CONTROL SAMPLE & LCSD:

3661524 Spike 3661525 LCSD LCS Result

LCSD % Rec % Rec % Rec

Max **RPD RPD** 

Qualifiers

1,4-Dioxane (SIM)

Units ug/L

Conc. Result 10 11.7

LCS

21.3 117

106 32-128

Limits

58

20 R1

1,4-Dioxane-d8 (S)

Date: 07/13/2020 12:21 PM

%.

Parameter

30 34 30-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

QC Batch: 685081 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523355002, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008, 10523355009

METHOD BLANK: 3664339 Matrix: Water

Associated Lab Samples: 10523355002, 10523355004, 10523355005, 10523355006, 10523355007, 10523355008, 10523355009

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed 1,4-Dioxane (SIM) ND 0.25 07/08/20 12:54 ug/L 1,4-Dioxane-d8 (S) 50 30-125 07/08/20 12:54 %.

LABORATORY CONTROL SAMPLE & I	_CSD: 3664340	3664341								
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,4-Dioxane (SIM)	ug/L	10	10.9	10.8	109	108	32-128	1	20	
1,4-Dioxane-d8 (S)	%.				38	41	30-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

QC Batch: 1505471 Analysis Method: SM 2540G

QC Batch Method: SM 2540 G Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523355001

METHOD BLANK: R3547903-1 Matrix: Solid

Associated Lab Samples: 10523355001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Total Solids % 0.00100 07/08/20 23:24

LABORATORY CONTROL SAMPLE: R3547903-2

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Solids** % 50.0 50.0 100 85.0-115

SAMPLE DUPLICATE: R3547903-3

Date: 07/13/2020 12:21 PM

L1235860-41 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 84.0 **Total Solids** % 0.128 83.9 10

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 07/13/2020 12:21 PM

1M Surrogate recovery outside laboratory control limits due to emulsio	outside laboratory control limits due to emulsion.
--	--

- CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.
- L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
- P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.
- R1 RPD value was outside control limits.
- S0 Surrogate recovery outside laboratory control limits.



### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523355

Date: 07/13/2020 12:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523355002	GP-36 (8-10)	EPA 3010A	684710	EPA 6010D	684975
10523355003	Rinsate 063020	EPA 3010A	684710	EPA 6010D	684975
10523355004	GP-36 (13-17)	EPA 3010A	684710	EPA 6010D	684975
10523355005	GP-36 (24-26)	EPA 3010A	684710	EPA 6010D	684975
10523355006	GP-36 (38-40)	EPA 3010A	684710	EPA 6010D	684975
10523355007	GP-36 (53-57)	EPA 3010A	684710	EPA 6010D	684975
10523355008	Dup 063020	EPA 3010A	684710	EPA 6010D	684975
10523355009	GP-36 (68-70)	EPA 3010A	684710	EPA 6010D	684975
10523355002	GP-36 (8-10)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355003	Rinsate 063020	EPA Mod. 3510C	684521	EPA 8270E by SIM	684703
10523355004	GP-36 (13-17)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355005	GP-36 (24-26)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355006	GP-36 (38-40)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355007	GP-36 (53-57)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355008	Dup 063020	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355009	GP-36 (68-70)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
10523355002	GP-36 (8-10)	8260D	1504675	EPA 8260D	1504675
10523355003	Rinsate 063020	8260D	1504675	EPA 8260D	1504675
10523355004	GP-36 (13-17)	8260D	1504675	EPA 8260D	1504675
10523355005	GP-36 (24-26)	8260D	1504675	EPA 8260D	1504675
10523355006	GP-36 (38-40)	8260D	1504675	EPA 8260D	1504675
10523355007	GP-36 (53-57)	8260D	1504675	EPA 8260D	1504675
10523355008	Dup 063020	8260D	1504675	EPA 8260D	1504675
10523355009	GP-36 (68-70)	8260D	1504675	EPA 8260D	1504675
10523355010	Trip Blank	8260D	1504675	EPA 8260D	1504675
10523355001	GP-36 (3-5)	5035A	1505870	EPA 8260D	1505870
10523355011	Trip Blank	5035A	1505870	EPA 8260D	1505870
10523355001	GP-36 (3-5)	SM 2540 G	1505471	SM 2540G	1505471

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ection A squired Client Information:	Section B Required Project Information:	Section C Invoice Information:	Page: \ of
Impany WENCY ASSCRAPS	Report To: HARON KENKE	Attention:	
V B	13	Company Name:	REGULATORY AGENCY
174	MAIN JAKORY, REN HORM		NPDES GROUND WATER DRINKING WATER
<b>≯</b>	ise Order No.:		UST RCRA OTHER
ione: Fax: n/a	Project Name: WATE GRENIN	Pace Project Manager:	Site Location NA (
quested Due Date/TATES C- DA	Project Number: 2006-00 P	Pace Profile #:	STATE   VVV
1		Requested	Requested Analysis Filtered (Y/N)
Section D Valid Matrix Codes Required Client Information MATRIX COL	(Hal o	Preservatives	
. 1	DW WY C = C C COMPOSIT		WO#: 10523355
SAMPLE ID WIFE ARR (A-Z, 0-9, r.) OTHER Sample IDS MUST BE UNIQUE TISSUE		рөч рөх реоТ <b>э</b> іг	
rem #		AMPLE TI JINDS ASO, JINDS ASO, JINDS ASO, JINOS	10523355
EP-26 (25)	-		15
30 (8-18)	25		1820 1840
2 Physik Overozo	1 (673) URO	2	₩3
4 (50-36 (BG-17)	(13-12) WE WED 1130	و	h 01870125
87-KZ 05-69	5500	و	C)
(Oh-35) dS-65   3	) M 630 130	و	- 1
58,800 10-18-18-18-18-18-18-18-18-18-18-18-18-18-			1200 CARD W
* \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	69.	× × × × × × × × × × × × × × × × × × ×	3
Q80 108-59 6	(20)		1000 M
10.			
12 ADDITIONAL COMMENTS	PET INCITISHED BY AFEI IATION	DATE TIME ACCEPTED BY AFFICIATION	DATE TIME SAMPLE CONDITIONS
יין אין	3	レクシンと	
4	mem		6/3020 4 V D Y
	SAMPLER NAME AND SIGNATURE	INATURE 7	t on (y ly .
Page 4	PRINT Name of SAMPLER:	MPLER: VEIN J. PANGOK.   WARE	Temp in Imples (Y/N)
2 of	SIGNA LUKE OT SA		SS
"imparrant Note: By signing this form you	ara decembro Peza's NET 30 day naymentiarmy and univengitation or unigas of 1 5% sac	or manth for any much	4/2 F. Att. 20205. 2017 15/4. 2007

# Pace Analytical®

hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

Sample Condition Upon Receipt  Wenck A 5500	~;ad	<b>e</b> .s	Pro	ject #:	<b>WO#</b> :	105	<u>523355</u>	5
Courier:         ☐ Fed Ex         ☐ UPS           ☐ Pace         ☐ SpeeDee	USP	S	Clic		PM: AKA CLIENT: V	IENCK	Due Date: 0	7/08/20
Tracking Number:	,							
Custody Seal on Cooler/Box Present? Yes	<b>(</b> 0	Sea	is intact?	☐Yes 💆	∮No <b>Biol</b> o	gical Tiss	sue Frozen? 🔲 Ye	s □No 风N/A
Packing Material: Bubble Wrap Bubble Bags	s 🔲 f	None	Othe	er <b>;p.b</b>		Te	mp Blank?	′es 🔲No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)	T	ype of l	ce: 🔀	Wet □Blue	□None	□Dry	Melted	
Did Samples Originate in West Virginia? ☐Yes 🗐 🗐 🗐	Were	All Co	ntainer T	emps Taken?	Yes 🗆 No	N/A	·	
Temp should be above freezing to 6°C Cooler Temp Read	w/temp	blank	4.2	1.2/44	o	Averag	e Corrected Temp	)
1.00	_		01	1. 11/1		(no t	emp blank only):	☐See Exceptions
Correction Factor: 100 Cooler Temp Corrected	w/temp	blank	: Y.L/	1.6147	°C		°C	1 Container
USDA Regulated Soil: ( N/A, water sample/Other: Did samples originate in a quarantine zone within the United ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check map	os)?	]Yes	$\searrow$	, Did samples Hawaii and P	originate from a Puerto Rico)?	foreign so	, , , , , , , , , , , , , , , , , , ,	4 (6/30/2) y, including
If Yes to either question, fill out a Re	guiated	Soil Ch	ecklist (F	-MN-Q-338) and	include with	<del></del>	<del></del>	
1						СОММ	ENTS:	
Chain of Custody Present and Filled Out?	Yes Yes	No_	·····	1.				
	$\supset$	□No		2.				
Sampler Name and/or Signature on COC?  Samples Arrived within Hold Time?	XYes	□No □No	□N/A	3. 4.			<u></u>	
-		∑⁄40		5. Fecal Col			orm/E coli  BOD/cBC	DD Hex Chrome
Rush Turn Around Time Requested?	Yes	□No		6.				,
Sufficient Volume?	Yes	□No		7.				,
Correct Containers Used?	Yes	□No		8.				
-Pace Containers Used?	Yes	□No						
Containers Intact?	Yes	□No\		9.				
Field Filtered Volume Received for Dissolved Tests?	☐Yes	□No	<b>D</b> ₩/A	10. Is sedime	ent visible in the	e dissolve	d container? Yes	s 🗌 No
Is sufficient information available to reconcile the samples to the COC?  Matrix: Water Soil Oil Other	Yes	□No	7	11. If no, write	ID/ Date/Time o	n Containe	r Below:	See Exception
All containers needing acid/base preservation have been	Yes	□No	DZN/A	12. Sample #				
checked?			<i>_</i>					-
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	X√N/A	☐ NaC	рн 🔲 ні	NO₃	∐H₂SO₄ [	Zinc Acetate
1		١	1	Positive for Res	s. 🗌 Yes			See Exception
Exceptions: VOI, Coliform, TOC/DOC Oil and Grease,	X <sup>[Yes</sup>	∥∐No	N/A	Chlorine?	No	pH Pape		L
DRO/8015 (Water) and Dioxin/PFAS	the to	1.00	100	Res. Chlorine	0-6 Roll		0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	∐Yes	∏No	N/A	13.	<u> </u>			See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes Yes	∐No	□N/A					$\nearrow$
Trip Blank Present?	Yes	□No	□N/A	14. 260	0864 (2)		1 pp CoC	.1
	Yes	□No	□N/A	Pace Trip	Blank Lot # (if p	purchased	1):051820-3 (	1]
CLIENT NOTIFICATION/RESOLUTION					Fie	ld Data R	t <b>equired?</b>	□No 、
Person Contacted:				Date/Time:			<u></u>	qu.
Comments/Resolution:								
Project Manager Review:	/	01		Da	to:	7/4/00	20	
Note: Whenever there is a discrepancy affecting North Carolina co	ompliance	e sample	, a copy			7/1/20 rth Carolin	∠∪ a DEHNR Certificatio	 on Office ( i.e out of



## Document Name: **Headspace Exception**

Document Revised: 26Mar2020
Page 1 of 1

Document No.: ENV-FRM-MIN4-0140 Rev.00

Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
GP-36(68-70)	3	0	3	6	4
GP-3(el 53-57)	Õ	3	3	6	4
3	,				
		·			
			·		4
**************************************					

L1235869 Chain of Custody ace Analytical Samples were sent directly to the Subcontracting Laboratory. State Of Origin: MN www.pacelabs.com Cert. Needed: X Yes No Workorder: 10523355 Workorder Name: 2606-0017 Water Gremlin Owner Received Date: 6/30/2020 Results Requested By: 7/8/2020 Report To Subcontract To Requested Analysis Annika Asp Pace National Pace Analytical Minnesota 12065 Lebanon Road 1700 Elm Street Mt. Juliet, TN 37122 Suite 200 Moisture (Pace National) Minneapolis, MN 55414 Phone (612)607-1700 8260D (Pace 1,4 Dioxane & VOC **Preserved Containers** by Collect Sample Item | Sample ID Type Date/Time Lab ID Matrix LAB USE ONLY Χ X GP-36 (3-5) PS 6/29/2020 13:30 10523355001 Solid -0 GP-36 (8-10) PS 6/30/2020 10:30 10523355002 Water 3 3 X 3 PS X Rinsate 063020 6/30/2020 11:00 10523355003 Water 3 3 3 X GP-36 (13-17) PS 6/30/2020 11:30 10523355004 Water PS 3 3 X 6/30/2020 12:00 10523355005 Water GP-36 (24-26)

						Comments			
Transfers	Released By	Date/Time	Received By	Date/Time					
1	76 Mace	711/24 1535	1 2 2 2 2 1 1 2			nt due to effervescing sample dioxane only (no VOC)	S.		
2			0 1	11: 01	or sumple needs 1,4	dioxarie orny (no voc)			
3	NOV.		7. Welt	7/2/20 08:9	S		0		
Cooler Te	emperature on Receipt 38°C	Custod	y Seal (Y) or N	Received on Ice	Y or N	Samples Intact	Y	or	N
	to maintain client confidentiality, loc				97		0		1000

3

3

3

3

2

Water

Water

Water

Water

Water

Solid

This chain of custody is considered complete as is since this information is available in the owner laboratory. 1320 7500 9

3

3

3

3

WPA3 4.0--2=38

PS

PS

PS

PS

PS

PS

6/30/2020 13:00

6/30/2020 14:00

6/30/2020 00:00

6/30/2020 15:00

6/29/2020 00:00

6/29/2020 00:00

10523355006

10523355007

10523355008

10523355009

10523355010

10523355011

RAD SCREEN: <0.5 mR/hr

GP-36 (38-40)

GP-36 (53-57)

Dup 063020

GP-36 (68-70)

Trip Blank

Trip Blank

10

X

X

X

X

Pace Analytical National Center for Cooler Receipt Fo		/ation	
Client: PACE MN		L12358	69
Cooler Received/Opened On: 7 / 2 / 20	Temperature:	3.8	17
Received By: Lakeacher Webster			
Signature: L. White			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?	AND A SECOND		
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?	78.		S 1/2
If Applicable			E ATTAC
VOA Zero headspace?			
Preservation Correct / Checked?		- W 18 10	The second





July 13, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

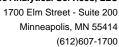
Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Osp

**Enclosures** 

cc: Aaron Benker, Wenck Associates Ben Holcomb, Wenck Associates Kelly Jaworski, Wenck Associates Inc







### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959

Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Maryland Certification #: 322

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081

New York Certification #: 11647 North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101

New Jersey Certification #: MN002

Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563

Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486

West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

### **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: Al30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002

Maryland Certification #: 1N0002 Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

### **REPORT OF LABORATORY ANALYSIS**

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### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789



## **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523363001	GP-37 (15-18)	Water	06/29/20 13:00	06/30/20 16:00
10523363002	GP-37 (23-26)	Water	06/29/20 13:40	06/30/20 16:00
10523363003	GP-37 (31-34)	Water	06/29/20 14:30	06/30/20 16:00
10523363004	Dup 062920	Water	06/29/20 00:00	06/30/20 16:00
10523363005	GP-37 (38-40)	Water	06/29/20 14:50	06/30/20 16:00
10523363006	GP-38 (3-4)	Solid	06/29/20 16:50	06/30/20 16:00
10523363007	Water Trip Blanks	Water	06/29/20 00:00	06/30/20 16:00
10523363008	Soil Trip Blanks	Solid	06/29/20 00:00	06/30/20 16:00
10523363009	GP-39 (3-4)	Solid	06/29/20 17:35	06/30/20 16:00
10523363010	GP-40 (3-4)	Solid	06/30/20 07:40	06/30/20 16:00
10523363011	GP-41 (3-4)	Solid	06/30/20 08:30	06/30/20 16:00
10523363012	GP-42 (3-4)	Solid	06/30/20 09:00	06/30/20 16:00
10523363013	GP-43 (6-9)	Water	06/30/20 10:30	06/30/20 16:00
10523363014	GP-43 (14-17)	Water	06/30/20 11:30	06/30/20 16:00
10523363015	GP-43 (22-25)	Water	06/30/20 12:40	06/30/20 16:00
10523363016	GP-43 (30-33)	Water	06/30/20 13:50	06/30/20 16:00
10523363017	GP-43 (38-40)	Water	06/30/20 14:45	06/30/20 16:00

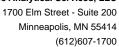


## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523363001	GP-37 (15-18)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
10523363002	GP-37 (23-26)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
10523363003	GP-37 (31-34)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
10523363004	Dup 062920	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
0523363005	GP-37 (38-40)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
0523363006	GP-38 (3-4)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523363007	Water Trip Blanks	EPA 8260D	JHH	70	PAN
0523363008	Soil Trip Blanks	EPA 8260D	ADM	71	PAN
10523363009	GP-39 (3-4)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523363010	GP-40 (3-4)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523363011	GP-41 (3-4)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523363012	GP-42 (3-4)	EPA 8260D	ADM	71	PAN
		SM 2540G	KBC	1	PAN
10523363013	GP-43 (6-9)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
0523363014	GP-43 (14-17)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
10523363015	GP-43 (22-25)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JHH	70	PAN
10523363016	GP-43 (30-33)	EPA 6010D	IP	1	PASI-M





## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523363017	GP-43 (38-40)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-37 (15-18)	Lab ID: 105	23363001	Collected: 06/29/2	0 13:00	Received: 06	3/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:03	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	270E by SIM Prepara	tion Me	thod: EPA Mod. 3	3510C		
	Pace Analytica	Services -	Minneapolis					
1,4-Dioxane (SIM)	ND	ug/L	0.31	1	07/06/20 17:48	07/08/20 16:43	3 123-91-1	
Surrogates I,4-Dioxane-d8 (S)	43	%.	30-125	1	07/06/20 17:48	07/08/20 16:43	3	
/OA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 8	260D			
70A (00/M0) 0200D	Pace National		1 reparation we	1100.0	2000			
				_				
Acetone	ND	ug/L	50.0	1	07/03/20 22:55			
Allyl chloride	ND	ug/L	5.00	1	07/03/20 22:55			
Benzene	ND	ug/L	1.00	1	07/03/20 22:55		-	
Bromobenzene	ND	ug/L	1.00	1	07/03/20 22:55			
Bromochloromethane	ND	ug/L	1.00	1	07/03/20 22:55			
Bromodichloromethane	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 75-27-4	
romoform	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 75-25-2	
romomethane	ND	ug/L	5.00	1	07/03/20 22:55	07/03/20 22:55	74-83-9	
-Butylbenzene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 104-51-8	
ec-Butylbenzene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/03/20 22:55			
Dibromochloromethane	ND	ug/L	1.00	1	07/03/20 22:55			
Chloroethane	ND	ug/L	5.00	1	07/03/20 22:55			
Chloroform	ND	ug/L	5.00	1	07/03/20 22:55			
Chloromethane	ND	ug/L	2.50	1	07/03/20 22:55			CC
2-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 22:55			CC
-Chlorotoluene	ND	•	1.00	1	07/03/20 22:55			
		ug/L						
,2-Dibromo-3-chloropropane ,2-Dibromoethane (EDB)	ND ND	ug/L	5.00	1	07/03/20 22:55 07/03/20 22:55			
,2-Dibromoethane Dibromomethane		ug/L	1.00	1				
	ND	ug/L	1.00	1	07/03/20 22:55			
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 22:55			
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 22:55			
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 22:55			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/03/20 22:55			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/03/20 22:55			
,1-Dichloroethane	ND	ug/L	1.00	1	07/03/20 22:55			
,2-Dichloroethane	ND	ug/L	1.00	1	07/03/20 22:55			
,1-Dichloroethene	ND	ug/L	1.00	1	07/03/20 22:55			
sis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 22:55			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 156-60-5	
,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	78-87-5	
,1-Dichloropropene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 563-58-6	
I,3-Dichloropropane	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	5 142-28-9	
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/03/20 22:55			

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-37 (15-18)	Lab ID: 105	23363001	Collected: 06/29/2	0 13:00	Received: 06	/30/20 16:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1		07/03/20 22:55		
Ethylbenzene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	98-82-8	
-Isopropyltoluene	ND	ug/L	1.00	1		07/03/20 22:55		
P-Butanone (MEK)	ND	ug/L	10.0	1	07/03/20 22:55	07/03/20 22:55	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1		07/03/20 22:55		L0
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		07/03/20 22:55		
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/03/20 22:55		
laphthalene	ND	ug/L	5.00	1		07/03/20 22:55		
-Propylbenzene	ND	ug/L	1.00	1	07/03/20 22:55	07/03/20 22:55	103-65-1	
Styrene	ND	ug/L	1.00	1		07/03/20 22:55		
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 22:55		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 22:55		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/03/20 22:55		
etrachloroethene	ND	ug/L	1.00	1		07/03/20 22:55		
etrahydrofuran	ND	ug/L	5.00	1		07/03/20 22:55		
oluene	ND	ug/L	1.00	1		07/03/20 22:55		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 22:55		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 22:55		
,1,1-Trichloroethane	ND	ug/L	1.00	1		07/03/20 22:55		
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/03/20 22:55		
richloroethene	ND	ug/L	1.00	1		07/03/20 22:55		LO
richlorofluoromethane	ND	ug/L	5.00	1		07/03/20 22:55		
,2,3-Trichloropropane	ND	ug/L	2.50	1		07/03/20 22:55		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/03/20 22:55		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/03/20 22:55		
/inyl chloride	ND	ug/L	1.00	1		07/03/20 22:55		
(ylene (Total)	ND	ug/L	3.00	1		07/03/20 22:55		
Surrogates	140	ug/ L	3.00	•	01,00,20 22.00	0.,00,20 22.00	1000 20 7	
Toluene-d8 (S)	99.7	%	80.0-120	1	07/03/20 22:55	07/03/20 22:55	2037-26-5	
I-Bromofluorobenzene (S)	103	%	77.0-126	1		07/03/20 22:55		
1,2-Dichloroethane-d4 (S)	100	%	70.0-130	1	07/03/20 22:55			



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-37 (23-26)	Lab ID: 105	23363002	Collected: 06/29/2	0 13:40	Received: 06	3/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	10D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:24	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	tion Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.31	1	07/06/20 17:48	07/08/20 17:04	123-91-1	
1,4-Dioxane-d8 (S)	40	%.	30-125	1	07/06/20 17:48	07/08/20 17:04	ļ	
VOA (GC/MS) 8260D	•		260D Preparation Me	thod: 82	260D			
	Pace National	- IVIT. JUIIET						
Acetone	ND	ug/L	50.0	1	07/03/20 23:16			
Allyl chloride	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	107-05-1	
Benzene	ND	ug/L	1.00	1	07/03/20 23:16			
Bromobenzene	ND	ug/L	1.00	1	07/03/20 23:16			
Bromochloromethane	ND	ug/L	1.00	1	07/03/20 23:16			
Bromodichloromethane	ND	ug/L	1.00	1	07/03/20 23:16			
romoform	ND	ug/L	1.00	1	07/03/20 23:16			
romomethane	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	74-83-9	
-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	104-51-8	
ec-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	75-00-3	
Chloroform	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/03/20 23:16	07/03/20 23:16	74-87-3	CC
-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	95-49-8	
-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	96-12-8	
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	106-46-7	
) Dichlorodifluoromethane	ND	ug/L	5.00	1	07/03/20 23:16			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/03/20 23:16	07/03/20 23:16	75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:16			
,2-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:16			
,1-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:16			
sis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:16			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:16			
,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:16			
,1-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:16			
,3-Dichloropropane	ND ND	ug/L ug/L	1.00	1	07/03/20 23:16			
,3-Dichloropropane is-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/03/20 23:16			

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-37 (23-26)	Lab ID: 105	23363002	Collected: 06/29/2	0 13:40	Received: 06	6/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1		07/03/20 23:16		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/03/20 23:16	07/03/20 23:16	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1		07/03/20 23:16		L0
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		07/03/20 23:16		
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/03/20 23:16		
laphthalene	ND	ug/L	5.00	1		07/03/20 23:16		
-Propylbenzene	ND	ug/L	1.00	1	07/03/20 23:16	07/03/20 23:16	103-65-1	
Styrene	ND	ug/L	1.00	1		07/03/20 23:16		
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 23:16		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 23:16		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/03/20 23:16		
etrachloroethene	ND	ug/L	1.00	1		07/03/20 23:16		
etrahydrofuran	ND	ug/L	5.00	1		07/03/20 23:16		
oluene	ND	ug/L	1.00	1		07/03/20 23:16		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 23:16		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 23:16		
,1,1-Trichloroethane	ND	ug/L	1.00	1		07/03/20 23:16		
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/03/20 23:16		
richloroethene	ND	ug/L	1.00	1		07/03/20 23:16		LO
richlorofluoromethane	ND	ug/L	5.00	1		07/03/20 23:16		
,2,3-Trichloropropane	ND	ug/L	2.50	1		07/03/20 23:16		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/03/20 23:16		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/03/20 23:16		
/inyl chloride	ND	ug/L	1.00	1		07/03/20 23:16		
(ylene (Total)	ND	ug/L	3.00	1		07/03/20 23:16		
Surrogates	140	ug/ L	3.00	•	0.700/20 20.10	0.700,20 20.10	1000 20 7	
oluene-d8 (S)	101	%	80.0-120	1	07/03/20 23:16	07/03/20 23:16	2037-26-5	
-Bromofluorobenzene (S)	106	%	77.0-126	1		07/03/20 23:16		
1,2-Dichloroethane-d4 (S)	99.6	%	70.0-130	1		07/03/20 23:16		



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-37 (31-34)	Lab ID: 1052	23363003	Collected: 06/29/2	0 14:30	Received: 06	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:2	7 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytical		270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM)	0.94	ug/L	0.25	1	07/06/20 17:48	07/08/20 17:2	5 123-91-1	
Surrogates		3-		-				
1,4-Dioxane-d8 (S)	37	%.	30-125	1	07/06/20 17:48	07/08/20 17:29	5	
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National -	Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/03/20 23:36	07/03/20 23:30	6 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/03/20 23:36			
Benzene	ND	ug/L	1.00	1	07/03/20 23:36			
Bromobenzene	ND	ug/L	1.00	1	07/03/20 23:36			
Bromochloromethane	ND	ug/L	1.00	1		07/03/20 23:30		
Bromodichloromethane	ND	ug/L	1.00	1	07/03/20 23:36			
Bromoform	ND	ug/L	1.00	1		07/03/20 23:30		
Bromomethane	ND	ug/L	5.00	1	07/03/20 23:36	07/03/20 23:30	6 74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:36			
sec-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:36			
ert-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:36			
Carbon tetrachloride	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/03/20 23:36			
Chloroform	ND	ug/L	5.00	1	07/03/20 23:36			
Chloromethane	ND	ug/L	2.50	1	07/03/20 23:36	07/03/20 23:30	6 74-87-3	CC
2-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 95-49-8	
1-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/03/20 23:36	07/03/20 23:30	6 96-12-8	
I,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	5 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	5 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/03/20 23:36	07/03/20 23:30	6 75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	1	07/03/20 23:36	07/03/20 23:30	6 75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 75-34-3	
,2-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:30	6 107-06-2	
,1-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:36			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:36			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:36			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:36			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:36			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:36			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:36			



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-37 (31-34)	Lab ID: 105	23363003	Collected: 06/29/2	20 14:30	Received: 06	6/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Metl	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/03/20 23:36	07/03/20 23:36	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1		07/03/20 23:36		L0
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/03/20 23:36	07/03/20 23:36	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/03/20 23:36	07/03/20 23:36	1634-04-4	
Naphthalene	ND	ug/L	5.00	1		07/03/20 23:36		
n-Propylbenzene	ND	ug/L	1.00	1		07/03/20 23:36		
Styrene	ND	ug/L	1.00	1		07/03/20 23:36		
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 23:36		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/03/20 23:36		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/03/20 23:36		
etrachloroethene	ND	ug/L	1.00	1		07/03/20 23:36		
Tetrahydrofuran	ND	ug/L	5.00	1		07/03/20 23:36		
Toluene	ND	ug/L	1.00	1		07/03/20 23:36		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 23:36		
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/03/20 23:36		
,1,1-Trichloroethane	ND	ug/L	1.00	1		07/03/20 23:36		
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/03/20 23:36		
Frichloroethene	ND	ug/L	1.00	1		07/03/20 23:36		L0
Trichlorofluoromethane	ND	ug/L ug/L	5.00	1		07/03/20 23:36		LU
1,2,3-Trichloropropane	ND ND	ug/L ug/L	2.50	1		07/03/20 23:36		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/03/20 23:36		
•	ND	Ū	1.00	1		07/03/20 23:36		
,3,5-Trimethylbenzene /inyl chloride	ND ND	ug/L ug/L	1.00	1		07/03/20 23:36		
•	ND ND	•	3.00	1		07/03/20 23:36		
Kylene (Total) S <b>urrogates</b>	טא	ug/L	3.00	1	01/03/20 23:36	01/03/20 23:36	1330-20-7	
Foluene-d8 (S)	99.1	%	80.0-120	1	07/03/20 22·36	07/03/20 23:36	2037-26-5	
1-Bromofluorobenzene (S)	104	%	77.0-126	1		07/03/20 23:36		
` '		%	70.0-120	1				
1,2-Dichloroethane-d4 (S)	99.4	%	70.0-130	1	07/03/20 23:36	07/03/20 23:36	17060-07-0	



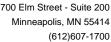
Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Pace Project No.: 10523363								
Sample: Dup 062920	Lab ID: 1052	23363004	Collected: 06/29/2	20 00:00	Received: 06	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	Services -	- Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:30	0 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EDA 8	270E by SIM Prepara	ation Ma	athod: EPA Mod	3510C		
6270E WISSV 14 DIOXAITE BY SIWI	Pace Analytica			ation ivic	tillod. El A Mod.	33100		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.25	1	07/06/20 17:48	07/08/20 17:40	6 123-91-1	
1,4-Dioxane-d8 (S)	34	%.	30-125	1	07/06/20 17:48	07/08/20 17:40	6	
VOA (GC/MS) 8260D	Analytical Meth		260D Preparation Me	ethod: 8	260D			
	Face National	- IVIL. JUIIEL						
Acetone	ND	ug/L	50.0	1	07/03/20 23:56	07/03/20 23:50	6 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/03/20 23:56	07/03/20 23:50	6 107-05-1	
Benzene	ND	ug/L	1.00	1	07/03/20 23:56			
Bromobenzene	ND	ug/L	1.00	1	07/03/20 23:56			
Bromochloromethane	ND	ug/L	1.00	1	07/03/20 23:56			
Bromodichloromethane	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 75-27-4	
Bromoform	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 75-25-2	
Bromomethane	ND	ug/L	5.00	1	07/03/20 23:56	07/03/20 23:50	6 74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 135-98-8	
tert-Butylbenzene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/03/20 23:56	07/03/20 23:50	6 75-00-3	
Chloroform	ND	ug/L	5.00	1	07/03/20 23:56	07/03/20 23:50	6 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/03/20 23:56	07/03/20 23:50	6 74-87-3	CC
2-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 95-49-8	
4-Chlorotoluene	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/03/20 23:56			
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/03/20 23:56	07/03/20 23:50	6 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/03/20 23:56			
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:56			
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:56			
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/03/20 23:56			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/03/20 23:56			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/03/20 23:56			
1,1-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:56			
1,2-Dichloroethane	ND	ug/L	1.00	1	07/03/20 23:56			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:56			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:56			
trans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/03/20 23:56			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/03/20 23:56			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/03/20 23:56			
1,3-Dichloropropane	ND ND	ug/L ug/L	1.00	1	07/03/20 23:56			
cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/03/20 23:56			
• •		-						

## **REPORT OF LABORATORY ANALYSIS**

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: Dup 062920	Lab ID: 105	23363004	Collected: 06	6/29/20	00:00	Received: 06	6/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Li	imit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation	on Meth	nod: 82	60D			
	Pace National	- Mt. Juliet							
trans-1,3-Dichloropropene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	10061-02-6	
2,2-Dichloropropane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	594-20-7	
Ethylbenzene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	98-82-8	
o-Isopropyltoluene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	99-87-6	
2-Butanone (MEK)	ND	ug/L		10.0	1	07/03/20 23:56	07/03/20 23:56	78-93-3	
Methylene Chloride	ND	ug/L		5.00	1	07/03/20 23:56	07/03/20 23:56	75-09-2	LO
I-Methyl-2-pentanone (MIBK)	ND	ug/L		10.0	1	07/03/20 23:56	07/03/20 23:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	1634-04-4	
Naphthalene	ND	ug/L		5.00	1	07/03/20 23:56	07/03/20 23:56	91-20-3	
-Propylbenzene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	103-65-1	
Styrene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	76-13-1	
etrachloroethene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	127-18-4	
Tetrahydrofuran	ND	ug/L		5.00	1	07/03/20 23:56	07/03/20 23:56	109-99-9	
Toluene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	108-88-3	
,2,3-Trichlorobenzene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	87-61-6	
,2,4-Trichlorobenzene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	120-82-1	
,1,1-Trichloroethane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	79-00-5	
Trichloroethene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	79-01-6	L0
Trichlorofluoromethane	ND	ug/L		5.00	1		07/03/20 23:56		
,2,3-Trichloropropane	ND	ug/L		2.50	1	07/03/20 23:56	07/03/20 23:56	96-18-4	
,2,4-Trimethylbenzene	ND	ug/L		1.00	1		07/03/20 23:56		
,3,5-Trimethylbenzene	ND	ug/L		1.00	1	07/03/20 23:56	07/03/20 23:56	108-67-8	
/inyl chloride	ND	ug/L		1.00	1		07/03/20 23:56		
(ylene (Total)	ND	ug/L		3.00	1		07/03/20 23:56		
Surrogates		J							
Toluene-d8 (S)	100	%	80.0-	-120	1	07/03/20 23:56	07/03/20 23:56	2037-26-5	
-Bromofluorobenzene (S)	104	%	77.0-	-126	1	07/03/20 23:56	07/03/20 23:56	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70.0-	-130	1	07/03/20 23:56	07/03/20 23:56	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-37 (38-40)	Lab ID: 1	10523363005	Collected: 06/29	/20 14:50	Received: 0	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical N	/lethod: EPA 60	010D Preparation I	/lethod: E	PA 3010A			
	Pace Analy	tical Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	) 1	07/06/20 05:41	07/06/20 16:3	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical N	/lethod: EPA 83	270E by SIM Prepa	ration Me	athod: EPA Mod	3510C		
5270E WISSV 14 DIOXAITE BY SIW	-	tical Services -		iration ivid	striou. El A iviou.	33100		
1,4-Dioxane (SIM)	2.6	ug/L	0.36	5 1	07/06/20 17:48	07/08/20 18:0	7 123-91-1	
Surrogates							_	
1,4-Dioxane-d8 (S)	40	%.	30-12	5 1	07/06/20 17:48	3 07/08/20 18:0°	7	
VOA (GC/MS) 8260D	Analytical N	/lethod: EPA 82	260D Preparation I	/lethod: 8	260D			
(**************************************	-	nal - Mt. Juliet	·					
Acatana	ND	/1	FO (		07/04/20 00:46	07/04/20 00:1	6 67 64 4	
Acetone Allyl chloride	ND ND	ŭ	50.0 5.00			6 07/04/20 00:1 6 07/04/20 00:1		
Benzene	ND ND	•	1.00			6 07/04/20 00.1 6 07/04/20 00:1		
Bromobenzene	ND ND	ŭ	1.00			6 07/04/20 00.1 6 07/04/20 00:1		
Bromochloromethane	ND ND	•	1.00			6 07/04/20 00:1		
Bromodichloromethane	ND	0	1.00			07/04/20 00:1		
Bromoform	ND	•	1.00			07/04/20 00:1		
Bromomethane	ND	0	5.00			6 07/04/20 00:1		
n-Butylbenzene	ND	ŭ	1.00			07/04/20 00:1		
sec-Butylbenzene	ND	•	1.00			07/04/20 00:1		
ert-Butylbenzene	ND	0	1.00			07/04/20 00:1		
Carbon tetrachloride	ND	•	1.00			6 07/04/20 00:1		
Chlorobenzene	ND	0	1.00			07/04/20 00:1		
Dibromochloromethane	ND	•	1.00			07/04/20 00:1		
Chloroethane	ND	ŭ	5.00			07/04/20 00:1		
Chloroform	ND	0	5.00			07/04/20 00:1		
Chloromethane	ND	•	2.50	) 1	07/04/20 00:16	07/04/20 00:1	6 74-87-3	CC
2-Chlorotoluene	ND	•	1.00	) 1	07/04/20 00:16	07/04/20 00:1	6 95-49-8	
I-Chlorotoluene	ND	•	1.00	) 1	07/04/20 00:16	07/04/20 00:1	6 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	) 1	07/04/20 00:16	07/04/20 00:1	6 96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/04/20 00:16	07/04/20 00:1	6 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/04/20 00:16	07/04/20 00:1	6 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:16	07/04/20 00:1	6 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:16	07/04/20 00:1	6 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:16	07/04/20 00:1	6 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	) 1	07/04/20 00:16	07/04/20 00:1	6 75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	) 1		07/04/20 00:1		
,1-Dichloroethane	ND	ug/L	1.00	) 1		07/04/20 00:1		
1,2-Dichloroethane	ND	ŭ	1.00			07/04/20 00:1		
,1-Dichloroethene	ND	0	1.00			07/04/20 00:1		
cis-1,2-Dichloroethene	ND	ŭ	1.00			07/04/20 00:1		
rans-1,2-Dichloroethene	ND	ŭ	1.00			07/04/20 00:1		
1,2-Dichloropropane	ND	ŭ	1.00			07/04/20 00:1		
1,1-Dichloropropene	ND	ŭ	1.00			07/04/20 00:1		
1,3-Dichloropropane	ND	•	1.00			07/04/20 00:1		
cis-1,3-Dichloropropene	ND	ug/L	1.00	) 1	07/04/20 00:16	07/04/20 00:1	6 10061-01-5	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-37 (38-40)	Lab ID: 105	23363005	Collected: 06	29/20 14:	50 Received:	06/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Lir	nit DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparatio	n Method:	8260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 594-20-7	
Ethylbenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 98-82-8	
o-Isopropyltoluene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 99-87-6	
2-Butanone (MEK)	ND	ug/L	1	0.0 1	07/04/20 00:	16 07/04/20 00:1	6 78-93-3	
Methylene Chloride	ND	ug/L	5	.00 1		16 07/04/20 00:1		L0
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1	0.0 1	07/04/20 00:	16 07/04/20 00:1	6 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 1634-04-4	
laphthalene	ND	ug/L	5	.00 1	07/04/20 00:	16 07/04/20 00:1	6 91-20-3	
-Propylbenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 103-65-1	
Styrene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 76-13-1	
etrachloroethene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 127-18-4	
Tetrahydrofuran	ND	ug/L	5	.00 1	07/04/20 00:	16 07/04/20 00:1	6 109-99-9	
oluene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 108-88-3	
,2,3-Trichlorobenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 87-61-6	
,2,4-Trichlorobenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 120-82-1	
,1,1-Trichloroethane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 71-55-6	
,1,2-Trichloroethane	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 79-00-5	
richloroethene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 79-01-6	L0
richlorofluoromethane	ND	ug/L	5	.00 1	07/04/20 00:	16 07/04/20 00:1	6 75-69-4	
,2,3-Trichloropropane	ND	ug/L	2	.50 1	07/04/20 00:	16 07/04/20 00:1	6 96-18-4	
,2,4-Trimethylbenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1	.00 1	07/04/20 00:	16 07/04/20 00:1	6 108-67-8	
/inyl chloride	ND	ug/L	1	.00 1		16 07/04/20 00:1		
(ylene (Total)	ND	ug/L		.00 1		16 07/04/20 00:1		
Surrogates		J						
Toluene-d8 (S)	100	%	80.0-	20 1	07/04/20 00:	16 07/04/20 00:1	6 2037-26-5	
-Bromofluorobenzene (S)	105	%	77.0-1	26 1	07/04/20 00:	16 07/04/20 00:1	6 460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70.0-1	30 1	07/04/20 00:	16 07/04/20 00:1	6 17060-07-0	



#### ANALYTICAL RESULTS

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-38 (3-4) Lab ID: 10523363006 Collected: 06/29/20 16:50 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet NΠ 25 06/29/20 16:50 07/09/20 16:49 67-64-1 Acetone mg/kg 1.56 Allyl chloride ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 107-05-1 Benzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 71-43-2 ND 0.0312 06/29/20 16:50 07/09/20 16:49 108-86-1 Bromobenzene mg/kg 25 0.0312 Bromochloromethane ND mg/kg 25 06/29/20 16:50 07/09/20 16:49 74-97-5 Bromodichloromethane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 75-27-4 Bromoform ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 75-25-2 mg/kg **Bromomethane** NΠ 0.156 25 06/29/20 16:50 07/09/20 16:49 74-83-9 mg/kg ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 98-06-6 Carbon tetrachloride ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 56-23-5 Chlorobenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 108-90-7 Dibromochloromethane ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 124-48-1 mg/kg Chloroethane ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 75-00-3 Chloroform ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 67-66-3 Chloromethane ND mg/kg 0.0780 25 06/29/20 16:50 07/09/20 16:49 74-87-3 2-Chlorotoluene ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 96-12-8 Dibromomethane ND 25 06/29/20 16:50 07/09/20 16:49 74-95-3 mg/kg 0.0312 1,2-Dichlorobenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 106-46-7 Dichlorodifluoromethane ND 25 mg/kg 0.156 06/29/20 16:50 07/09/20 16:49 75-71-8 Dichlorofluoromethane ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 75-43-4 1,1-Dichloroethane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 75-34-3 ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 107-06-2 1.2-Dichloroethane mg/kg ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0312 25 06/29/20 16:50 07/09/20 16:49 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/29/20 16:50 07/09/20 16:49 156-60-5 0.0312 trans-1,2-Dichloroethene mg/kg ND 25 06/29/20 16:50 07/09/20 16:49 78-87-5 1,2-Dichloropropane mg/kg 0.0312 1,3-Dichloropropane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 142-28-9 2,2-Dichloropropane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 594-20-7 1,1-Dichloropropene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 563-58-6 ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 10061-02-6 ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 100-41-4 Ethylbenzene Diethyl ether (Ethyl ether) ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 98-82-8 ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.312 25 06/29/20 16:50 07/09/20 16:49 78-93-3 Methylene Chloride ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 75-09-2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

**Total Solids** 

Date: 07/13/2020 04:36 PM

Sample: GP-38 (3-4) Lab ID: 10523363006 Collected: 06/29/20 16:50 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 25 06/29/20 16:50 07/09/20 16:49 108-10-1 mg/kg 0.312 Methyl-tert-butyl ether ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 1634-04-4 Naphthalene ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 91-20-3 ND 0.0312 06/29/20 16:50 07/09/20 16:49 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0312 Styrene mg/kg 25 06/29/20 16:50 07/09/20 16:49 100-42-5 1,1,1,2-Tetrachloroethane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0312 25 06/29/20 16:50 07/09/20 16:49 79-34-5 mg/kg ND 0.0312 Tetrachloroethene 25 06/29/20 16:50 07/09/20 16:49 127-18-4 mg/kg ND 0.156 25 06/29/20 16:50 07/09/20 16:49 109-99-9 Tetrahydrofuran mg/kg Toluene ND 0.156 25 06/29/20 16:50 07/09/20 16:49 108-88-3 mg/kg 0.0312 1,2,3-Trichlorobenzene ND mg/kg 25 06/29/20 16:50 07/09/20 16:49 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 71-55-6 0.0312 1,1,2-Trichloroethane ND mg/kg 25 06/29/20 16:50 07/09/20 16:49 79-00-5 Trichloroethene ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 79-01-6 Trichlorofluoromethane ND mg/kg 0.156 25 06/29/20 16:50 07/09/20 16:49 75-69-4 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 76-13-1 ND 1,2,3-Trichloropropane mg/kg 0.0780 25 06/29/20 16:50 07/09/20 16:49 96-18-4 ND Vinyl chloride mg/kg 0.0312 25 06/29/20 16:50 07/09/20 16:49 75-01-4 ND 25 Xylene (Total) mg/kg 0.0936 06/29/20 16:50 07/09/20 16:49 1330-20-7 1,4-Dioxane (p-Dioxane) ND mg/kg 3.12 25 06/29/20 16:50 07/09/20 16:49 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 104 % 70.0-130 25 06/29/20 16:50 07/09/20 16:49 17060-07-0 94.5 75.0-131 Toluene-d8 (S) % 25 06/29/20 16:50 07/09/20 16:49 2037-26-5 96.9 % 67.0-138 25 06/29/20 16:50 07/09/20 16:49 460-00-4 4-Bromofluorobenzene (S) Analytical Method: SM 2540G Preparation Method: SM 2540 G **Total Solids 2540 G-2011** Pace National - Mt. Juliet

#### **REPORT OF LABORATORY ANALYSIS**

07/08/20 23:14 07/08/20 23:24

89.5

%



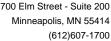
## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: Water Trip Blanks	Lab ID: 105	23363007	Collected: 06/2	9/20 00:00	Received: 0	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limi	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation	Method: 8	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.	0 1	07/03/20 19:51	07/03/20 19:5	1 67-64-1	
Allyl chloride	ND	ug/L	5.0		07/03/20 19:51			
Benzene	ND	ug/L	1.0		07/03/20 19:51			
Bromobenzene	ND	ug/L	1.0			07/03/20 19:5		
Bromochloromethane	ND	ug/L	1.0			07/03/20 19:5		
Bromodichloromethane	ND	ug/L	1.0		07/03/20 19:51			
Bromoform	ND	ug/L	1.0			07/03/20 19:5		
Bromomethane	ND	ug/L	5.0			07/03/20 19:5		
n-Butylbenzene	ND	ug/L	1.0			07/03/20 19:5		
sec-Butylbenzene	ND	ug/L	1.0			07/03/20 19:5		
tert-Butylbenzene	ND	ug/L	1.0			07/03/20 19:5		
Carbon tetrachloride	ND	ug/L	1.0			07/03/20 19:5		
Chlorobenzene	ND	ug/L	1.0			07/03/20 19:5		
Dibromochloromethane	ND	ug/L	1.0			07/03/20 19:5		
Chloroethane	ND	ug/L	5.0			07/03/20 19:5		
Chloroform	ND	ug/L	5.0		07/03/20 19:51			
Chloromethane	ND	ug/L	2.5			07/03/20 19:5		СС
2-Chlorotoluene	ND	ug/L	1.0			07/03/20 19:5		00
4-Chlorotoluene	ND	ug/L	1.0			07/03/20 19:5		
1,2-Dibromo-3-chloropropane	ND ND	ug/L	5.0			07/03/20 19:5		
1,2-Dibromoethane (EDB)	ND ND	ug/L ug/L	1.0			07/03/20 19:5		
Dibromomethane	ND ND	ug/L ug/L	1.0			07/03/20 19:5		
1,2-Dichlorobenzene	ND	ug/L	1.0			07/03/20 19:5		
1,3-Dichlorobenzene	ND ND	ug/L ug/L	1.0			07/03/20 19:5		
1,4-Dichlorobenzene	ND ND	ug/L ug/L	1.0			07/03/20 19:5		
Dichlorodifluoromethane	ND ND	ug/L ug/L	5.0		07/03/20 19:51			
Dichlorofluoromethane	ND ND	ug/L	5.0			07/03/20 19:5		
1,1-Dichloroethane	ND ND	ug/L	1.0			07/03/20 19:5		
1,2-Dichloroethane	ND ND	ug/L ug/L	1.0			07/03/20 19:5		
1,1-Dichloroethene	ND ND	ug/L ug/L	1.0			07/03/20 19:5 07/03/20 19:5		
	ND ND	•	1.0			07/03/20 19:5 07/03/20 19:5		
cis-1,2-Dichloroethene rans-1,2-Dichloroethene	ND ND	ug/L	1.0			07/03/20 19:5 07/03/20 19:5		
1,2-Dichloropropane	ND ND	ug/L ug/L	1.0		07/03/20 19:51			
		•				07/03/20 19.5 07/03/20 19:5		
1,1-Dichloropropene	ND	ug/L	1.0					
I,3-Dichloropropane	ND	ug/L	1.0			07/03/20 19:5		
cis-1,3-Dichloropropene	ND	ug/L	1.0			07/03/20 19:5		
rans-1,3-Dichloropropene	ND	ug/L	1.0			07/03/20 19:5		
2,2-Dichloropropane	ND	ug/L	1.0			07/03/20 19:5		
Ethylbenzene	ND	ug/L	1.0			07/03/20 19:5		1.0
Diethyl ether (Ethyl ether)	ND	ug/L	1.0			07/03/20 19:5		L0
Hexachloro-1,3-butadiene	ND	ug/L	1.0			07/03/20 19:5		
sopropylbenzene (Cumene)	ND	ug/L	1.0			07/03/20 19:5		
o-Isopropyltoluene	ND	ug/L	1.0			07/03/20 19:5		
2-Butanone (MEK)	ND	ug/L	10.			07/03/20 19:5		
Methylene Chloride	ND	ug/L	5.0			07/03/20 19:5		L0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.	0 1	07/03/20 19:51	07/03/20 19:5	1 108-10-1	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: Water Trip Blanks	Lab ID: 1052	23363007	Collected: 06/29/2	20 00:00	Received: 06	/30/20 16:00 N	Natrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 8	260D			
	Pace National	- Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/03/20 19:51	07/03/20 19:51	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	103-65-1	
Styrene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/03/20 19:51	07/03/20 19:51	109-99-9	
Toluene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	79-01-6	L0
Trichlorofluoromethane	ND	ug/L	5.00	1	07/03/20 19:51	07/03/20 19:51	75-69-4	
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/03/20 19:51	07/03/20 19:51	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/03/20 19:51	07/03/20 19:51	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/03/20 19:51	07/03/20 19:51	1330-20-7	
Surrogates		=						
Toluene-d8 (S)	100	%	80.0-120	1	07/03/20 19:51	07/03/20 19:51	2037-26-5	
4-Bromofluorobenzene (S)	104	%	77.0-126	1	07/03/20 19:51	07/03/20 19:51	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/03/20 19:51	07/03/20 19:51	17060-07-0	



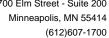
#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: Soil Trip Blanks Lab ID: 10523363008 Collected: 06/29/20 00:00 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet NΠ 25 06/29/20 00:00 07/09/20 17:11 67-64-1 Acetone mg/kg 1.25 Allyl chloride ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 107-05-1 Benzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 71-43-2 ND 0.0250 06/29/20 00:00 07/09/20 17:11 108-86-1 Bromobenzene mg/kg 25 0.0250 06/29/20 00:00 07/09/20 17:11 Bromochloromethane ND mg/kg 25 74-97-5 Bromodichloromethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 75-27-4 Bromoform ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 75-25-2 mg/kg **Bromomethane** NΠ 0.125 25 06/29/20 00:00 07/09/20 17:11 74-83-9 mg/kg ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 98-06-6 Carbon tetrachloride ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 56-23-5 Chlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 108-90-7 Dibromochloromethane ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 124-48-1 mg/kg Chloroethane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 75-00-3 Chloroform ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 67-66-3 Chloromethane ND mg/kg 0.0625 25 06/29/20 00:00 07/09/20 17:11 74-87-3 2-Chlorotoluene ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 96-12-8 06/29/20 00:00 07/09/20 17:11 ND 25 74-95-3 Dibromomethane mg/kg 0.0250 1,2-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 106-46-7 Dichlorodifluoromethane ND 25 06/29/20 00:00 07/09/20 17:11 mg/kg 0.125 75-71-8 Dichlorofluoromethane ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 75-43-4 1,1-Dichloroethane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 75-34-3 ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 107-06-2 1.2-Dichloroethane mg/kg ND 0.0250 25 75-35-4 1.1-Dichloroethene mg/kg 06/29/20 00:00 07/09/20 17:11 NΠ 0.0250 25 06/29/20 00:00 07/09/20 17:11 156-59-2 cis-1,2-Dichloroethene mg/kg 156-60-5 ND 25 0.0250 06/29/20 00:00 07/09/20 17:11 trans-1,2-Dichloroethene mg/kg ND 25 06/29/20 00:00 07/09/20 17:11 78-87-5 1,2-Dichloropropane mg/kg 0.0250 1,3-Dichloropropane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 142-28-9 2,2-Dichloropropane ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 594-20-7 1,1-Dichloropropene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 563-58-6 ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 10061-02-6 ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0250 25 06/29/20 00:00 07/09/20 17:11 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0250 25 06/29/20 00:00 07/09/20 17:11 98-82-8 ND 0.0250 25 99-87-6 p-Isopropyltoluene mg/kg 06/29/20 00:00 07/09/20 17:11 2-Butanone (MEK) ND mg/kg 0.250 25 06/29/20 00:00 07/09/20 17:11 78-93-3 Methylene Chloride ND mg/kg 0.125 25 06/29/20 00:00 07/09/20 17:11 75-09-2





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: Soil Trip Blanks	Lab ID: 105	23363008	Collected: 06/29/2	20 00:00	Received: 06	/30/20 16:00 N	Matrix: Solid	
Results reported on a "dry weigh	t" basis and are ad	justed for p	ercent moisture, sa	mple s	ize and any dilu	ions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Metl	hod: EPA 82	60D Preparation Me	ethod: 5	035A			
	Pace National	- Mt. Juliet						
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.250	25	06/29/20 00:00	07/09/20 17:11	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	1634-04-4	
Naphthalene	ND	mg/kg	0.125	25	06/29/20 00:00	07/09/20 17:11	91-20-3	
n-Propylbenzene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	103-65-1	
Styrene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	79-34-5	
Tetrachloroethene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.125	25	06/29/20 00:00	07/09/20 17:11	109-99-9	
Toluene	ND	mg/kg	0.125	25	06/29/20 00:00	07/09/20 17:11	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	79-00-5	
Trichloroethene	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.125	25	06/29/20 00:00	07/09/20 17:11	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.0625	25	06/29/20 00:00	07/09/20 17:11	96-18-4	
√inyl chloride	ND	mg/kg	0.0250	25	06/29/20 00:00	07/09/20 17:11	75-01-4	
(Ylene (Total)	ND	mg/kg	0.0750	25	06/29/20 00:00	07/09/20 17:11	1330-20-7	
1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.50	25	06/29/20 00:00	07/09/20 17:11	123-91-1	
Surrogates		_						
1,2-Dichloroethane-d4 (S)	106	%	70.0-130	25	06/29/20 00:00			
Гoluene-d8 (S)	94.7	%	75.0-131	25	06/29/20 00:00	07/09/20 17:11	2037-26-5	
4-Bromofluorobenzene (S)	101	%	67.0-138	25	06/29/20 00:00	07/09/20 17:11	460-00-4	



#### ANALYTICAL RESULTS

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Methylene Chloride

Date: 07/13/2020 04:36 PM

Sample: GP-39 (3-4) Lab ID: 10523363009 Collected: 06/29/20 17:35 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 06/29/20 17:35 07/09/20 17:32 67-64-1 Acetone mg/kg 1.36 Allyl chloride ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 107-05-1 Benzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 71-43-2 ND 0.0272 06/29/20 17:35 07/09/20 17:32 108-86-1 Bromobenzene mg/kg 25 0.0272 06/29/20 17:35 07/09/20 17:32 Bromochloromethane ND mg/kg 25 74-97-5 Bromodichloromethane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 75-27-4 Bromoform ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 75-25-2 mg/kg **Bromomethane** NΠ 0.136 25 06/29/20 17:35 07/09/20 17:32 74-83-9 mg/kg ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 98-06-6 Carbon tetrachloride ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 56-23-5 Chlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 108-90-7 Dibromochloromethane ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 124-48-1 mg/kg Chloroethane ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 75-00-3 0.136 Chloroform ND mg/kg 25 06/29/20 17:35 07/09/20 17:32 67-66-3 Chloromethane ND mg/kg 0.0679 25 06/29/20 17:35 07/09/20 17:32 74-87-3 2-Chlorotoluene ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 96-12-8 ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 74-95-3 Dibromomethane mg/kg 1,2-Dichlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 106-46-7 Dichlorodifluoromethane ND 25 06/29/20 17:35 07/09/20 17:32 mg/kg 0.136 75-71-8 Dichlorofluoromethane ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 75-43-4 1,1-Dichloroethane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 75-34-3 ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 107-06-2 1.2-Dichloroethane mg/kg ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0272 25 06/29/20 17:35 07/09/20 17:32 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/29/20 17:35 07/09/20 17:32 156-60-5 0.0272 trans-1,2-Dichloroethene mg/kg ND 25 06/29/20 17:35 07/09/20 17:32 78-87-5 1,2-Dichloropropane mg/kg 0.0272 1,3-Dichloropropane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 142-28-9 2,2-Dichloropropane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 594-20-7 1,1-Dichloropropene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 563-58-6 ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 10061-02-6 ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 98-82-8 ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.272 25 06/29/20 17:35 07/09/20 17:32 78-93-3

#### REPORT OF LABORATORY ANALYSIS

0.136

25

06/29/20 17:35 07/09/20 17:32 75-09-2

ND

mg/kg



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

**Total Solids** 

Date: 07/13/2020 04:36 PM

Collected: 06/29/20 17:35 Received: 06/30/20 16:00 Sample: GP-39 (3-4) Lab ID: 10523363009 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.272 25 06/29/20 17:35 07/09/20 17:32 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 1634-04-4 Naphthalene ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 91-20-3 ND 0.0272 06/29/20 17:35 07/09/20 17:32 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0272 06/29/20 17:35 07/09/20 17:32 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0272 25 06/29/20 17:35 07/09/20 17:32 79-34-5 mg/kg ND Tetrachloroethene 0.0272 25 06/29/20 17:35 07/09/20 17:32 127-18-4 mg/kg ND 0.136 25 06/29/20 17:35 07/09/20 17:32 109-99-9 Tetrahydrofuran mg/kg Toluene ND 0.136 25 06/29/20 17:35 07/09/20 17:32 108-88-3 mg/kg 1,2,3-Trichlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 71-55-6 0.0272 1,1,2-Trichloroethane ND mg/kg 25 06/29/20 17:35 07/09/20 17:32 79-00-5 Trichloroethene ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 79-01-6 Trichlorofluoromethane ND mg/kg 0.136 25 06/29/20 17:35 07/09/20 17:32 75-69-4 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 76-13-1 ND 1,2,3-Trichloropropane mg/kg 0.0679 25 06/29/20 17:35 07/09/20 17:32 96-18-4 ND Vinyl chloride mg/kg 0.0272 25 06/29/20 17:35 07/09/20 17:32 75-01-4 ND 25 Xylene (Total) mg/kg 0.0815 06/29/20 17:35 07/09/20 17:32 1330-20-7 1,4-Dioxane (p-Dioxane) ND mg/kg 2.72 25 06/29/20 17:35 07/09/20 17:32 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 105 % 70.0-130 25 06/29/20 17:35 07/09/20 17:32 17060-07-0 95.4 75.0-131 Toluene-d8 (S) % 25 06/29/20 17:35 07/09/20 17:32 2037-26-5 102 % 67.0-138 25 06/29/20 17:35 07/09/20 17:32 460-00-4 4-Bromofluorobenzene (S) Analytical Method: SM 2540G Preparation Method: SM 2540 G **Total Solids 2540 G-2011** Pace National - Mt. Juliet

#### **REPORT OF LABORATORY ANALYSIS**

07/08/20 23:14 07/08/20 23:24

92.0

%



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

2-Butanone (MEK)

Methylene Chloride

Date: 07/13/2020 04:36 PM

Sample: GP-40 (3-4) Lab ID: 10523363010 Collected: 06/30/20 07:40 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 06/30/20 07:40 07/09/20 17:54 67-64-1 Acetone mg/kg 1.32 Allyl chloride ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 107-05-1 Benzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 71-43-2 ND 0.0264 06/30/20 07:40 07/09/20 17:54 108-86-1 Bromobenzene mg/kg 25 0.0264 06/30/20 07:40 07/09/20 17:54 74-97-5 Bromochloromethane ND mg/kg 25 Bromodichloromethane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 75-27-4 Bromoform ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 75-25-2 mg/kg **Bromomethane** NΠ 0.132 25 06/30/20 07:40 07/09/20 17:54 74-83-9 mg/kg ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 98-06-6 Carbon tetrachloride ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 56-23-5 Chlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 108-90-7 Dibromochloromethane ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 124-48-1 mg/kg Chloroethane ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 75-00-3 Chloroform ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 67-66-3 Chloromethane ND mg/kg 0.0660 25 06/30/20 07:40 07/09/20 17:54 74-87-3 2-Chlorotoluene ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 95-49-8 mg/kg 06/30/20 07:40 07/09/20 17:54 106-43-4 4-Chlorotoluene ND mg/kg 0.0264 25 1,2-Dibromoethane (EDB) ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 96-12-8 ND 25 06/30/20 07:40 07/09/20 17:54 74-95-3 Dibromomethane mg/kg 0.0264 1,2-Dichlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 106-46-7 Dichlorodifluoromethane ND 25 06/30/20 07:40 07/09/20 17:54 mg/kg 0.132 75-71-8 Dichlorofluoromethane ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 75-43-4 1,1-Dichloroethane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 75-34-3 ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 107-06-2 1.2-Dichloroethane mg/kg ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0264 25 06/30/20 07:40 07/09/20 17:54 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/30/20 07:40 07/09/20 17:54 156-60-5 0.0264 trans-1,2-Dichloroethene mg/kg ND 25 06/30/20 07:40 07/09/20 17:54 78-87-5 1,2-Dichloropropane mg/kg 0.0264 1,3-Dichloropropane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 142-28-9 2,2-Dichloropropane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 594-20-7 1,1-Dichloropropene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 563-58-6 ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 10061-02-6 ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 60-29-7 06/30/20 07:40 07/09/20 17:54 87-68-3 Hexachloro-1,3-butadiene ND mg/kg 0.0264 25 ND Isopropylbenzene (Cumene) mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 98-82-8 ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 99-87-6 p-Isopropyltoluene mg/kg

#### **REPORT OF LABORATORY ANALYSIS**

0.264

0.132

25

25

06/30/20 07:40 07/09/20 17:54 78-93-3

06/30/20 07:40 07/09/20 17:54 75-09-2

ND

ND

mg/kg

mg/kg



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

**Total Solids** 

Date: 07/13/2020 04:36 PM

Lab ID: 10523363010 Collected: 06/30/20 07:40 Received: 06/30/20 16:00 Sample: GP-40 (3-4) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.264 25 06/30/20 07:40 07/09/20 17:54 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 1634-04-4 Naphthalene ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 91-20-3 ND 0.0264 06/30/20 07:40 07/09/20 17:54 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0264 06/30/20 07:40 07/09/20 17:54 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0264 25 06/30/20 07:40 07/09/20 17:54 79-34-5 mg/kg ND 06/30/20 07:40 07/09/20 17:54 127-18-4 Tetrachloroethene 0.0264 25 mg/kg ND 0.132 25 06/30/20 07:40 07/09/20 17:54 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 71-55-6 1,1,2-Trichloroethane ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 79-00-5 Trichloroethene ND mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 79-01-6 Trichlorofluoromethane ND mg/kg 0.132 25 06/30/20 07:40 07/09/20 17:54 75-69-4 06/30/20 07:40 07/09/20 17:54 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0264 25 ND 06/30/20 07:40 07/09/20 17:54 96-18-4 1,2,3-Trichloropropane mg/kg 0.0660 25 ND Vinyl chloride mg/kg 0.0264 25 06/30/20 07:40 07/09/20 17:54 75-01-4 06/30/20 07:40 07/09/20 17:54 1330-20-7 ND 0.0792 25 Xylene (Total) mg/kg 1,4-Dioxane (p-Dioxane) ND mg/kg 2.64 25 06/30/20 07:40 07/09/20 17:54 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 105 % 70.0-130 25 06/30/20 07:40 07/09/20 17:54 17060-07-0 92.9 75.0-131 06/30/20 07:40 07/09/20 17:54 2037-26-5 Toluene-d8 (S) % 25 98.2 % 67.0-138 25 06/30/20 07:40 07/09/20 17:54 460-00-4 4-Bromofluorobenzene (S) Total Solids 2540 G-2011 Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet

#### **REPORT OF LABORATORY ANALYSIS**

07/08/20 23:14 07/08/20 23:24

94.7

%



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-41 (3-4) Lab ID: 10523363011 Collected: 06/30/20 08:30 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet NΠ 25 06/30/20 08:30 07/09/20 18:15 67-64-1 Acetone mg/kg 1.37 Allyl chloride ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 107-05-1 Benzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 71-43-2 ND 0.0275 06/30/20 08:30 07/09/20 18:15 108-86-1 Bromobenzene mg/kg 25 0.0275 06/30/20 08:30 07/09/20 18:15 74-97-5 Bromochloromethane ND mg/kg 25 Bromodichloromethane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 75-27-4 Bromoform ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 75-25-2 mg/kg **Bromomethane** NΠ 0.137 25 06/30/20 08:30 07/09/20 18:15 74-83-9 mg/kg ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 98-06-6 Carbon tetrachloride ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 56-23-5 Chlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 108-90-7 Dibromochloromethane ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 124-48-1 mg/kg Chloroethane ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 75-00-3 Chloroform ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 67-66-3 Chloromethane ND mg/kg 0.0687 25 06/30/20 08:30 07/09/20 18:15 74-87-3 2-Chlorotoluene ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 95-49-8 mg/kg 06/30/20 08:30 07/09/20 18:15 106-43-4 4-Chlorotoluene ND mg/kg 0.0275 25 ND 1,2-Dibromoethane (EDB) mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 96-12-8 Dibromomethane ND 25 06/30/20 08:30 07/09/20 18:15 74-95-3 mg/kg 0.0275 1,2-Dichlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 106-46-7 Dichlorodifluoromethane ND 25 06/30/20 08:30 07/09/20 18:15 mg/kg 0.137 75-71-8 Dichlorofluoromethane ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 75-43-4 1,1-Dichloroethane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 75-34-3 ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 107-06-2 1.2-Dichloroethane mg/kg ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0275 25 06/30/20 08:30 07/09/20 18:15 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/30/20 08:30 07/09/20 18:15 156-60-5 0.0275 trans-1,2-Dichloroethene mg/kg ND 25 1,2-Dichloropropane mg/kg 0.0275 06/30/20 08:30 07/09/20 18:15 78-87-5 1,3-Dichloropropane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 142-28-9 2,2-Dichloropropane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 594-20-7 1,1-Dichloropropene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 563-58-6 ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 10061-02-6 ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 98-82-8 ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.275 25 06/30/20 08:30 07/09/20 18:15 78-93-3 Methylene Chloride ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 75-09-2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Lab ID: 10523363011 Collected: 06/30/20 08:30 Received: 06/30/20 16:00 Sample: GP-41 (3-4) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 25 06/30/20 08:30 07/09/20 18:15 108-10-1 mg/kg 0.275 Methyl-tert-butyl ether ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 1634-04-4 Naphthalene ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 91-20-3 ND 0.0275 06/30/20 08:30 07/09/20 18:15 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0275 06/30/20 08:30 07/09/20 18:15 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0275 25 06/30/20 08:30 07/09/20 18:15 79-34-5 mg/kg ND Tetrachloroethene 0.0275 25 06/30/20 08:30 07/09/20 18:15 127-18-4 mg/kg ND 0.137 25 06/30/20 08:30 07/09/20 18:15 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.137 25 06/30/20 08:30 07/09/20 18:15 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 71-55-6 06/30/20 08:30 07/09/20 18:15 79-00-5 1,1,2-Trichloroethane ND mg/kg 0.0275 25 Trichloroethene ND mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 79-01-6 Trichlorofluoromethane ND mg/kg 25 06/30/20 08:30 07/09/20 18:15 75-69-4 0.137 0.0275 06/30/20 08:30 07/09/20 18:15 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 25 ND 1,2,3-Trichloropropane mg/kg 0.0687 25 06/30/20 08:30 07/09/20 18:15 96-18-4 ND Vinyl chloride mg/kg 0.0275 25 06/30/20 08:30 07/09/20 18:15 75-01-4 ND 25 Xylene (Total) mg/kg 0.0824 06/30/20 08:30 07/09/20 18:15 1330-20-7 1,4-Dioxane (p-Dioxane) ND mg/kg 2.75 25 06/30/20 08:30 07/09/20 18:15 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 100 % 70.0-130 25 06/30/20 08:30 07/09/20 18:15 17060-07-0 93.3 75.0-131 Toluene-d8 (S) % 25 06/30/20 08:30 07/09/20 18:15 2037-26-5 97.2 % 67.0-138 25 06/30/20 08:30 07/09/20 18:15 460-00-4 4-Bromofluorobenzene (S) Total Solids 2540 G-2011 Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet 91.0 % **Total Solids** 07/08/20 23:14 07/08/20 23:24



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-42 (3-4) Lab ID: 10523363012 Collected: 06/30/20 09:00 Received: 06/30/20 16:00 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 06/30/20 09:00 07/09/20 18:37 67-64-1 Acetone mg/kg 1.39 Allyl chloride ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 107-05-1 Benzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 71-43-2 ND 0.0278 06/30/20 09:00 07/09/20 18:37 Bromobenzene mg/kg 25 108-86-1 0.0278 Bromochloromethane ND mg/kg 25 06/30/20 09:00 07/09/20 18:37 74-97-5 Bromodichloromethane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 75-27-4 Bromoform ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 75-25-2 mg/kg **Bromomethane** NΠ 0.139 25 06/30/20 09:00 07/09/20 18:37 74-83-9 mg/kg ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 98-06-6 Carbon tetrachloride ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 56-23-5 Chlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 108-90-7 Dibromochloromethane ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 124-48-1 mg/kg Chloroethane ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 75-00-3 Chloroform ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 67-66-3 Chloromethane ND mg/kg 0.0694 25 06/30/20 09:00 07/09/20 18:37 74-87-3 2-Chlorotoluene ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 95-49-8 mg/kg 06/30/20 09:00 07/09/20 18:37 106-43-4 4-Chlorotoluene ND mg/kg 0.0278 25 1,2-Dibromoethane (EDB) ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 96-12-8 0.0278 06/30/20 09:00 07/09/20 18:37 74-95-3 ND 25 Dibromomethane mg/kg 1,2-Dichlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 106-46-7 Dichlorodifluoromethane ND 25 06/30/20 09:00 07/09/20 18:37 mg/kg 0.139 75-71-8 Dichlorofluoromethane ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 75-43-4 1,1-Dichloroethane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 75-34-3 ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 107-06-2 1.2-Dichloroethane mg/kg ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0278 25 06/30/20 09:00 07/09/20 18:37 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 06/30/20 09:00 07/09/20 18:37 156-60-5 0.0278 trans-1,2-Dichloroethene mg/kg ND 25 06/30/20 09:00 07/09/20 18:37 78-87-5 1,2-Dichloropropane mg/kg 0.0278 1,3-Dichloropropane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 142-28-9 2,2-Dichloropropane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 594-20-7 1,1-Dichloropropene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 563-58-6 ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 10061-02-6 ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 100-41-4 Ethylbenzene Diethyl ether (Ethyl ether) ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 98-82-8 ND 0.0278 25 99-87-6 p-Isopropyltoluene mg/kg 06/30/20 09:00 07/09/20 18:37 2-Butanone (MEK) ND mg/kg 0.278 25 06/30/20 09:00 07/09/20 18:37 78-93-3 Methylene Chloride ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 75-09-2



#### ANALYTICAL RESULTS

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

**Total Solids** 

Date: 07/13/2020 04:36 PM

Lab ID: 10523363012 Collected: 06/30/20 09:00 Received: 06/30/20 16:00 Sample: GP-42 (3-4) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.278 25 06/30/20 09:00 07/09/20 18:37 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 1634-04-4 Naphthalene ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 91-20-3 ND 0.0278 06/30/20 09:00 07/09/20 18:37 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0278 06/30/20 09:00 07/09/20 18:37 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0278 25 06/30/20 09:00 07/09/20 18:37 79-34-5 mg/kg ND Tetrachloroethene 0.0278 25 06/30/20 09:00 07/09/20 18:37 127-18-4 mg/kg ND 0.139 25 06/30/20 09:00 07/09/20 18:37 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 71-55-6 1,1,2-Trichloroethane ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 79-00-5 Trichloroethene ND mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 79-01-6 Trichlorofluoromethane ND mg/kg 0.139 25 06/30/20 09:00 07/09/20 18:37 75-69-4 0.0278 06/30/20 09:00 07/09/20 18:37 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 25 ND 1,2,3-Trichloropropane mg/kg 0.0694 25 06/30/20 09:00 07/09/20 18:37 96-18-4 ND Vinyl chloride mg/kg 0.0278 25 06/30/20 09:00 07/09/20 18:37 75-01-4 ND 25 Xylene (Total) mg/kg 0.0833 06/30/20 09:00 07/09/20 18:37 1330-20-7 1,4-Dioxane (p-Dioxane) ND mg/kg 2.78 25 06/30/20 09:00 07/09/20 18:37 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 104 % 70.0-130 25 06/30/20 09:00 07/09/20 18:37 17060-07-0 75.0-131 Toluene-d8 (S) 96.5 % 25 06/30/20 09:00 07/09/20 18:37 2037-26-5 100 % 67.0-138 25 06/30/20 09:00 07/09/20 18:37 460-00-4 4-Bromofluorobenzene (S) Analytical Method: SM 2540G Preparation Method: SM 2540 G **Total Solids 2540 G-2011** Pace National - Mt. Juliet

#### REPORT OF LABORATORY ANALYSIS

07/08/20 23:14 07/08/20 23:24

90.1

%



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (6-9)	Lab ID:	10523363013	Collected: 06/	30/20 10:	30 Received:	06/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Lin	it DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	)10D Preparation	Method:	EPA 3010A			
	Pace Analy	ytical Services -	Minneapolis					
Lead, Dissolved	NE	ug/L	10	).0 1	07/06/20 05:	41 07/06/20 16:3	6 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical	Method: EPA 82	270E by SIM Pre	paration N	Method: EPA Mo	d. 3510C		
-	Pace Analy	ytical Services -	Minneapolis					
1,4-Dioxane (SIM)	NE	ug/L	0.	29 1	07/06/20 17:	48 07/08/20 18:2	8 123-91-1	
Surrogates								
1,4-Dioxane-d8 (S)	32	2 %.	30-1	25 1	07/06/20 17:	:48 07/08/20 18:2	8	
/OA (GC/MS) 8260D	Analytical	Method: EPA 82	260D Preparation	Method:	8260D			
	Pace Natio	onal - Mt. Juliet						
Acetone	NE	) ug/L	50	).0 1	07/04/20 00:	:37 07/04/20 00:3	7 67-64-1	
Allyl chloride	NE	0		00 1		37 07/04/20 00:3		
Benzene	NE	0		00 1		37 07/04/20 00:3		
Bromobenzene	NE	J		00 1		37 07/04/20 00:3		
Bromochloromethane	NE	J		00 1		37 07/04/20 00:3		
Bromodichloromethane	NE	-		00 1		37 07/04/20 00:3		
Bromoform	NE	-		00 1		37 07/04/20 00:3		
romomethane	NE	0		00 1		37 07/04/20 00:3		
	NE	•		00 1		37 07/04/20 00:3		
-Butylbenzene		0						
ec-Butylbenzene	NE	0		00 1		37 07/04/20 00:3		
ert-Butylbenzene	NE	0		00 1		37 07/04/20 00:3		
Carbon tetrachloride	NE	0		00 1		37 07/04/20 00:3		
Chlorobenzene	NE	•		00 1		37 07/04/20 00:3		
Dibromochloromethane	NE	J		00 1		37 07/04/20 00:3		
Chloroethane	NE	0		00 1		37 07/04/20 00:3		
Chloroform	NE	0		00 1		37 07/04/20 00:3		
Chloromethane	NE	0		50 1		37 07/04/20 00:3		CC
2-Chlorotoluene	NE	) ug/L	1.	00 1		37 07/04/20 00:3		
-Chlorotoluene	NE	) ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 106-43-4	
,2-Dibromo-3-chloropropane	NE	) ug/L	5.	00 1	07/04/20 00:	37 07/04/20 00:3	7 96-12-8	
,2-Dibromoethane (EDB)	NE	) ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 106-93-4	
Dibromomethane	NE	ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 74-95-3	
,2-Dichlorobenzene	NE	ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 95-50-1	
,3-Dichlorobenzene	NE	ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 541-73-1	
,4-Dichlorobenzene	NE	ug/L	1.	00 1	07/04/20 00:	37 07/04/20 00:3	7 106-46-7	
Dichlorodifluoromethane	NE	_	5.	00 1	07/04/20 00:	37 07/04/20 00:3	7 75-71-8	
Dichlorofluoromethane	NE	•	5.	00 1	07/04/20 00:	37 07/04/20 00:3	7 75-43-4	
,1-Dichloroethane	NE	•		00 1	07/04/20 00:	37 07/04/20 00:3	7 75-34-3	
,2-Dichloroethane	NE	•		00 1		37 07/04/20 00:3		
,1-Dichloroethene	NE	Ū		00 1		37 07/04/20 00:3		
sis-1,2-Dichloroethene	NE	-		00 1		37 07/04/20 00:3		
rans-1,2-Dichloroethene	NE	•		00 1		37 07/04/20 00:3		
,2-Dichloropropane	NE	•		00 1		37 07/04/20 00:3		
	NE NE	J				:37   07/04/20 00:3		
,1-Dichloropropene		J						
I,3-Dichloropropane cis-1,3-Dichloropropene	NE NE	•	1. 1.	00 1 00 1		37 07/04/20 00:3 37 07/04/20 00:3		



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (6-9)	Lab ID: 105	<b>Lab ID: 10523363013</b> Collected: 06/30/20 10:30 Received: 06/30/20 16:00 Matrix: Water						
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/04/20 00:37	07/04/20 00:37	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1		07/04/20 00:37		
Ethylbenzene	ND	ug/L	1.00	1	07/04/20 00:37	07/04/20 00:37	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/04/20 00:37	07/04/20 00:37	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/04/20 00:37		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/04/20 00:37	07/04/20 00:37	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1		07/04/20 00:37		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/04/20 00:37	07/04/20 00:37	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1		07/04/20 00:37		L0
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		07/04/20 00:37		
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/04/20 00:37		
laphthalene	ND	ug/L	5.00	1		07/04/20 00:37		
-Propylbenzene	ND	ug/L	1.00	1		07/04/20 00:37		
Styrene	ND	ug/L	1.00	1		07/04/20 00:37		
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/04/20 00:37		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/04/20 00:37		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/04/20 00:37		
etrachloroethene	ND	ug/L	1.00	1		07/04/20 00:37		
Tetrahydrofuran	ND	ug/L	5.00	1		07/04/20 00:37		
Toluene	ND	ug/L	1.00	1		07/04/20 00:37		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/04/20 00:37		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/04/20 00:37		
,1,1-Trichloroethane	ND	ug/L	1.00	1		07/04/20 00:37		
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/04/20 00:37		
Trichloroethene	ND	ug/L	1.00	1		07/04/20 00:37		LO
Trichlorofluoromethane	ND	ug/L	5.00	1		07/04/20 00:37		
,2,3-Trichloropropane	ND	ug/L	2.50	1		07/04/20 00:37		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/04/20 00:37		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/04/20 00:37		
/inyl chloride	ND	ug/L	1.00	1		07/04/20 00:37		
(ylene (Total)	ND	ug/L	3.00	1		07/04/20 00:37		
Surrogates	ND	ug/L	3.00		01/04/20 00.01	51,04,20 00.31	1000-20-7	
oluene-d8 (S)	99.9	%	80.0-120	1	07/04/20 00:37	07/04/20 00:37	2037-26-5	
-Bromofluorobenzene (S)	104	%	77.0-126	1		07/04/20 00:37		
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/04/20 00:37			



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-43 (14-17)	Lab ID: 1052	23363014	Collected: 06/30/2	0 11:30	Received: 06	3/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	10D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:38	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		70E by SIM Prepara Minneapolis	tion Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.28	1	07/06/20 17:48	07/08/20 18:49	123-91-1	
1,4-Dioxane-d8 (S)	42	%.	30-125	1	07/06/20 17:48	07/08/20 18:49	)	
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/04/20 00:57	07/04/20 00:57	7 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/04/20 00:57			
Benzene	ND	ug/L	1.00	1	07/04/20 00:57			
Bromobenzene	ND	ug/L	1.00	1	07/04/20 00:57			
Bromochloromethane	ND	ug/L	1.00	1	07/04/20 00:57			
Bromodichloromethane	ND	ug/L	1.00	1	07/04/20 00:57			
Bromoform	ND	ug/L	1.00	1	07/04/20 00:57			
romomethane	ND	ug/L	5.00	1	07/04/20 00:57			
-Butylbenzene	ND	ug/L	1.00	1	07/04/20 00:57			
•	ND ND	-	1.00	1	07/04/20 00:57			
ec-Butylbenzene ert-Butylbenzene	ND ND	ug/L ug/L	1.00	1	07/04/20 00:57			
Carbon tetrachloride	ND ND	ug/L ug/L	1.00	1	07/04/20 00:57			
Chlorobenzene	ND ND	-	1.00	1	07/04/20 00:57			
		ug/L						
Dibromochloromethane	ND	ug/L	1.00	1	07/04/20 00:57			
Chloroethane	ND	ug/L	5.00	1	07/04/20 00:57			
Chloroform	ND	ug/L	5.00	1	07/04/20 00:57			00
Chloromethane	ND	ug/L	2.50	1	07/04/20 00:57			CC
2-Chlorotoluene	ND	ug/L	1.00	1	07/04/20 00:57			
-Chlorotoluene	ND	ug/L	1.00	1	07/04/20 00:57			
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/04/20 00:57			
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/04/20 00:57			
Dibromomethane	ND	ug/L	1.00	1	07/04/20 00:57			
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:57			
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	7 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:57			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/04/20 00:57			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/04/20 00:57	07/04/20 00:57	75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	75-34-3	
,2-Dichloroethane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	107-06-2	
,1-Dichloroethene	ND	ug/L	1.00	1	07/04/20 00:57			
sis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	7 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	156-60-5	
,2-Dichloropropane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	78-87-5	
,1-Dichloropropene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	7 563-58-6	
,3-Dichloropropane	ND	ug/L	1.00	1	07/04/20 00:57			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/04/20 00:57			

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (14-17)	Lab ID: 105	23363014	Collected: 06/30/2	0 11:30	Received: 06	6/30/20 16:00 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	60-29-7	L0
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/04/20 00:57	07/04/20 00:57	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/04/20 00:57	07/04/20 00:57	75-09-2	L0
l-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/04/20 00:57	07/04/20 00:57	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	1634-04-4	
laphthalene	ND	ug/L	5.00	1	07/04/20 00:57	07/04/20 00:57	91-20-3	
-Propylbenzene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	103-65-1	
Styrene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/04/20 00:57		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/04/20 00:57		
etrachloroethene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	127-18-4	
etrahydrofuran	ND	ug/L	5.00	1		07/04/20 00:57		
oluene	ND	ug/L	1.00	1		07/04/20 00:57		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/04/20 00:57		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	1	07/04/20 00:57	07/04/20 00:57	79-00-5	
richloroethene	ND	ug/L	1.00	1		07/04/20 00:57		L0
richlorofluoromethane	ND	ug/L	5.00	1		07/04/20 00:57		
,2,3-Trichloropropane	ND	ug/L	2.50	1		07/04/20 00:57		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/04/20 00:57		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/04/20 00:57		
/inyl chloride	ND	ug/L	1.00	1		07/04/20 00:57		
(ylene (Total)	ND	ug/L	3.00	1		07/04/20 00:57		
Surrogates		· <i>9</i> · –	2.30	,				
oluene-d8 (S)	99.9	%	80.0-120	1	07/04/20 00:57	07/04/20 00:57	2037-26-5	
-Bromofluorobenzene (S)	104	%	77.0-126	1	07/04/20 00:57	07/04/20 00:57	460-00-4	
1,2-Dichloroethane-d4 (S)	98.9	%	70.0-130	1	07/04/20 00:57	07/04/20 00:57	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-43 (22-25)	Lab ID: 10	523363015	Collected: 06/30/2	20 12:40	Received: 0	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical Me	thod: EPA 60	010D Preparation Me	ethod: El	PA 3010A			
	Pace Analytic	al Services -	- Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:4	1 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Me		270E by SIM Prepara - Minneapolis	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	0.32	ug/L	0.31	1	07/06/20 17:48	07/08/20 19:1	0 123-91-1	
1,4-Dioxane-d8 (S)	42	%.	30-125	1	07/06/20 17:48	07/08/20 19:1	0	
VOA (GC/MS) 8260D			260D Preparation Me	ethod: 82	260D			
	Pace Nationa	I - Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/04/20 01:17	07/04/20 01:1	7 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/04/20 01:17	07/04/20 01:1	7 107-05-1	
Benzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 71-43-2	
Bromobenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 108-86-1	
Bromochloromethane	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 74-97-5	
Bromodichloromethane	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 75-27-4	
Bromoform	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 75-25-2	
Bromomethane	ND	ug/L	5.00	1	07/04/20 01:17	07/04/20 01:1	7 74-83-9	
n-Butylbenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 124-48-1	
Chloroethane	ND	ug/L	5.00	1		07/04/20 01:1		
Chloroform	ND	ug/L	5.00	1		07/04/20 01:1		
Chloromethane	ND	ug/L	2.50	1		07/04/20 01:1		CC
2-Chlorotoluene	ND	ug/L	1.00	1		07/04/20 01:1		
4-Chlorotoluene	ND	ug/L	1.00	1		07/04/20 01:1		
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/04/20 01:1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/04/20 01:1		
Dibromomethane	ND	ug/L	1.00	1		07/04/20 01:1		
1,2-Dichlorobenzene	ND	ug/L	1.00	1		07/04/20 01:1		
1,3-Dichlorobenzene	ND	ug/L	1.00	1		07/04/20 01:1		
1,4-Dichlorobenzene	ND	ug/L	1.00	1		07/04/20 01:1		
Dichlorodifluoromethane	ND ND	ug/L	5.00	1		07/04/20 01:1		
Dichlorofluoromethane	ND	ug/L	5.00	1		07/04/20 01:1		
		_						
1,1-Dichloroethane	ND ND	ug/L	1.00	1		07/04/20 01:1		
,2-Dichloroethane	ND	ug/L	1.00	1		07/04/20 01:1		
1,1-Dichloroethene	ND	ug/L	1.00	1		07/04/20 01:1		
cis-1,2-Dichloroethene	ND	ug/L	1.00	1		07/04/20 01:1		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/04/20 01:1		
1,2-Dichloropropane	ND	ug/L	1.00	1		07/04/20 01:1		
1,1-Dichloropropene	ND	ug/L	1.00	1		07/04/20 01:1		
1,3-Dichloropropane	ND	ug/L	1.00	1		07/04/20 01:1		
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:1	7 10061-01-5	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (22-25)	Lab ID: 105	23363015	Collected: 06/30/2	20 12:40	Received: 06	6/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	60-29-7	LO
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/04/20 01:17	07/04/20 01:17	7 78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/04/20 01:17	07/04/20 01:17	7 75-09-2	L0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/04/20 01:17	07/04/20 01:17	7 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/04/20 01:17	07/04/20 01:17	7 1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/04/20 01:17			
n-Propylbenzene	ND	ug/L	1.00	1	07/04/20 01:17			
Styrene	ND	ug/L	1.00	1	07/04/20 01:17			
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/04/20 01:17			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/04/20 01:17			
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/04/20 01:17			
etrachloroethene	ND	ug/L	1.00	1	07/04/20 01:17			
Tetrahydrofuran	ND	ug/L	5.00	1	07/04/20 01:17			
Foluene	ND	ug/L	1.00	1	07/04/20 01:17			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/04/20 01:17			
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/04/20 01:17			
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/04/20 01:17			
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/04/20 01:17			
Frichloroethene	ND	ug/L	1.00	1	07/04/20 01:17			LO
Trichlorofluoromethane	ND ND	ug/L	5.00	1	07/04/20 01:17			LU
1,2,3-Trichloropropane	ND ND	ug/L	2.50	1	07/04/20 01:17			
,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	07/04/20 01:17			
•	ND ND	•	1.00	1	07/04/20 01:17			
,3,5-Trimethylbenzene /inyl chloride	ND ND	ug/L ug/L	1.00	1	07/04/20 01:17			
•	ND ND	•	3.00	1	07/04/20 01:17			
<pre>⟨ylene (Total)</pre> <pre>Surrogates</pre>	ND	ug/L	3.00	1	07/04/20 01:17	07/04/20 01:17	1330-20-7	
Toluene-d8 (S)	99.4	%	80.0-120	1	07/04/20 01:17	07/04/20 01:13	7 2037-26-5	
4-Bromofluorobenzene (S)	104	%	77.0-126	1	07/04/20 01:17			
1,2-Dichloroethane-d4 (S)	99.1	% %	70.0-120	1	07/04/20 01:17			



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Sample: GP-43 (30-33)	Lab ID: 105	23363016	Collected: 06/30/2	0 13:50	Received: 06	3/30/20 16:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:44	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ition Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	0.36	ug/L	0.29	1	07/06/20 17:48	07/08/20 19:31	l 123-91-1	
1,4-Dioxane-d8 (S)	35	%.	30-125	1	07/06/20 17:48	07/08/20 19:3	I	
VOA (GC/MS) 8260D	•		260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/07/20 00:01	07/07/20 00:01	l 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/07/20 00:01	07/07/20 00:01	1 107-05-1	
Benzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	71-43-2	
Bromobenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	I 108-86-1	
Bromochloromethane	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	74-97-5	L0
Bromodichloromethane	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	75-27-4	
Bromoform	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	75-25-2	
Bromomethane	ND	ug/L	5.00	1	07/07/20 00:01	07/07/20 00:01	74-83-9	
-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	I 104-51-8	
ec-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	I 135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	l 98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	I 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	I 108-90-7	L0
Dibromochloromethane	ND	ug/L	1.00	1	07/07/20 00:01			
Chloroethane	ND	ug/L	5.00	1	07/07/20 00:01			
Chloroform	ND	ug/L	5.00	1	07/07/20 00:01			
Chloromethane	ND	ug/L	2.50	1	07/07/20 00:01			
2-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 00:01			
I-Chlorotoluene	ND	ug/L	1.00	1	07/07/20 00:01			
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/07/20 00:01			
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/07/20 00:01			
Dibromomethane	ND	ug/L	1.00	1	07/07/20 00:01			
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 00:01			
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/07/20 00:01			
,4-Dichlorobenzene	ND	•	1.00	1	07/07/20 00:01			
Dichlorodifluoromethane	ND ND	ug/L	5.00	1	07/07/20 00:01			
Dichlorofluoromethane	ND ND	ug/L	5.00	1	07/07/20 00:01			
		ug/L						
,1-Dichloroethane	ND	ug/L	1.00	1	07/07/20 00:01			
,2-Dichloroethane	ND	ug/L	1.00	1	07/07/20 00:01			
,1-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:01			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:01			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/07/20 00:01			
I,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:01			
I,1-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:01			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:01			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	10061-01-5	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (30-33)	Lab ID: 10	523363016	Collected: 06/30/2	20 13:50	Received: 06	6/30/20 16:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace Nationa	al - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	99-87-6	
P-Butanone (MEK)	ND	ug/L	10.0	1	07/07/20 00:01	07/07/20 00:01	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/07/20 00:01	07/07/20 00:01	75-09-2	
-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/07/20 00:01	07/07/20 00:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	1634-04-4	
laphthalene	ND	ug/L	5.00	1		07/07/20 00:01		
-Propylbenzene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	103-65-1	
ityrene	ND	ug/L	1.00	1	07/07/20 00:01	07/07/20 00:01	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/07/20 00:01		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/07/20 00:01		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/07/20 00:01		
etrachloroethene	ND	ug/L	1.00	1		07/07/20 00:01		L0
etrahydrofuran	ND	ug/L	5.00	1		07/07/20 00:01		
oluene	ND	ug/L	1.00	1		07/07/20 00:01		
,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:01		
,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/07/20 00:01		
,1,1-Trichloroethane	ND	ug/L	1.00	1		07/07/20 00:01		
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/07/20 00:01		
richloroethene	ND	ug/L	1.00	1		07/07/20 00:01		L0
richlorofluoromethane	ND	ug/L	5.00	1		07/07/20 00:01		_0
,2,3-Trichloropropane	ND	ug/L	2.50	1		07/07/20 00:01		
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/07/20 00:01		
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/07/20 00:01		
inyl chloride	ND	ug/L	1.00	1	07/07/20 00:01			
(ylene (Total)	ND	ug/L	3.00	1		07/07/20 00:01		
Surrogates	110	4g/L	0.00	•	37,07,20 00.01	51,51,20 00.01	1000 20 7	
oluene-d8 (S)	108	%	80.0-120	1	07/07/20 00:01	07/07/20 00:01	2037-26-5	
-Bromofluorobenzene (S)	97.8	%	77.0-126	1	07/07/20 00:01			
1,2-Dichloroethane-d4 (S)	114	%	70.0-130	1		07/07/20 00:01		



Project: 2606-0017 Water Gremlin SRI

Date: 07/13/2020 04:36 PM

Parameters  1010D MET ICP, Lab Filtered  1010D MET ICP, Lab Filtered  10270E MSSV 14 Dioxane By SIM	•	Units od: EPA 60	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
ead, Dissolved	Pace Analytical	od: EPA 60	010D Dranaration Ma						
	•		Preparation Me	thod: E	PA 3010A				
	ND	Pace Analytical Services - Minneapolis							
270E MSSV 14 Dioxane By SIM	ND	ug/L	10.0	1	07/06/20 05:41	07/06/20 16:4	7 7439-92-1		
	Analytical Meth	od: EPA 82	270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C			
·	Pace Analytical Services - Minneapolis								
,4-Dioxane (SIM)	0.37	ug/L	0.25	1	07/06/20 17:48	07/08/20 19:5	2 123-91-1		
Surrogates									
,4-Dioxane-d8 (S)	36	%.	30-125	1	07/06/20 17:48	07/08/20 19:5	2		
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260D								
	Pace National -	Mt. Juliet							
cetone	ND	ug/L	50.0	1	07/09/20 21:45	07/09/20 21:4	5 67-64-1		
Allyl chloride	ND ND	ug/L	5.00	1		07/09/20 21:4			
Benzene	ND	ug/L	1.00	1		07/09/20 21:4			
Bromobenzene	ND ND	ug/L	1.00	1		07/09/20 21:4			
Bromochloromethane	ND ND	•	1.00	1		07/09/20 21:4			
		ug/L							
Bromodichloromethane	ND	ug/L	1.00	1		07/09/20 21:4			
Bromoform	ND	ug/L	1.00	1		07/09/20 21:4			
Bromomethane	ND	ug/L	5.00	1		07/09/20 21:4			
-Butylbenzene	ND	ug/L	1.00	1		07/09/20 21:4			
ec-Butylbenzene	ND	ug/L	1.00	1		07/09/20 21:4			
ert-Butylbenzene	ND	ug/L	1.00	1		07/09/20 21:4			
Carbon tetrachloride	ND	ug/L	1.00	1		07/09/20 21:4			
Chlorobenzene	ND	ug/L	1.00	1		07/09/20 21:4			
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:4	5 124-48-1		
Chloroethane	ND	ug/L	5.00	1		07/09/20 21:4			
Chloroform	ND	ug/L	5.00	1	07/09/20 21:45	07/09/20 21:4	5 67-66-3		
Chloromethane	ND	ug/L	2.50	1	07/09/20 21:45	07/09/20 21:4	5 74-87-3		
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:4	5 95-49-8		
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:4	5 106-43-4		
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/09/20 21:4			
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:4	5 106-93-4		
Dibromomethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:4	5 74-95-3		
.2-Dichlorobenzene	ND	ug/L	1.00	1		07/09/20 21:4			
,3-Dichlorobenzene	ND	ug/L	1.00	1		07/09/20 21:4			
,4-Dichlorobenzene	ND	ug/L	1.00	1		07/09/20 21:4			
Dichlorodifluoromethane	ND	ug/L	5.00	1		07/09/20 21:4			
Dichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 21:4			
,1-Dichloroethane	ND	ug/L	1.00	1		07/09/20 21:4			
,2-Dichloroethane	ND	ug/L	1.00	1		07/09/20 21:4			
,1-Dichloroethene	ND ND	•	1.00			07/09/20 21:4			
		ug/L		1					
is-1,2-Dichloroethene	ND	ug/L	1.00	1		07/09/20 21:4			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/09/20 21:4			
,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 21:4			
,1-Dichloropropene	ND	ug/L	1.00	1		07/09/20 21:4			
,3-Dichloropropane is-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00 1.00	1 1		07/09/20 21:4 07/09/20 21:4			

## **REPORT OF LABORATORY ANALYSIS**

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#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Sample: GP-43 (38-40)	Lab ID: 105	523363017	Collected: 06/30/2	0 14:45	Received: 06	/30/20 16:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	thod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	l - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1		07/09/20 21:45		
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 21:45		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 21:45	07/09/20 21:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 21:45	07/09/20 21:45	91-20-3	
r-Propylbenzene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	630-20-6	
I,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/09/20 21:45		
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 21:45	07/09/20 21:45	109-99-9	
Toluene	1.58	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	79-01-6	
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 21:45		
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 21:45	07/09/20 21:45	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 21:45	07/09/20 21:45	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 21:45		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 21:45		
Kylene (Total)	ND	ug/L	3.00	1		07/09/20 21:45		
Surrogates		J						
Toluene-d8 (S)	95.9	%	80.0-120	1	07/09/20 21:45	07/09/20 21:45	2037-26-5	
1-Bromofluorobenzene (S)	87.1	%	77.0-126	1	07/09/20 21:45	07/09/20 21:45	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/09/20 21:45	07/09/20 21:45	17060-07-0	



1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Lead, Dissolved

LABORATORY CONTROL SAMPLE:

Date: 07/13/2020 04:36 PM

QC Batch: 684710 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

07/06/20 15:51

10.0

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363013, 10523363014,

10523363015, 10523363016, 10523363017

METHOD BLANK: 3662363 Matrix: Water

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363013, 10523363014,

10523363015, 10523363016, 10523363017

ug/L

Blank Reporting

ND

Parameter Units Result Limit Analyzed Qualifiers

LCS LCS % Rec Spike Parameter Units Result % Rec Limits Qualifiers Conc. 96 Lead, Dissolved ug/L 1000 959 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3662365 3662366

3662364

MS MSD

10523363001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Lead, Dissolved ND 20 1000 1000 935 934 93 93 75-125 0 ug/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

QC Batch: 1503961 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363007, 10523363013,

10523363014, 10523363015

METHOD BLANK: R3546271-4 Matrix: Water

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363007, 10523363013,

10523363014, 10523363015

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/03/20 17:16	
Benzene	ug/L	ND	1.00	07/03/20 17:16	
Bromobenzene	ug/L	ND	1.00	07/03/20 17:16	
Bromodichloromethane	ug/L	ND	1.00	07/03/20 17:16	
Bromochloromethane	ug/L	ND	1.00	07/03/20 17:16	
Bromoform	ug/L	ND	1.00	07/03/20 17:16	
Bromomethane	ug/L	ND	5.00	07/03/20 17:16	
n-Butylbenzene	ug/L	ND	1.00	07/03/20 17:16	
sec-Butylbenzene	ug/L	ND	1.00	07/03/20 17:16	
tert-Butylbenzene	ug/L	ND	1.00	07/03/20 17:16	
Carbon tetrachloride	ug/L	ND	1.00	07/03/20 17:16	
Chlorobenzene	ug/L	ND	1.00	07/03/20 17:16	
Dibromochloromethane	ug/L	ND	1.00	07/03/20 17:16	
Chloroethane	ug/L	ND	5.00	07/03/20 17:16	
Chloroform	ug/L	ND	5.00	07/03/20 17:16	
Chloromethane	ug/L	ND	2.50	07/03/20 17:16	
2-Chlorotoluene	ug/L	ND	1.00	07/03/20 17:16	
4-Chlorotoluene	ug/L	ND	1.00	07/03/20 17:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/03/20 17:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/03/20 17:16	
Dibromomethane	ug/L	ND	1.00	07/03/20 17:16	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/03/20 17:16	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/03/20 17:16	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/03/20 17:16	
Dichlorodifluoromethane	ug/L	ND	5.00	07/03/20 17:16	
Dichlorofluoromethane	ug/L	ND	5.00	07/03/20 17:16	
1,1-Dichloroethane	ug/L	ND	1.00	07/03/20 17:16	
1,2-Dichloroethane	ug/L	ND	1.00	07/03/20 17:16	
1,1-Dichloroethene	ug/L	ND	1.00	07/03/20 17:16	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/03/20 17:16	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/03/20 17:16	
1,2-Dichloropropane	ug/L	ND	1.00	07/03/20 17:16	
1,1-Dichloropropene	ug/L	ND	1.00	07/03/20 17:16	
1,3-Dichloropropane	ug/L	ND	1.00	07/03/20 17:16	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/03/20 17:16	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/03/20 17:16	
2,2-Dichloropropane	ug/L	ND	1.00	07/03/20 17:16	
Ethylbenzene	ug/L	ND	1.00	07/03/20 17:16	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/03/20 17:16	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

METHOD BLANK: R3546271-4 Matrix: Water

10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363007, 10523363013, Associated Lab Samples: Diami.

10523363014, 10523363015

Hexachloro-1,3-butadiene
Hexachloro-1,3-butadiene   ug/L   ND
Isopropylbenzene (Cumene)
p-Isopropyltoluene         ug/L         ND         1.00         07/03/20 17:16           2-Butanone (MEK)         ug/L         ND         10.0         07/03/20 17:16           Methylene Chloride         ug/L         ND         5.00         07/03/20 17:16           4-Methyl-2-pentanone (MIBK)         ug/L         ND         10.0         07/03/20 17:16           Methyl-tert-butyl ether         ug/L         ND         1.00         07/03/20 17:16           Maphthalene         ug/L         ND         5.00         07/03/20 17:16           Naphthalene         ug/L         ND         1.00         07/03/20 17:16           Naphthalene         ug/L         ND         1.00         07/03/20 17:16           Naphthalene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorotrifluoroethane         ug/L         ND <t< td=""></t<>
2-Butanone (MEK) ug/L ND 10.0 07/03/20 17:16  Methylene Chloride ug/L ND 5.00 07/03/20 17:16  4-Methyl-2-pentanone (MIBK) ug/L ND 10.0 07/03/20 17:16  Methyl-tert-butyl ether ug/L ND 1.00 07/03/20 17:16  Naphthalene ug/L ND 5.00 07/03/20 17:16  Naphthalene ug/L ND 1.00 07/03/20 17:16  Naphthalene ug/L ND 1.00 07/03/20 17:16  Styrene ug/L ND 1.00 07/03/20 17:16  Styrene ug/L ND 1.00 07/03/20 17:16  1,1,1,2-Tetrachloroethane ug/L ND 1.00 07/03/20 17:16  Tetrachloroethene ug/L ND 1.00 07/03/20 17:16  Tetrachloroethene ug/L ND 1.00 07/03/20 17:16  Tetrahydrofuran ug/L ND 1.00 07/03/20 17:16  Toluene ug/L ND 5.00 07/03/20 17:16  Toluene ug/L ND 1.00 07/03/20 17:16  1,1,2-Trichlorotrifluoroethane ug/L ND 1.00 07/03/20 17:16  1,2-3-Trichlorobenzene ug/L ND 1.00 07/03/20 17:16  1,2,4-Trichlorobenzene ug/L ND 1.00 07/03/20 17:16  1,1,1-Trichloroethane ug/L ND 1.00 07/03/20 17:16  1,1,2-Trichloroethane ug/L ND 1.00 07/03/20 17:16  Trichloroethane ug/L ND 1.00 07/03/20 17:16  Trichloroptopropane ug/L ND 1.00 07/03/20 17:16  1,2,3-Trichloroptopropane ug/L ND 1.00 07/03/20 17:16  1,2,4-Trimethylbenzene ug/L ND 1.00 07/03/20 17:16
Methylene Chloride         ug/L         ND         5.00         07/03/20 17:16           4-Methyl-2-pentanone (MIBK)         ug/L         ND         10.0         07/03/20 17:16           Methyl-tert-butyl ether         ug/L         ND         1.00         07/03/20 17:16           Naphthalene         ug/L         ND         5.00         07/03/20 17:16           N-Propylbenzene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethene         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L
4-Methyl-2-pentanone (MIBK)       ug/L       ND       10.0       07/03/20 17:16         Methyl-tert-butyl ether       ug/L       ND       1.00       07/03/20 17:16         Naphthalene       ug/L       ND       5.00       07/03/20 17:16         n-Propylbenzene       ug/L       ND       1.00       07/03/20 17:16         Styrene       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         Tetrachloroethene       ug/L       ND       1.00       07/03/20 17:16         Tetrachlorothene       ug/L       ND       1.00       07/03/20 17:16         Toluene       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichlorotrifluoroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichloropropane
Methyl-tert-butyl ether         ug/L         ND         1.00         07/03/20 17:16           Naphthalene         ug/L         ND         5.00         07/03/20 17:16           n-Propylbenzene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethene         ug/L         ND         1.00         07/03/20 17:16           Tetrachlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         N
Naphthalene         ug/L         ND         5.00         07/03/20 17:16           n-Propylbenzene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrahydrofuran         ug/L         ND         1.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethane         ug/L         ND         1.00
n-Propylbenzene         ug/L         ND         1.00         07/03/20 17:16           Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           Tetrachloroethene         ug/L         ND         1.00         07/03/20 17:16           Tetrahydrofuran         ug/L         ND         5.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethene         ug/L         ND         1.00         07/03/20 17:16           Trichloropropane         ug/L         <
Styrene         ug/L         ND         1.00         07/03/20 17:16           1,1,1,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2,2-Tetrachloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Tetrachloroethene         ug/L         ND         1.00         07/03/20 17:16           Tetrahydrofuran         ug/L         ND         5.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichlorofluoromethane         ug/L
1,1,1,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         Tetrachloroethene       ug/L       ND       5.00       07/03/20 17:16         Toluene       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         Trichloroethene       ug/L       ND       1.00       07/03/20 17:16         Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Tr
1,1,2,2-Tetrachloroethane       ug/L       ND       1.00       07/03/20 17:16         Tetrachloroethene       ug/L       ND       1.00       07/03/20 17:16         Tetrahydrofuran       ug/L       ND       5.00       07/03/20 17:16         Toluene       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichlorotrifluoroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         Trichloroethene       ug/L       ND       1.00       07/03/20 17:16         Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trime
Tetrachloroethene         ug/L         ND         1.00         07/03/20 17:16           Tetrahydrofuran         ug/L         ND         5.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,1,1-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichlorofluoromethane         ug/L         ND         5.00         07/03/20 17:16           1,2,3-Trichloropropane         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trimethylbenzene <t< td=""></t<>
Tetrahydrofuran         ug/L         ND         5.00         07/03/20 17:16           Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,1,1-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichlorofluoromethane         ug/L         ND         5.00         07/03/20 17:16           1,2,3-Trichloropropane         ug/L         ND         2.50         07/03/20 17:16           1,2,4-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16           1,3,5-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16
Toluene         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichlorotrifluoroethane         ug/L         ND         1.00         07/03/20 17:16           1,2,3-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,2,4-Trichlorobenzene         ug/L         ND         1.00         07/03/20 17:16           1,1,1-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           1,1,2-Trichloroethane         ug/L         ND         1.00         07/03/20 17:16           Trichloroethene         ug/L         ND         1.00         07/03/20 17:16           Trichlorofluoromethane         ug/L         ND         5.00         07/03/20 17:16           1,2,3-Trichloropropane         ug/L         ND         2.50         07/03/20 17:16           1,2,4-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16           1,3,5-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16
1,1,2-Trichlorotrifluoroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         Trichloroethene       ug/L       ND       1.00       07/03/20 17:16         Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,2,3-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,2,4-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,6-Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,2,4-Trichlorobenzene       ug/L       ND       1.00       07/03/20 17:16         1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,1,1-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         Trichloroethene       ug/L       ND       1.00       07/03/20 17:16         Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,1,2-Trichloroethane       ug/L       ND       1.00       07/03/20 17:16         Trichloroethene       ug/L       ND       1.00       07/03/20 17:16         Trichlorofluoromethane       ug/L       ND       5.00       07/03/20 17:16         1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
Trichloroethene         ug/L         ND         1.00         07/03/20 17:16           Trichlorofluoromethane         ug/L         ND         5.00         07/03/20 17:16           1,2,3-Trichloropropane         ug/L         ND         2.50         07/03/20 17:16           1,2,4-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16           1,3,5-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16
Trichlorofluoromethane         ug/L         ND         5.00         07/03/20 17:16           1,2,3-Trichloropropane         ug/L         ND         2.50         07/03/20 17:16           1,2,4-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16           1,3,5-Trimethylbenzene         ug/L         ND         1.00         07/03/20 17:16
1,2,3-Trichloropropane       ug/L       ND       2.50       07/03/20 17:16         1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,2,4-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16         1,3,5-Trimethylbenzene       ug/L       ND       1.00       07/03/20 17:16
1,3,5-Trimethylbenzene ug/L ND 1.00 07/03/20 17:16
Vinyl chloride ug/L ND 1.00 07/03/20 17:16
Xylene (Total) ug/L ND 3.00 07/03/20 17:16
Allyl chloride ug/L ND 5.00 07/03/20 17:16
Toluene-d8 (S) % 99.1 80.0-120 07/03/20 17:16
4-Bromofluorobenzene (S) % 103 77.0-126 07/03/20 17:16
1,2-Dichloroethane-d4 (S) % 96.4 70.0-130 07/03/20 17:16

LABORATORY CONTROL SAMPLE	& LCSD: R3546	271-1	R	3546271-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	38.9	38.5	156	154	19.0-160	1.03	27	
Benzene	ug/L	5.00	5.78	5.75	116	115	70.0-123	0.520	20	
Bromobenzene	ug/L	5.00	5.03	4.84	101	96.8	73.0-121	3.85	20	
Bromodichloromethane	ug/L	5.00	5.69	5.53	114	111	75.0-120	2.85	20	
Bromochloromethane	ug/L	5.00	5.99	5.76	120	115	76.0-122	3.91	20	
Bromoform	ug/L	5.00	5.46	5.31	109	106	68.0-132	2.79	20	
Bromomethane	ug/L	5.00	5.30	5.29	106	106	10.0-160	0.189	25	
n-Butylbenzene	ug/L	5.00	5.28	5.37	106	107	73.0-125	1.69	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

_ABORATORY CONTROL SAMPLE &	LCSD: R3546			3546271-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD .	RPD	Qualifier
sec-Butylbenzene	ug/L	5.00	5.34	5.36	107	107	75.0-125	0.374	20	
ert-Butylbenzene	ug/L	5.00	5.32	5.31	106	106	76.0-124	0.188	20	
Carbon tetrachloride	ug/L	5.00	5.87	5.81	117	116	68.0-126	1.03	20	
Chlorobenzene	ug/L	5.00	5.53	5.58	111	112	80.0-121	0.900	20	
Dibromochloromethane	ug/L	5.00	5.57	5.66	111	113	77.0-125	1.60	20	
Chloroethane	ug/L	5.00	4.24	4.88	84.8	97.6	47.0-150	14.0	20	
Chloroform	ug/L	5.00	5.83	5.68	117	114	73.0-120	2.61	20	
Chloromethane	ug/L	5.00	3.75	3.73	75.0	74.6	41.0-142	0.535	20	
2-Chlorotoluene	ug/L	5.00	5.05	4.95	101	99.0	76.0-123	2.00	20	
1-Chlorotoluene	ug/L	5.00	5.13	5.15	103	103	75.0-122	0.389	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	4.91	5.26	98.2	105	58.0-134	6.88	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	5.44	5.55	109	111	80.0-122	2.00	20	
Dibromomethane	ug/L	5.00	5.85	5.84	117	117	80.0-120	0.171	20	
1,2-Dichlorobenzene	ug/L	5.00	5.54	5.37	111	107	79.0-121	3.12	20	
1,3-Dichlorobenzene	ug/L	5.00	5.41	5.33	108	107	79.0-120	1.49	20	
1,4-Dichlorobenzene	ug/L	5.00	5.18	5.10	104	102	79.0-120	1.56	20	
Dichlorodifluoromethane	ug/L	5.00	4.46	4.30	89.2	86.0	51.0-149	3.65	20	
Dichlorofluoromethane	ug/L	5.00	4.12	4.16	82.4	83.2	65.0-133	0.966	20	
,1-Dichloroethane	ug/L	5.00	5.95	5.87	119	117	70.0-126	1.35	20	
I,2-Dichloroethane	ug/L	5.00	5.59	5.44	112	109	70.0-128	2.72	20	
I,1-Dichloroethene	ug/L	5.00	6.10	5.96	122	119	71.0-124	2.32	20	
cis-1,2-Dichloroethene	ug/L	5.00	5.72	5.87	114	117	73.0-120	2.59	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.76	5.66	115	113	73.0-120	1.75	20	
1,2-Dichloropropane	ug/L	5.00	6.10	6.07	122	121	77.0-125	0.493	20	
1,1-Dichloropropene	ug/L	5.00	6.05	6.09	121	122	74.0-126	0.659	20	
1,3-Dichloropropane	ug/L	5.00	5.58	5.53	112	111	80.0-120	0.900	20	
cis-1,3-Dichloropropene	ug/L	5.00	5.70	5.72	114	114	80.0-123	0.350	20	
rans-1,3-Dichloropropene	ug/L	5.00	5.19	5.35	104	107	78.0-124	3.04	20	
2,2-Dichloropropane	ug/L	5.00	5.65	5.25	113	105	58.0-130	7.34	20	
Ethylbenzene	ug/L	5.00	5.48	5.41	110	108	79.0-123	1.29	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	7.50	6.23	150	125	66.0-130	18.5	20 L	0
Hexachloro-1,3-butadiene	ug/L	5.00	5.50	5.74	110	115	54.0-138	4.27	20	-0
sopropylbenzene (Cumene)	ug/L	5.00	5.50	5.58	110	112	76.0-127	1.44	20	
o-Isopropyltoluene	ug/L	5.00	5.46	5.37	109	107	76.0-125	1.66	20	
2-Butanone (MEK)	ug/L	25.0	31.0	31.7	124	127	44.0-160	2.23	20	
Methylene Chloride	ug/L	5.00	6.03	5.85	121	117	67.0-120	3.03	20 L	0
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	27.5	28.1	110	112		2.16	20	_0
Methyl-tert-butyl ether	ug/L	5.00	5.99	5.91	120	118	68.0-125	1.34	20	
Naphthalene	ug/L	5.00	5.09	5.39	102	108	54.0-135	5.73	20	
n-Propylbenzene	ug/L	5.00	5.38	5.27	108		77.0-124	2.07	20	
Styrene	ug/L ug/L	5.00	5.54	5.63	111	113	73.0-124	1.61	20	
1,1,1,2-Tetrachloroethane	ug/L	5.00	5.36	5.40	107	108	75.0-130 75.0-125	0.744	20	
1,1,2,2-Tetrachioroethane	ug/L ug/L	5.00	5.19	5.40	107	103	65.0-123	0.744	20	
r, r,z,z- retrachioroethane Tetrachloroethene	_	5.00	5.19	5.70	113		72.0-132	1.06	20	
	ug/L									
Tetrahydrofuran	ug/L	5.00	6.78	6.79	136	136	41.0-146	0.147	20	
Toluene	ug/L	5.00	5.47	5.55	109	111	79.0-120 69.0-132	1.45	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3546	271-1	R	3546271-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,3-Trichlorobenzene	ug/L	5.00	5.73	5.88	115	118	50.0-138	2.58	20	
1,2,4-Trichlorobenzene	ug/L	5.00	5.44	5.86	109	117	57.0-137	7.43	20	
1,1,1-Trichloroethane	ug/L	5.00	5.78	5.92	116	118	73.0-124	2.39	20	
1,1,2-Trichloroethane	ug/L	5.00	5.82	5.90	116	118	80.0-120	1.37	20	
Trichloroethene	ug/L	5.00	6.30	6.31	126	126	78.0-124	0.159	20 l	_0
Trichlorofluoromethane	ug/L	5.00	4.20	4.35	84.0	87.0	59.0-147	3.51	20	
1,2,3-Trichloropropane	ug/L	5.00	5.78	5.75	116	115	73.0-130	0.520	20	
1,2,4-Trimethylbenzene	ug/L	5.00	5.31	5.30	106	106	76.0-121	0.189	20	
1,3,5-Trimethylbenzene	ug/L	5.00	5.30	5.22	106	104	76.0-122	1.52	20	
Vinyl chloride	ug/L	5.00	4.05	4.08	81.0	81.6	67.0-131	0.738	20	
Xylene (Total)	ug/L	15.0	16.2	16.5	108	110	79.0-123	1.83	20	
Allyl chloride	ug/L	25.0	29.9	29.1	120	116	72.0-128	2.71	20	
Toluene-d8 (S)	%				98.6	100	80.0-120			
4-Bromofluorobenzene (S)	%				106	106	77.0-126			
1,2-Dichloroethane-d4 (S)	%				98.4	96.7	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

QC Batch: 1504675 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523363016

METHOD BLANK: R3547423-3 Matrix: Water

Associated Lab Samples: 10523363016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/06/20 20:47	
Benzene	ug/L	ND	1.00	07/06/20 20:47	
Bromobenzene	ug/L	ND	1.00	07/06/20 20:47	
Bromodichloromethane	ug/L	ND	1.00	07/06/20 20:47	
Bromochloromethane	ug/L	ND	1.00	07/06/20 20:47	
Bromoform	ug/L	ND	1.00	07/06/20 20:47	
Bromomethane	ug/L	ND	5.00	07/06/20 20:47	
n-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
sec-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
tert-Butylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Carbon tetrachloride	ug/L	ND	1.00	07/06/20 20:47	
Chlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
Dibromochloromethane	ug/L	ND	1.00	07/06/20 20:47	
Chloroethane	ug/L	ND	5.00	07/06/20 20:47	
Chloroform	ug/L	ND	5.00	07/06/20 20:47	
Chloromethane	ug/L	ND	2.50	07/06/20 20:47	
2-Chlorotoluene	ug/L	ND	1.00	07/06/20 20:47	
4-Chlorotoluene	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/06/20 20:47	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/06/20 20:47	
Dibromomethane	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/06/20 20:47	
Dichlorodifluoromethane	ug/L	ND	5.00	07/06/20 20:47	
Dichlorofluoromethane	ug/L	ND	5.00	07/06/20 20:47	
1,1-Dichloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichloroethane	ug/L	ND	1.00	07/06/20 20:47	
1,1-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/06/20 20:47	
1,2-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
1,1-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
1,3-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/06/20 20:47	
2,2-Dichloropropane	ug/L	ND	1.00	07/06/20 20:47	
Ethylbenzene	ug/L	ND	1.00	07/06/20 20:47	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/06/20 20:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/06/20 20:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

METHOD BLANK: R3547423-3 Matrix: Water

Associated Lab Samples: 10523363016

Analyzed Qualifiers 07/06/20 20:47
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01/00/20 20.41

LABORATORY CONTROL SAMPLE &										
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	22.1	19.2	88.4	76.8	19.0-160	14.0	27	
Benzene	ug/L	5.00	5.46	5.39	109	108	70.0-123	1.29	20	
Bromobenzene	ug/L	5.00	4.46	4.41	89.2	88.2	73.0-121	1.13	20	
Bromodichloromethane	ug/L	5.00	5.61	5.66	112	113	75.0-120	0.887	20	
Bromochloromethane	ug/L	5.00	5.97	6.24	119	125	76.0-122	4.42	20 L	_0
Bromoform	ug/L	5.00	5.66	5.36	113	107	68.0-132	5.44	20	
Bromomethane	ug/L	5.00	5.56	5.63	111	113	10.0-160	1.25	25	
n-Butylbenzene	ug/L	5.00	4.62	4.66	92.4	93.2	73.0-125	0.862	20	
sec-Butylbenzene	ug/L	5.00	4.58	4.70	91.6	94.0	75.0-125	2.59	20	
tert-Butylbenzene	ug/L	5.00	4.46	4.63	89.2	92.6	76.0-124	3.74	20	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE & I	_CSD: R3547			3547423-2						
_		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
Carbon tetrachloride	ug/L	5.00	5.88	5.64	118	113	68.0-126	4.17	20	
Chlorobenzene	ug/L	5.00	6.12	6.19	122	124	80.0-121	1.14	20	L0
Dibromochloromethane	ug/L	5.00	6.06	6.07	121	121	77.0-125	0.165	20	
Chloroethane	ug/L	5.00	5.63	5.44	113	109	47.0-150	3.43	20	
Chloroform	ug/L	5.00	5.46	5.51	109	110	73.0-120	0.912	20	
Chloromethane	ug/L	5.00	5.91	5.82	118	116	41.0-142	1.53	20	
2-Chlorotoluene	ug/L	5.00	4.42	4.49	88.4	89.8	76.0-123	1.57	20	
4-Chlorotoluene	ug/L	5.00	4.07	4.22	81.4	84.4	75.0-122	3.62	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	4.96	4.63	99.2	92.6	58.0-134	6.88	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	5.45	5.55	109	111	80.0-122	1.82	20	
Dibromomethane	ug/L	5.00	5.45	5.40	109	108	80.0-120	0.922	20	
1,2-Dichlorobenzene	ug/L	5.00	5.18	5.10	104		79.0-121	1.56	20	
1,3-Dichlorobenzene	ug/L	5.00	4.95	4.96	99.0	99.2	79.0-120	0.202	20	
1,4-Dichlorobenzene	ug/L	5.00	4.85	5.05	97.0	101	79.0-120	4.04	20	
Dichlorodifluoromethane	ug/L	5.00	7.31	7.18	146	144	51.0-149	1.79	20	
Dichlorofluoromethane	ug/L	5.00	5.91	5.85	118	117	65.0-133	1.02	20	
1,1-Dichloroethane	ug/L	5.00	5.15	5.44	103	109	70.0-126	5.48	20	
1,2-Dichloroethane	Ū	5.00	5.13	5.69	117	114	70.0-120	3.40	20	
•	ug/L						70.0-126			
1,1-Dichloroethene cis-1,2-Dichloroethene	ug/L	5.00	5.38	5.53	108	111	71.0-124	2.75	20	
•	ug/L	5.00	5.30	5.45	106	109		2.79	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.49	5.84	110	117	73.0-120	6.18	20	
1,2-Dichloropropane	ug/L	5.00	4.84	4.78	96.8	95.6	77.0-125	1.25	20	
1,1-Dichloropropene	ug/L	5.00	5.38	5.56	108	111	74.0-126	3.29	20	
1,3-Dichloropropane	ug/L	5.00	4.99	5.17	99.8	103	80.0-120	3.54	20	
cis-1,3-Dichloropropene	ug/L	5.00	4.82	5.01	96.4	100	80.0-123	3.87	20	
rans-1,3-Dichloropropene	ug/L	5.00	5.01	5.05	100	101	78.0-124	0.795	20	
2,2-Dichloropropane	ug/L	5.00	5.46	5.41	109	108	58.0-130	0.920	20	
Ethylbenzene	ug/L	5.00	5.63	5.70	113	114	79.0-123	1.24	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.29	4.49	85.8	89.8	66.0-130	4.56	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.10	5.16	102	103	54.0-138	1.17	20	
sopropylbenzene (Cumene)	ug/L	5.00	5.71	5.84	114	117	76.0-127	2.25	20	
o-Isopropyltoluene	ug/L	5.00	4.64	4.84	92.8	96.8	76.0-125	4.22	20	
2-Butanone (MEK)	ug/L	25.0	25.6	25.8	102	103	44.0-160	0.778	20	
Methylene Chloride	ug/L	5.00	4.61	4.74	92.2	94.8	67.0-120	2.78	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	27.0	27.4	108	110	68.0-142	1.47	20	
Methyl-tert-butyl ether	ug/L	5.00	4.20	4.49	84.0	89.8	68.0-125	6.67	20	
Naphthalene	ug/L	5.00	4.29	4.37	85.8	87.4	54.0-135	1.85	20	
r-Propylbenzene	ug/L	5.00	4.62	4.60	92.4	92.0	77.0-124	0.434	20	
Styrene	ug/L	5.00	5.51	5.60	110		73.0-130	1.62	20	
1,1,1,2-Tetrachloroethane	ug/L	5.00	5.77	5.85	115		75.0-125	1.38	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	4.21	4.36	84.2		65.0-130	3.50	20	
Tetrachloroethene	ug/L	5.00	6.84	6.64	137		72.0-132	2.97	20	LO
Tetrahydrofuran	ug/L	5.00	4.19	4.37	83.8		41.0-146	4.21	20	
Toluene	ug/L	5.00	5.52	5.54	110	111	79.0-120	0.362	20	
1,1,2-Trichlorotrifluoroethane	ug/L ug/L	5.00	6.27	5.82	125		69.0-132	7.44	20	
1,1,2-Trichlorotimuoroethane 1,2,3-Trichlorobenzene	ug/L ug/L	5.00		4.91		98.2	50.0-138	1.23	20	
	uu/L	5.00	4.85	4.91	97.0	30.Z	JU.U-138	1.23	20	

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#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3547	423-1	R	3547423-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.83	5.80	117	116	73.0-124	0.516	20	
1,1,2-Trichloroethane	ug/L	5.00	5.80	5.72	116	114	80.0-120	1.39	20	
Trichloroethene	ug/L	5.00	6.49	6.43	130	129	78.0-124	0.929	20	L0
Trichlorofluoromethane	ug/L	5.00	7.05	6.86	141	137	59.0-147	2.73	20	
1,2,3-Trichloropropane	ug/L	5.00	4.14	4.43	82.8	88.6	73.0-130	6.77	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.11	4.27	82.2	85.4	76.0-121	3.82	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.35	4.64	87.0	92.8	76.0-122	6.45	20	
Vinyl chloride	ug/L	5.00	5.77	5.75	115	115	67.0-131	0.347	20	
Xylene (Total)	ug/L	15.0	16.1	16.6	107	111	79.0-123	3.06	20	
Allyl chloride	ug/L	25.0	27.5	26.9	110	108	72.0-128	2.21	20	
Toluene-d8 (S)	%				107	108	80.0-120			
4-Bromofluorobenzene (S)	%				102	100	77.0-126			
1,2-Dichloroethane-d4 (S)	%				115	110	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

QC Batch: 1506455 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523363017

METHOD BLANK: R3548329-4 Matrix: Water

Associated Lab Samples: 10523363017

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/09/20 20:05	
Benzene	ug/L	ND	1.00	07/09/20 20:05	
Bromobenzene	ug/L	ND	1.00	07/09/20 20:05	
Bromodichloromethane	ug/L	ND	1.00	07/09/20 20:05	
Bromochloromethane	ug/L	ND	1.00	07/09/20 20:05	
Bromoform	ug/L	ND	1.00	07/09/20 20:05	
Bromomethane	ug/L	ND	5.00	07/09/20 20:05	
n-Butylbenzene	ug/L	ND	1.00	07/09/20 20:05	
sec-Butylbenzene	ug/L	ND	1.00	07/09/20 20:05	
tert-Butylbenzene	ug/L	ND	1.00	07/09/20 20:05	
Carbon tetrachloride	ug/L	ND	1.00	07/09/20 20:05	
Chlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
Dibromochloromethane	ug/L	ND	1.00	07/09/20 20:05	
Chloroethane	ug/L	ND	5.00	07/09/20 20:05	
Chloroform	ug/L	ND	5.00	07/09/20 20:05	
Chloromethane	ug/L	ND	2.50	07/09/20 20:05	
2-Chlorotoluene	ug/L	ND	1.00	07/09/20 20:05	
4-Chlorotoluene	ug/L	ND	1.00	07/09/20 20:05	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/09/20 20:05	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/09/20 20:05	
Dibromomethane	ug/L	ND	1.00	07/09/20 20:05	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
Dichlorodifluoromethane	ug/L	ND	5.00	07/09/20 20:05	
Dichlorofluoromethane	ug/L	ND	5.00	07/09/20 20:05	
1,1-Dichloroethane	ug/L	ND	1.00	07/09/20 20:05	
1,2-Dichloroethane	ug/L	ND	1.00	07/09/20 20:05	
1,1-Dichloroethene	ug/L	ND	1.00	07/09/20 20:05	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/09/20 20:05	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/09/20 20:05	
1,2-Dichloropropane	ug/L	ND	1.00	07/09/20 20:05	
1,1-Dichloropropene	ug/L	ND	1.00	07/09/20 20:05	
1,3-Dichloropropane	ug/L	ND	1.00	07/09/20 20:05	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/09/20 20:05	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/09/20 20:05	
2,2-Dichloropropane	ug/L	ND	1.00	07/09/20 20:05	
Ethylbenzene	ug/L	ND	1.00	07/09/20 20:05	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/09/20 20:05	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/09/20 20:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

METHOD BLANK: R3548329-4 Matrix: Water

Associated Lab Samples: 10523363017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/09/20 20:05	
p-Isopropyltoluene	ug/L	ND	1.00	07/09/20 20:05	
2-Butanone (MEK)	ug/L	ND	10.0	07/09/20 20:05	
Methylene Chloride	ug/L	ND	5.00	07/09/20 20:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/09/20 20:05	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/09/20 20:05	
Naphthalene	ug/L	ND	5.00	07/09/20 20:05	
n-Propylbenzene	ug/L	ND	1.00	07/09/20 20:05	
Styrene	ug/L	ND	1.00	07/09/20 20:05	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/09/20 20:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/09/20 20:05	
Tetrachloroethene	ug/L	ND	1.00	07/09/20 20:05	
Tetrahydrofuran	ug/L	ND	5.00	07/09/20 20:05	
Toluene	ug/L	ND	1.00	07/09/20 20:05	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/09/20 20:05	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/09/20 20:05	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/09/20 20:05	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/09/20 20:05	
Trichloroethene	ug/L	ND	1.00	07/09/20 20:05	
Trichlorofluoromethane	ug/L	ND	5.00	07/09/20 20:05	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/09/20 20:05	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/09/20 20:05	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/09/20 20:05	
Vinyl chloride	ug/L	ND	1.00	07/09/20 20:05	
Xylene (Total)	ug/L	ND	3.00	07/09/20 20:05	
Allyl chloride	ug/L	ND	5.00	07/09/20 20:05	
Toluene-d8 (S)	%	95.5	80.0-120	07/09/20 20:05	
4-Bromofluorobenzene (S)	%	86.6	77.0-126	07/09/20 20:05	
1,2-Dichloroethane-d4 (S)	%	95.3	70.0-130	07/09/20 20:05	

LABORATORY CONTROL SAMPLE & LCSD: R3548329-1 R3548329-2										
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	28.8	29.7	115	119	19.0-160	3.08	27	
Benzene	ug/L	5.00	5.17	4.98	103	99.6	70.0-123	3.74	20	
Bromobenzene	ug/L	5.00	5.13	4.90	103	98.0	73.0-121	4.59	20	
Bromodichloromethane	ug/L	5.00	5.17	4.75	103	95.0	75.0-120	8.47	20	
Bromochloromethane	ug/L	5.00	5.42	5.34	108	107	76.0-122	1.49	20	
Bromoform	ug/L	5.00	4.64	4.35	92.8	87.0	68.0-132	6.45	20	
Bromomethane	ug/L	5.00	6.72	6.36	134	127	10.0-160	5.50	25	
n-Butylbenzene	ug/L	5.00	4.92	4.78	98.4	95.6	73.0-125	2.89	20	
sec-Butylbenzene	ug/L	5.00	4.93	5.05	98.6	101	75.0-125	2.40	20	
tert-Butylbenzene	ug/L	5.00	4.85	4.85	97.0	97.0	76.0-124	0.00	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3548		R3548329-2							
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
Carbon tetrachloride	ug/L	5.00	4.91	5.15	98.2	103	68.0-126	4.77	20	
Chlorobenzene	ug/L	5.00	5.02	4.72	100	94.4	80.0-121	6.16	20	
Dibromochloromethane	ug/L	5.00	4.95	4.54	99.0	90.8	77.0-125	8.64	20	
Chloroethane	ug/L	5.00	6.50	6.54	130	131	47.0-150	0.613	20	
Chloroform	ug/L	5.00	5.03	4.94	101	98.8	73.0-120	1.81	20	
Chloromethane	ug/L	5.00	4.18	4.19	83.6	83.8	41.0-142	0.239	20	
2-Chlorotoluene	ug/L	5.00	4.92	4.88	98.4	97.6	76.0-123	0.816	20	
1-Chlorotoluene	ug/L	5.00	5.03	4.95	101	99.0	75.0-122	1.60	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	5.03	4.74	101	94.8	58.0-134	5.94	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	4.97	4.83	99.4	96.6	80.0-122	2.86	20	
Dibromomethane	ug/L	5.00	5.34	5.15	107	103	80.0-120	3.62	20	
1,2-Dichlorobenzene	ug/L	5.00	4.90	4.90	98.0	98.0	79.0-121	0.00	20	
1,3-Dichlorobenzene	ug/L	5.00	5.11	5.02	102	100	79.0-120	1.78	20	
I,4-Dichlorobenzene	ug/L	5.00	4.90	4.91	98.0	98.2	79.0-120	0.204	20	
Dichlorodifluoromethane	ug/L	5.00	5.60	5.33			51.0-149	4.94	20	
Dichlorofluoromethane	ug/L	5.00	6.19	6.09		122	65.0-133	1.63	20	
I.1-Dichloroethane	ug/L	5.00	5.21	4.84		96.8	70.0-126	7.36	20	
,2-Dichloroethane	ug/L	5.00	5.22	5.06		101	70.0-128	3.11	20	
,1-Dichloroethene	ug/L	5.00	5.39	5.12			71.0-124	5.14	20	
cis-1,2-Dichloroethene	ug/L	5.00	5.35	5.10				4.78	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.25	4.94		98.8	73.0-120	6.08	20	
I,2-Dichloropropane	ug/L	5.00	5.33	5.29		106	77.0-125	0.753	20	
,1-Dichloropropene	ug/L	5.00	5.18	5.10		102	74.0-126	1.56	20	
,3-Dichloropropane	ug/L	5.00	5.29	4.82		96.4	80.0-120	9.30	20	
cis-1,3-Dichloropropene	ug/L	5.00	4.92	4.86		97.2		1.23	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.83	4.45		89.0	78.0-124	8.19	20	
2,2-Dichloropropane	ug/L	5.00	4.84	4.64		92.8	58.0-130	4.22	20	
Ethylbenzene	ug/L	5.00	4.97	4.49		89.8	79.0-123	10.1	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	6.11	6.02		120	66.0-130	1.48	20	
Hexachloro-1,3-butadiene	ug/L	5.00	4.68	4.69			54.0-138	0.213	20	
sopropylbenzene (Cumene)	ug/L	5.00	4.90	4.60			76.0-127	6.32	20	
o-Isopropyltoluene	ug/L	5.00	4.97	4.87	99.4	97.4	76.0-125	2.03	20	
2-Butanone (MEK)	ug/L	25.0	26.8	27.6		110	44.0-160	2.94	20	
Methylene Chloride	ug/L	5.00	5.22	5.18		104	67.0-120	0.769	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	26.8	26.0		104	68.0-142	3.03	20	
Methyl-tert-butyl ether	ug/L	5.00	5.07	4.73		94.6	68.0-125	6.94	20	
Naphthalene	ug/L	5.00	4.66	4.66		93.2		0.00	20	
n-Propylbenzene	ug/L	5.00	5.08	4.91	102		77.0-124	3.40	20	
Styrene	ug/L	5.00	4.88	4.72			73.0-124	3.33	20	
,1,1,2-Tetrachloroethane	ug/L	5.00	4.82	4.72			75.0-130 75.0-125	4.02	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	5.18	5.38			65.0-120	3.79	20	
Tetrachloroethene	ug/L	5.00	5.01	4.76			72.0-132	5.12	20	
Tetrahydrofuran	ug/L	5.00	5.73	5.76			41.0-146	0.522	20	
Toluene	ug/L	5.00	4.92	4.58			79.0-120	7.16	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.16	4.72				8.91	20	
I,2,3-Trichlorobenzene	ug/L	5.00	4.75	4.89			50.0-138	2.90	20	
1,2,4-Trichlorobenzene	ug/L	5.00	4.83	4.94	96.6	98.8	57.0-137	2.25	20	

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(612)607-1700



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3548	329-1	R	3548329-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.16	4.85	103	97.0	73.0-124	6.19	20	
1,1,2-Trichloroethane	ug/L	5.00	5.29	5.00	106	100	80.0-120	5.64	20	
Trichloroethene	ug/L	5.00	4.99	4.95	99.8	99.0	78.0-124	0.805	20	
Trichlorofluoromethane	ug/L	5.00	6.70	6.14	134	123	59.0-147	8.72	20	
1,2,3-Trichloropropane	ug/L	5.00	5.38	5.67	108	113	73.0-130	5.25	20	
1,2,4-Trimethylbenzene	ug/L	5.00	5.10	4.86	102	97.2	76.0-121	4.82	20	
1,3,5-Trimethylbenzene	ug/L	5.00	5.09	4.91	102	98.2	76.0-122	3.60	20	
Vinyl chloride	ug/L	5.00	5.40	5.24	108	105	67.0-131	3.01	20	
Xylene (Total)	ug/L	15.0	14.4	13.8	96.0	92.0	79.0-123	4.26	20	
Allyl chloride	ug/L	25.0	26.0	25.8	104	103	72.0-128	0.772	20	
Toluene-d8 (S)	%				94.5	93.7	80.0-120			
4-Bromofluorobenzene (S)	%				88.7	88.6	77.0-126			
1,2-Dichloroethane-d4 (S)	%				102	99.7	70.0-130			

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

QC Batch: 1505870 Analysis Method: EPA 8260D

QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523363006, 10523363008, 10523363009, 10523363010, 10523363011, 10523363012

METHOD BLANK: R3547929-4 Matrix: Solid

Associated Lab Samples: 10523363006, 10523363008, 10523363009, 10523363010, 10523363011, 10523363012

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	 	ND	0.0500	07/09/20 13:27	
Benzene	mg/kg	ND	0.00100	07/09/20 13:27	
Bromobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Bromodichloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Bromochloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Bromoform	mg/kg	ND	0.00100	07/09/20 13:27	
Bromomethane	mg/kg	ND	0.00500	07/09/20 13:27	
n-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
sec-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
tert-Butylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Carbon tetrachloride	mg/kg	ND	0.00100	07/09/20 13:27	
Chlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Dibromochloromethane	mg/kg	ND	0.00100	07/09/20 13:27	
Chloroethane	mg/kg	ND	0.00500	07/09/20 13:27	
Chloroform	mg/kg	ND	0.00500	07/09/20 13:27	
Chloromethane	mg/kg	ND	0.00250	07/09/20 13:27	
2-Chlorotoluene	mg/kg	ND	0.00100	07/09/20 13:27	
4-Chlorotoluene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	07/09/20 13:27	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	07/09/20 13:27	
Dibromomethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Dichlorodifluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
Dichlorofluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
1,1-Dichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	07/09/20 13:27	
2,2-Dichloropropane	mg/kg	ND	0.00100	07/09/20 13:27	
Ethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	07/09/20 13:27	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	07/09/20 13:27	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

METHOD BLANK: R3547929-4 Matrix: Solid

Associated Lab Samples: 10523363006, 10523363008, 10523363009, 10523363010, 10523363011, 10523363012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
					— Qualifiers
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	07/09/20 13:27	
p-Isopropyltoluene	mg/kg	ND	0.00100	07/09/20 13:27	
2-Butanone (MEK)	mg/kg	ND	0.0100	07/09/20 13:27	
Methylene Chloride	mg/kg	ND	0.00500	07/09/20 13:27	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	07/09/20 13:27	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	07/09/20 13:27	
Naphthalene	mg/kg	ND	0.00500	07/09/20 13:27	
n-Propylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Styrene	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
Tetrachloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
Tetrahydrofuran	mg/kg	ND	0.00500	07/09/20 13:27	
Toluene	mg/kg	ND	0.00500	07/09/20 13:27	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	07/09/20 13:27	
Trichloroethene	mg/kg	ND	0.00100	07/09/20 13:27	
Trichlorofluoromethane	mg/kg	ND	0.00500	07/09/20 13:27	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	07/09/20 13:27	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	07/09/20 13:27	
Vinyl chloride	mg/kg	ND	0.00100	07/09/20 13:27	
Xylene (Total)	mg/kg	ND	0.00300	07/09/20 13:27	
Allyl chloride	mg/kg	ND	0.00500	07/09/20 13:27	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	0.100	07/09/20 13:27	
Toluene-d8 (S)	%	93.8	75.0-131	07/09/20 13:27	
4-Bromofluorobenzene (S)	%	96.3	67.0-138	07/09/20 13:27	
1,2-Dichloroethane-d4 (S)	%	109	70.0-130	07/09/20 13:27	

LABORATORY CONTROL SAMPLE	& LCSD: R35479	929-1	R	3547929-2			•			
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	mg/kg	0.125	0.122	0.128	97.6	102	10.0-160	4.80	31	
Benzene	mg/kg	0.0250	0.0265	0.0274	106	110	70.0-123	3.34	20	
Bromobenzene	mg/kg	0.0250	0.0240	0.0251	96.0	100	73.0-121	4.48	20	
Bromodichloromethane	mg/kg	0.0250	0.0281	0.0291	112	116	73.0-121	3.50	20	
Bromochloromethane	mg/kg	0.0250	0.0270	0.0280	108	112	77.0-128	3.64	20	
Bromoform	mg/kg	0.0250	0.0275	0.0287	110	115	64.0-132	4.27	20	
Bromomethane	mg/kg	0.0250	0.0319	0.0322	128	129	56.0-147	0.936	20	
n-Butylbenzene	mg/kg	0.0250	0.0260	0.0268	104	107	68.0-135	3.03	20	
sec-Butylbenzene	mg/kg	0.0250	0.0255	0.0262	102	105	74.0-130	2.71	20	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3547			3547929-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
ert-Butylbenzene	mg/kg	0.0250	0.0262	0.0269	105	108	75.0-127	2.64	20	
Carbon tetrachloride	mg/kg	0.0250	0.0314	0.0316	126	126	66.0-128	0.635	20	
Chlorobenzene	mg/kg	0.0250	0.0254	0.0261	102	104	76.0-128	2.72	20	
Dibromochloromethane	mg/kg	0.0250	0.0270	0.0277	108	111	74.0-127	2.56	20	
Chloroethane	mg/kg	0.0250	0.0325	0.0326	130	130	61.0-134	0.307	20	
Chloroform	mg/kg	0.0250	0.0274	0.0284	110	114	72.0-123	3.58	20	
Chloromethane	mg/kg	0.0250	0.0238	0.0240	95.2	96.0	51.0-138	0.837	20	
2-Chlorotoluene	mg/kg	0.0250	0.0252	0.0263	101	105	75.0-124	4.27	20	
4-Chlorotoluene	mg/kg	0.0250	0.0253	0.0261	101	104	75.0-124	3.11	20	
1,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0232	0.0263	92.8	105	59.0-130	12.5	20	
1,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0248	0.0254	99.2	102	74.0-128	2.39	20	
Dibromomethane	mg/kg	0.0250	0.0275	0.0284	110	114	75.0-122	3.22	20	
1,2-Dichlorobenzene	mg/kg	0.0250	0.0249	0.0259		104	76.0-124	3.94	20	
1,3-Dichlorobenzene	mg/kg	0.0250	0.0249	0.0257	99.6	103	76.0-125	3.16	20	
1,4-Dichlorobenzene	mg/kg	0.0250	0.0255	0.0268		107	77.0-121	4.97	20	
Dichlorodifluoromethane	mg/kg	0.0250	0.0307	0.0292		117	43.0-156	5.01	20	
Dichlorofluoromethane	mg/kg	0.0250	0.0293	0.0298		119	65.0-137	1.69	20	
1,1-Dichloroethane	mg/kg	0.0250	0.0273	0.0279			70.0-127	2.17	20	
1,2-Dichloroethane	mg/kg	0.0250	0.0282	0.0288		115	65.0-131	2.11	20	
1,1-Dichloroethene	mg/kg	0.0250	0.0282	0.0282		113	65.0-131	0.00	20	
cis-1,2-Dichloroethene	mg/kg	0.0250	0.0271	0.0275			73.0-125	1.47	20	
rans-1,2-Dichloroethene	mg/kg	0.0250	0.0271	0.0273			71.0-125	2.90	20	
1,2-Dichloropropane	mg/kg	0.0250	0.0272	0.0265		106	74.0-125	3.45	20	
1,1-Dichloropropene	mg/kg	0.0250	0.0230	0.0203	111		73.0-125	0.719	20	
, 1-Dichloropropene	mg/kg	0.0250	0.0277	0.0279	97.2	98.8	80.0-125	1.63	20	
		0.0250	0.0243	0.0247	109	111	76.0-127	1.82	20	
cis-1,3-Dichloropropene	mg/kg									
rans-1,3-Dichloropropene	mg/kg	0.0250	0.0266	0.0273		109	73.0-127	2.60	20	
2,2-Dichloropropane	mg/kg	0.0250	0.0302	0.0308		123	59.0-135	1.97	20	
Ethylbenzene	mg/kg	0.0250	0.0263	0.0265		106	74.0-126	0.758	20	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0258	0.0258		103	64.0-137	0.00	20	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0311	0.0317		127	57.0-150	1.91	20	
sopropylbenzene (Cumene)	mg/kg	0.0250	0.0269	0.0270		108	72.0-127	0.371	20	
o-Isopropyltoluene	mg/kg	0.0250	0.0272	0.0274		110	72.0-133	0.733	20	
2-Butanone (MEK)	mg/kg	0.125	0.115	0.121	92.0	96.8	30.0-160	5.08	24	
Methylene Chloride	mg/kg	0.0250	0.0250	0.0254		102		1.59	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.114	0.121	91.2	96.8	56.0-143	5.96	20	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0256	0.0271	102	108	66.0-132	5.69	20	
Naphthalene	mg/kg	0.0250	0.0244	0.0265			59.0-130	8.25	20	
n-Propylbenzene	mg/kg	0.0250	0.0254	0.0261	102		74.0-126	2.72	20	
Styrene	mg/kg	0.0250	0.0255	0.0265			72.0-127	3.85	20	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0262	0.0270			74.0-129	3.01	20	
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0218	0.0238	87.2		68.0-128	8.77	20	
Tetrachloroethene	mg/kg	0.0250	0.0276	0.0281	110		70.0-136	1.80	20	
Tetrahydrofuran	mg/kg	0.0250	0.0221	0.0225	88.4	90.0	37.0-146	1.79	24	
Toluene	mg/kg	0.0250	0.0240	0.0247	96.0	98.8	75.0-121	2.87	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0289	0.0292	116	117	61.0-139	1.03	20	
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0278	0.0301	111	120	59.0-139	7.94	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

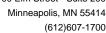
Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	E & LCSD: R35479	929-1	R	3547929-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0287	0.0298	115	119	62.0-137	3.76	20	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0312	0.0315	125	126	69.0-126	0.957	20	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0237	0.0247	94.8	98.8	78.0-123	4.13	20	
Trichloroethene	mg/kg	0.0250	0.0280	0.0285	112	114	76.0-126	1.77	20	
Trichlorofluoromethane	mg/kg	0.0250	0.0327	0.0326	131	130	61.0-142	0.306	20	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0249	0.0264	99.6	106	67.0-129	5.85	20	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0254	0.0259	102	104	70.0-126	1.95	20	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0257	0.0266	103	106	73.0-127	3.44	20	
Vinyl chloride	mg/kg	0.0250	0.0287	0.0292	115	117	63.0-134	1.73	20	
Xylene (Total)	mg/kg	0.0750	0.0773	0.0789	103	105	72.0-127	2.05	20	
Allyl chloride	mg/kg	0.125	0.133	0.136	106	109	70.0-131	2.23	20	
Toluene-d8 (S)	%				93.9	94.8	75.0-131			
4-Bromofluorobenzene (S)	%				98.4	99.9	67.0-138			
1,2-Dichloroethane-d4 (S)	%				116	121	70.0-130			

LABORATORY CONTROL SAMPLE:	R3547929-3					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg	1.00	1.15	115	18.0-160	
Toluene-d8 (S)	%			93.3	75.0-131	
4-Bromofluorobenzene (S)	%			97.1	67.0-138	
1,2-Dichloroethane-d4 (S)	%			106	70.0-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

QC Batch: 685081 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363013, 10523363014,

10523363015, 10523363016, 10523363017

METHOD BLANK: 3664339 Matrix: Water

Associated Lab Samples: 10523363001, 10523363002, 10523363003, 10523363004, 10523363005, 10523363013, 10523363014,

10523363015, 10523363016, 10523363017

Blank Reporting Parameter Units Result Analyzed Qualifiers Limit 1,4-Dioxane (SIM) ug/L ND 0.25 07/08/20 12:54 1,4-Dioxane-d8 (S) 50 07/08/20 12:54 %. 30-125

LABORATORY CONTROL SAMPLE & I	LCSD: 3664340		36	664341						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,4-Dioxane (SIM)	ug/L	10	10.9	10.8	109	108	32-128	1	20	
1,4-Dioxane-d8 (S)	%.				38	41	30-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



**QUALITY CONTROL DATA** 

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

QC Batch: 1505471 Analysis Method: SM 2540G

QC Batch Method: SM 2540 G Analysis Description: Total Solids 2540 G-2011

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523363006, 10523363009, 10523363010, 10523363011, 10523363012

METHOD BLANK: R3547903-1 Matrix: Solid

Associated Lab Samples: 10523363006, 10523363009, 10523363010, 10523363011, 10523363012

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Solids % 0.00100 07/08/20 23:24

LABORATORY CONTROL SAMPLE: R3547903-2

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Solids** % 50.0 50.0 100 85.0-115

SAMPLE DUPLICATE: R3547903-3

Date: 07/13/2020 04:36 PM

L1235860-41 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers **Total Solids** 84.0 % 83.9 0.128 10

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **ANALYTE QUALIFIERS**

Date: 07/13/2020 04:36 PM

CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

MH Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased

high

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the

spike level.



#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523363

Date: 07/13/2020 04:36 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
10523363001	GP-37 (15-18)	EPA 3010A	684710	EPA 6010D	684975
10523363002	GP-37 (23-26)	EPA 3010A	684710	EPA 6010D	684975
0523363003	GP-37 (31-34)	EPA 3010A	684710	EPA 6010D	684975
0523363004	Dup 062920	EPA 3010A	684710	EPA 6010D	684975
0523363005	GP-37 (38-40)	EPA 3010A	684710	EPA 6010D	684975
0523363013	GP-43 (6-9)	EPA 3010A	684710	EPA 6010D	684975
0523363014	GP-43 (14-17)	EPA 3010A	684710	EPA 6010D	684975
0523363015	GP-43 (22-25)	EPA 3010A	684710	EPA 6010D	684975
0523363016	GP-43 (30-33)	EPA 3010A	684710	EPA 6010D	684975
0523363017	GP-43 (38-40)	EPA 3010A	684710	EPA 6010D	684975
0523363001	GP-37 (15-18)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363002	GP-37 (23-26)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363003	GP-37 (31-34)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363004	Dup 062920	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363005	GP-37 (38-40)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363013	GP-43 (6-9)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363014	GP-43 (14-17)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363015	GP-43 (22-25)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363016	GP-43 (30-33)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363017	GP-43 (38-40)	EPA Mod. 3510C	685081	EPA 8270E by SIM	685464
0523363001	GP-37 (15-18)	8260D	1503961	EPA 8260D	1503961
0523363002	GP-37 (23-26)	8260D	1503961	EPA 8260D	1503961
0523363003	GP-37 (31-34)	8260D	1503961	EPA 8260D	1503961
0523363004	Dup 062920	8260D	1503961	EPA 8260D	1503961
0523363005	GP-37 (38-40)	8260D	1503961	EPA 8260D	1503961
0523363007	Water Trip Blanks	8260D	1503961	EPA 8260D	1503961
0523363013	GP-43 (6-9)	8260D	1503961	EPA 8260D	1503961
0523363014	GP-43 (14-17)	8260D	1503961	EPA 8260D	1503961
0523363015	GP-43 (22-25)	8260D	1503961	EPA 8260D	1503961
0523363016	GP-43 (30-33)	8260D	1504675	EPA 8260D	1504675
0523363017	GP-43 (38-40)	8260D	1506455	EPA 8260D	1506455
0523363006	GP-38 (3-4)	5035A	1505870	EPA 8260D	1505870
0523363008	Soil Trip Blanks	5035A	1505870	EPA 8260D	1505870
0523363009	GP-39 (3-4)	5035A	1505870	EPA 8260D	1505870
0523363010	GP-40 (3-4)	5035A	1505870	EPA 8260D	1505870
0523363011	GP-41 (3-4)	5035A	1505870	EPA 8260D	1505870
0523363012	GP-42 (3-4)	5035A	1505870	EPA 8260D	1505870
0523363006	GP-38 (3-4)	SM 2540 G	1505471	SM 2540G	1505471
0523363009	GP-39 (3-4)	SM 2540 G	1505471	SM 2540G	1505471
0523363010	GP-40 (3-4)	SM 2540 G	1505471	SM 2540G	1505471
0523363011	GP-41 (3-4)	SM 2540 G	1505471	SM 2540G	1505471
0523363012	GP-42 (3-4)	SM 2540 G	1505471	SM 2540G	1505471

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section D Valid Matrix	Codes	(dp				П						N /×						TIT				
Required Client Information MATRIX  DRINKING WATER	Codes (Jet of sep of with the codes of sep o	C=COMP)	COLL	ECTED		z			Prese	rvativ	/es	_  ≥		-	$\bot$	-111				<del> </del>		
WATER WASTE WATER PRODUCT SOIL/SOLID OIL	W1 WW F St. Ot. See valid cod	AB C	OMPOSITE START	COMPOSI END/GRA	re B	COLLECTION	S							- 6	००		10	#:	10	52	336	3
SAMPLE ID WIPE AIR OTHER Sample IDS MUST BE UNIQUE TISSUE	AR EI OO	ΥPE				темр ат	CONTAINERS	Unpreserved			. Jou	Veis Test		1,4-Dioxame	isture		<b>052</b>	3363				
ITEM#	MATRIX	SAMPLE	E TIME	DATE	TIME	SAMPLE	# OF C	Unpre	HOSO4	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methano	Other Analysi	Š	7	Us solved Moist					K.J. ————	e Project N	lo./ Lab I.D.
1 GP-37/15-18\	w	G 6/29	120 1300				9	X	X				X							LUI:	200100	4891 WI
2 GP-37 (23-26)	w	6 6/29	120 1340					X	,	4		Ш	X	X ;	<u> </u>						200/004	1891 WZ
3 (37-37 (31-34)	רש'	G 6/29	128 1430		1		9	X				Ш	2	X	x.						200 600 48	
4 DWP 062920"	W	G 6/29	120 -				9	X	X				x	X)	<u> </u>					1 2	0010048	
5 GP-37/38-401	W	6 6/29/	20 1450				9	X	<u> </u>				X	× )	Κ.						20010048	91 WS
6 GP-38 (3-4)	SL	G 6/29	120 1650				5	X			X		X	X	X					ا صلاعا	2001004	2548
7 Water frip blanks												Ш	X	X			$\bot$				<u> </u>	
8 Soil trip blanks								Ш				Ш	X	X				11			~ ಬಕ	
9 GP-39 (3-4)	ياد	G 6/29	ho 1735				5	1			人	Ш		X	×				$\perp \perp$			484 WG
10 (GP-40 (3-4) / MS/MS	d Isl	G 6/30	120 740				٩	X			X	Ш	X	1	*				$\perp \perp$		00 100 5	
11 GP-41 (3-4)	SL	G 6/3	0/20 830				5	N			X		X	X	X						00 100 54	
12 GP-42 (3-4)	si	G. 6/30	120 900				2	K			X.		<u> </u>	X	×					<u> 2</u>	0010059	187 012
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# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

www.pacelebs.ccm	Section B	ı	Section C			Page:	2	of	2	
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impany:	Report To: Shane Waterman	i 1	Attention: accounting @ Company Name:	mench com	REGULATORY AG	ENCY				
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200 green might and the work : com	Project Name: Water Grewlin SR	τ_	Pace Project Manager:		Site Location	MN				
K/1 ~ 1/0 ~ 207/	Project Number: 2606 - 0017		Pace Profile #:		STATE:	4.114	_			*****
equested Due Date/TAT: Standard	Project Notified. Zeoo 2 86 (			Requested	Analysis Filtered	Y/N)				
	· · · · · · · · · · · · · · · · · · ·									
Section D   Required Client Information	CODE 9 90 COLLECTED  WW 90 90 S 90 COMPOSITE START COMPOSITE ENDIGRAB  SI 001 SO SO START START START  NH 15 OO D B B B B B B B B B B B B B B B B B	SAMPLE TEMP AT COLLECTION	on Tainer of the state of the s	Analysis Test VIII    Analysis Test   VIII			Residual Chlorine (Y/N)	2	0010048	Lab I.D. 1892 ()3 892 ()4 1992 ()5 1892 ()5
8		+	<del></del>					· · · · · · · · · · · · · · · · · · ·		
9		+				111	$\perp$			
10		<del>                                     </del>	<del>-                                     </del>	11 (14) 12 (14)						
11		+1-+						<u> </u>		
12		DATE	TIME ACCEPT	ED BY / AFFILIATION	N DATE	TIME		SAMPLE	CONDITIO	NS
ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION			. /		1530				
ADissopred lead samples need	Ben Holumb/WAI	6/30 po				1600	3.1	V	N	Y
+ Discourse tent southes to a	7	.	RHL1	face	6/30/10	1600	1.4_	<del>                                     </del>	<del>-  </del>	<del>`</del>
lab filtered x		1						<del>                                     </del>	+	
							i .			
Page 63 of 70	SAMPLER NAME AN PRINT Name	e of SAMPL	ATURE PLER: Benjamin Holcomb PLER: Pen Holcomb	/ Watt Ci DATE Sig (MM/DDA	Fle. 16  gned  yy): 06/30/20	erin erin erin erin erin erin erin erin	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
70	Sidiktok		Wyst sil	T Amazon			·Ai.Ŀ-Q-	.020rev.07, 15	5-Feb-2007	



#### **Document Name:**

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Page 1 of 1

Pace Analytical Services -Minneapolis

Page 64 of 70

Labeled by: CFG

Document Revised: 27Mar2020

ENV-FRM-MIN4-0150 Rev.00

Sample Condition **Client Name:** Project #: WO#: 10523363 **Upon Receipt** WewcK Due Date: 07/08/20 Courier: Fed Ex □UPS □USPS Client CLIENT: WENCK SpeeDee Commercial See Exceptions **Tracking Number: Custody Seal on Cooler/Box Present?** Yes No Seals Intact? Yes ⊠No Biological Tissue Frozen? Yes No ANA Packing Material: | Bubble Wrap Bubble Bags None Other: Yes Temp Blank? ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Type of Ice: ∕ØWet ☐Blue ■ None Melted T4(0254) 🔲 T5(0489) Did Samples Originate in West Virginia? ☐Yes ☐No Were All Container Temps Taken? ☐Yes ☐No ☐N/A Cooler Temp Read w/temp blank: 3./ Temp should be above freezing to 6°C ٥C **Average Corrected Temp** (no temp blank only): See Exceptions Cooler Temp Corrected w/temp blank: **Correction Factor:** ☐1 Container USDA Regulated Soil: ( N/A, water sample/Other:\_ **Date/Initials of Person Examining Contents:** Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Hawaii and Puerto Rico)? □No □No Yes If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: Chain of Custody Present and Filled Out? ZYes □No 1. Chain of Custody Relinquished? Yes □No 2. Sampler Name and/or Signature on COC? ☑Yes □No □N/A 3. Samples Arrived within Hold Time? Yes □No 4. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome Short Hold Time Analysis (<72 hr)? □Yes ✓No ☐Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other\_ **Rush Turn Around Time Requested?** ☐Yes\_ Ø№ 6. Sufficient Volume? **√**ÎYes 7. □No. **Correct Containers Used?** Yes □No 8. -Pace Containers Used? No **Containers Intact?** 9. Yes □No Field Filtered Volume Received for Dissolved Tests? ∐Yes □No 10. Is sediment visible in the dissolved container? Yes No **∄**N/A is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? ∠Yes □No Matrix: Water Soil Oil Other All containers needing acid/base preservation have been 12. Sample # **Z**ÎN/A ☐ Yes □No checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO<sub>3</sub> ☐H<sub>2</sub>SO<sub>4</sub> ∐Yes □No **☑**Ń/A Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception Yes Exceptions: (VOA), Coliform, TOC/DOC Oil and Grease, ΠNo □N/A Chlorine? Πo pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. Yes See Exception □No □N/A Headspace in VOA Vials (greater than 6mm)? Yes □N/A ZNo Trip Blank Present? .**⊠**Yes □No □N/A Pace Trip Blank Lot # (if purchased): 260864 051870-3 **Trip Blank Custody Seals Present? ⊿**Yes □No □N/A **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No K Jaworski Person Contacted: Date/Time: 7/1/2020 1637 Client requested VOC and 1,4 dioxane on the soil samples. Comments/Resolution: **Project Manager Review:** 7/1/2020 Date: Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

## Chain of Custody

Samples	were	sent	directly	to	the	Subcontracting	Laboratory	٧.

PS

6/30/2020 14:45

10523363017

State Of Origin: MN

Cert. Needed: x Yes No Workorder Name: 2606-0017 Water Gremlin SRI Owner Received Date: 6/30/2020 Results Requested By: 7/8/2020 Workorder: 10523363 Report To Requested Analysis Subcontract To Annika Asp & VOC by 8260DAP9 (PN) Pace National Pace Analytical Minnesota 1700 Elm Street 12065 Lebanon Road Suite 200 Mt Juliet TN 37122 Minneapolis MN 55414 Phone (612)607-1700 VOC by 8260D Moisture (Pace Preserved Containers 1,4 Dioxane V&BBH DWE VG9U VG路 Sample Collect LAB USE ONLY Item | Sample ID Date/Time Lab ID Matrix Type X GP-37 (15-18) PS 6/29/2020 13:00 10523363001 3 3 Water 01 GP-37 (23-26) PS 6/29/2020 13:40 10523363002 Water 3 3 X or 03 3 X GP-37 (31-34) PS 6/29/2020 14:30 10523363003 Water 3 21 X PS 6/29/2020 00:00 10523363004 Water 3 3 Dup 062920 X GP-37 (38-40) PS 6/29/2020 14:50 10523363005 Water 3 3 85 06 X GP-38 (3-4) PS 6/29/2020 16:50 X 10523363006 Solid 4 X Water Trip Blanks PS 6/29/2020 00:00 10523363007 Water 4 87 B Soil Trip Blanks PS 6/29/2020 00:00 10523363008 Solid 2 X X 09 GP-39 (3-4) PS 6/29/2020 17:35 10523363009 Solid 4 X X X GP-40 (3-4) 8 RQS 6/30/2020 07:40 10523363010 Solid 60 X X GP-41 (3-4) PS 6/30/2020 08:30 10523363011 Solid 4 12 GP-42 (3-4) PS 4 X X 6/30/2020 09:00 10523363012 Solid 12 13 GP-43 (6-9) PS 10523363013 X 6/30/2020 10:30 Water 3 13 3 3 X GP-43 (14-17) PS 6/30/2020 11:30 10523363014 Water 3 GP-43 (22-25) PS 3 X 6/30/2020 12:40 10523363015 Water 3 16 16 GP-43 (30-33) PS 6/30/2020 13:50 10523363016 Water 3 3 X

3

3

Water

Wednesday, July 01, 2020 3:18:06 PM

GP-43 (38-40)

FMT-ALL-C-002rev.00 24March2009

Page 1 of 2

Pace Analytical

www.pacelabs.com

			NEW YORK WAS A SECOND			Comments	
Transfers	Released By	Date/Time	Received By	Date/Time			
1	Wel Place	7/1/20 162	5			s included due to effervescing.	
2			0,11.	1, 0	*HOLD SL VOC,	run 1,4 dioxane,	
3			L. Weht	7/2/20 88.9	5		
Cooler Te	emperature on Receipt 30 °	C Custo	dy Seal (Y) or N	Received on Ice	(Y)/or N	Samples Intact Y or N	

3.0±0=3.0 my

F192

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory/320 7500 85/0/8509

Pace Analytical National Center for	Testing & Innov	ration	
Cooler Receipt Fo			
		1235	812
Client: YACEN		(-5)	066
Cooler Received/Opened On: 7 / 2 / 20	Temperature:	3.0	
Received By: Lakeacher Webster			
Signature: V. Weht			
	TO SHAP THE BUILDING		
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		/	
COC Signed / Accurate?			
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?		DESCRIPTION OF THE PARTY OF THE	

L123586Z

Chain of Custody A084 State Of Origin: MN Samples were sent directly to the Subcontracting Laboratory. x Yes No Cert Needed: Workorder Name: 2606-0017 Water Gremlin SRI Owner Received Date: 6/30/2020 Results Requested By: 7/8/2020 Workorder: 10523363 Requested Analysis Subcontract To Report To Annika Asp Pace National Pace Analytical Minnesota 12065 Lebanon Road 1700 Elm Street 8260DAP9 National) Mt. Juliet TN 37122 Suite 200 (Nd) 009 Minneapolis, MN 55414 Phone (612)607-1700 & VOC Moisture (Pa voc t Preserved Containers Dioxane V&BBH VG9U VG的 Sample Collect LAB USE ONLY Matrix Date/Time Lab ID Item Sample ID Type 6/29/2020 13:00 10523303001 3 3 10523363002 Water PS 6/29/2020 13:40 GP-37 (23-26) 3 3 PS 6/29/2020 14:30 10523363003 Water GP-37 (31-34) 3 3 10523363004 6/29/2020 00:00 Water Dup 062920 3 3 6/29/2020 14:50 10523363005 Water GP-37 (38-40) X X Solid 4 6/29/2020 16:50 10523363006 GP-38 (3-4) PS 6/29/2029 00:00 10523363007 Water Water Trip Blanks X Solid 2 6/29/2020 00:00 40523363008 PS Soil Trip Blanks X X 4 10523363909 Solid PS 6/29/2020 17:35 GP-39 (3-4) Χ X 6/30/2020 07:40 10523363010 Solid 8 1 GP-40 (3-4) ROS X X PS 10523363011 Solid 6/30/2020 08:30 GP-41 (3-4) X X 10523363012 Solid 4 PS 6/30/2020 09:00 GP-42 (3-4) 6/30/2020 10:30 10523363013 Water 3 3 PS GP-43 (6-9) 3 10523363014 Water 3 PS 6/30/2020 11:30 GP-43 (14-17) 3 3 Water PS 6/30/2020 12:40 10523363015 GP-43 (22-25) 0/30/2020 13.50 3 6/30/2020 14:45 10523363017 Water GP-43 (38-40)

						Comments
Transfers	Released By	Date/Time	Received By	Date/Time		
1	Som Me Pac	e7/4/20 100	2		unpreserved vials in	cluded due to effervescing.
2	ISA	1-1003	0			
3	1100	1 1000				
Cooler Te	emperature on Receipt 🦪 °c	C Custod	y Seal Yor N	Received on Ice	Ø or N	Samples Intact Y or N

WPA3

1.0.25.8

RAD SCREEN: <0.5 mR/hr

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

### Pace Analytical National Center for Testing & Innovation Cooler Receipt Form Client: PACE Temperature: Cooler Received/Opened On: 7 / ISSA HUSEIN Received By: Signature: No Yes NP **Receipt Check List** COC Seal Present / Intact? COC Signed / Accurate? Bottles arrive intact? Correct bottles used? Sufficient volume sent? If Applicable VOA Zero headspace? Preservation Correct / Checked?





July 13, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on July 01, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp

annika.asp@pacelabs.com

ann Asp

(612)607-1700

Project Manager

Enclosures

cc: Ben Holcomb, Wenck Associates

Kelly Jaworski, Wenck Associates, Inc.

Mr. Shane Waterman, Wenck Associates, Inc.







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: 03086 Louisiana DW Certification #: MN00064 Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Maryland Certification #: 322

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240 Mississippi Certification #: MN00064 Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081 New Jersey Certification #: MN002

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

New York Certification #: 11647

Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification #: MN00064 South Carolina Certification #:74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192 Utah Certification #: MN00064 Vermont Certification #: VT-027053137 Virginia Certification #: 460163 Washington Certification #: C486 West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

#### **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660 Alaska Certification 17-026 Arizona Certification #: AZ0612 Arkansas Certification #: 88-0469 California Certification #: 2932 Canada Certification #: 1461.01 Colorado Certification #: TN00003 Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01

Iowa Certification #: 364 Kansas Certification #: E-10277 Kentucky UST Certification #: 16 Kentucky Certification #: 90010 Louisiana Certification #: Al30792 Louisiana DW Certification #: LA180010 Maine Certification #: TN0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395 Mississippi Certification #: TN00003 Missouri Certification #: 340 Montana Certification #: CERT0086 Nebraska Certification #: NE-OS-15-05 Nevada Certification #: TN-03-2002-34 New Hampshire Certification #: 2975

#### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789



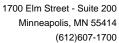


#### **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523518001	GP-37 (65-69)	Water	07/01/20 11:30	07/01/20 18:53
10523518002	GP-37 (80-84)	Water	07/01/20 13:30	07/01/20 18:53
10523518003	GP-37 (96-100)	Water	07/01/20 14:30	07/01/20 18:53
10523518004	GP-37 (72-74)	Solid	06/30/20 18:00	07/01/20 18:53
10523518005	HCL Trip Blank	Water	06/30/20 00:00	07/01/20 18:53





#### **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523518001	GP-37 (65-69)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523518002	GP-37 (80-84)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523518003	GP-37 (96-100)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523518005	HCL Trip Blank	EPA 8260D	JAH	70	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin

Date: 07/13/2020 04:36 PM

Sample: GP-37 (65-69)	Lab ID: 1052	23518001	Collected: 07/01/2	0 11:30	Received: 07	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 15:51	7439-92-1	
8270E MSSV 14 Dioxane By SIM	•		270E by SIM Prepara	ation Me	thod: EPA Mod. 3	3510C		
	Pace Analytical		•					
1,4-Dioxane (SIM)	2.8	ug/L	0.26	1	07/02/20 13:08	07/10/20 13:08	3 123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	34	%.	30-125	1	07/02/20 13:08	07/10/20 13:08	3	
VOA (GC/MS) 8260D	Analytical Meth	nd EPA 83	260D Preparation Me	thod: 8	260D			
VOA (GC/M3) 0200D	Pace National		Toparation we	,ti iou. o	2000			
Acetone	ND	ug/L	50.0	1		07/09/20 01:10		
Allyl chloride	ND	ug/L	5.00	1		07/09/20 01:10		
Benzene	ND	ug/L	1.00	1	07/09/20 01:10			
Bromobenzene	ND	ug/L	1.00	1	07/09/20 01:10			
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 01:10			
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 01:10			
Bromoform	ND	ug/L	1.00	1	07/09/20 01:10			
Bromomethane	ND	ug/L	5.00	1	07/09/20 01:10			
-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	) 104-51-8	
sec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	98-06-6	
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/09/20 01:10	07/09/20 01:10	75-00-3	
Chloroform	ND	ug/L	5.00	1	07/09/20 01:10	07/09/20 01:10	67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 01:10	07/09/20 01:10	74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	95-49-8	
I-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 01:10	07/09/20 01:10	96-12-8	CC
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 01:10			
Dibromomethane	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:10	07/09/20 01:10	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:10			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 01:10			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 01:10			
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 01:10			
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 01:10			
,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:10			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:10			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:10			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 01:10			
1,1-Dichloropropene	ND	ug/L ug/L	1.00	1	07/09/20 01:10			
1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/09/20 01:10			
cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/09/20 01:10			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: GP-37 (65-69)	Lab ID: 105	23518001	Collected: 07/0	/20 11:30	Received: 07	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation	Method: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	594-20-7	
Ethylbenzene	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	0 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	) 1	07/09/20 01:10	07/09/20 01:10	78-93-3	CC
Methylene Chloride	ND	ug/L	5.0	) 1		07/09/20 01:10		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	) 1	07/09/20 01:10	07/09/20 01:10	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	1634-04-4	
Naphthalene	ND	ug/L	5.0	) 1		07/09/20 01:10		CC
n-Propylbenzene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	103-65-1	
Styrene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	76-13-1	
Tetrachloroethene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	) 127-18-4	
Tetrahydrofuran	ND	ug/L	5.0	) 1	07/09/20 01:10	07/09/20 01:10	109-99-9	CC
Foluene	ND	ug/L	1.00	) 1		07/09/20 01:10		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	) 1	07/09/20 01:10	07/09/20 01:10	120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	71-55-6	
,1,2-Trichloroethane	ND	ug/L	1.00	) 1	07/09/20 01:10	07/09/20 01:10	79-00-5	
Frichloroethene	ND	ug/L	1.00	) 1		07/09/20 01:10		
Frichlorofluoromethane	ND	ug/L	5.0			07/09/20 01:10		
I,2,3-Trichloropropane	ND	ug/L	2.50			07/09/20 01:10		
,2,4-Trimethylbenzene	ND	ug/L	1.00			07/09/20 01:10		
,3,5-Trimethylbenzene	ND	ug/L	1.00			07/09/20 01:10		
/inyl chloride	ND	ug/L	1.00			07/09/20 01:10		
(ylene (Total)	ND	ug/L	3.0			07/09/20 01:10		
Surrogates			0.0		. ,			
Toluene-d8 (S)	108	%	80.0-12	) 1	07/09/20 01:10	07/09/20 01:10	2037-26-5	
I-Bromofluorobenzene (S)	103	%	77.0-12	3 1	07/09/20 01:10	07/09/20 01:10	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70.0-13	) 1	07/09/20 01:10	07/09/20 01:10	17060-07-0	



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: GP-37 (80-84)	Lab ID: 105	23518002	Collected: 07/01/2	0 13:30	Received: 07	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 15:5	4 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth		270E by SIM Prepara Minneapolis	ition Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM)	9.7	ug/L	0.36	1	07/02/20 13:08	07/10/20 13:2	9 123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	58	%.	30-125	1	07/02/20 13:08	07/10/20 13:2	9	
VOA (GC/MS) 8260D	Analytical Meth	od: FPA 82	260D Preparation Me	thod: 83	260D			
VOA (GO/MG) 0200D	Pace National		loob i reparation me	11100. 02	2002			
•				•	07/00/00 00 00	07/00/00 05	0 07 0 : :	
Acetone	ND	ug/L	100	2		07/09/20 06:4		
Allyl chloride	ND	ug/L	10.0	2		07/09/20 06:4		
Benzene	ND	ug/L	2.00	2		07/09/20 06:4		
Bromobenzene	ND	ug/L	2.00	2		07/09/20 06:4		
Bromochloromethane	ND	ug/L	2.00	2		07/09/20 06:4		
Bromodichloromethane	ND	ug/L	2.00	2		07/09/20 06:4		
Bromoform	ND	ug/L	2.00	2		07/09/20 06:4		
Bromomethane	ND	ug/L	10.0	2		07/09/20 06:4		
n-Butylbenzene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 104-51-8	
sec-Butylbenzene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 135-98-8	
tert-Butylbenzene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 98-06-6	
Carbon tetrachloride	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 56-23-5	
Chlorobenzene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 108-90-7	
Dibromochloromethane	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 124-48-1	
Chloroethane	ND	ug/L	10.0	2	07/09/20 06:48	07/09/20 06:4	8 75-00-3	
Chloroform	ND	ug/L	10.0	2	07/09/20 06:48	07/09/20 06:4	8 67-66-3	
Chloromethane	ND	ug/L	5.00	2	07/09/20 06:48	07/09/20 06:4	8 74-87-3	
2-Chlorotoluene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 95-49-8	
4-Chlorotoluene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2	07/09/20 06:48	07/09/20 06:4	8 96-12-8	CC
1,2-Dibromoethane (EDB)	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 106-93-4	
Dibromomethane	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.00	2	07/09/20 06:48	07/09/20 06:4	8 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.00	2		07/09/20 06:4		
1,4-Dichlorobenzene	ND	ug/L	2.00	2		07/09/20 06:4		
Dichlorodifluoromethane	ND	ug/L	10.0	2		07/09/20 06:4		
Dichlorofluoromethane	ND	ug/L	10.0	2		07/09/20 06:4		
I,1-Dichloroethane	ND	ug/L	2.00	2		07/09/20 06:4		
1,2-Dichloroethane	ND	ug/L	2.00	2		07/09/20 06:4		
1,1-Dichloroethene	ND	ug/L	2.00	2		07/09/20 06:4		
cis-1,2-Dichloroethene	ND	ug/L	2.00	2		07/09/20 06:4		
trans-1,2-Dichloroethene	ND	ug/L	2.00	2		07/09/20 06:4		
1,2-Dichloropropane	ND ND	ug/L	2.00	2		07/09/20 06:4		
1,2-Dichloropropane 1,1-Dichloropropene	ND ND	ug/L ug/L	2.00	2		07/09/20 06:4		
		•						
1,3-Dichloropropane	ND	ug/L	2.00	2 2	07/09/20 06:48	07/09/20 06:4		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: GP-37 (80-84)	Lab ID: 105	23518002	Collected:	07/01/2	0 13:30	Received: 0	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Prepara	ation Me	thod: 82	260D			
	Pace National	- Mt. Juliet							
trans-1,3-Dichloropropene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 10061-02-6	
2,2-Dichloropropane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 594-20-7	
Ethylbenzene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	8 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	8 98-82-8	
o-Isopropyltoluene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	99-87-6	
2-Butanone (MEK)	ND	ug/L		20.0	2		07/09/20 06:48		CC
Methylene Chloride	ND	ug/L		10.0	2		07/09/20 06:48		
1-Methyl-2-pentanone (MIBK)	ND	ug/L		20.0	2	07/09/20 06:48	07/09/20 06:48	3 108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L		2.00	2		07/09/20 06:48		
Naphthalene	ND	ug/L		10.0	2	07/09/20 06:48	07/09/20 06:48	3 91-20-3	CC
n-Propylbenzene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 103-65-1	
Styrene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 79-34-5	
,1,2-Trichlorotrifluoroethane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 76-13-1	
Tetrachloroethene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 127-18-4	
Tetrahydrofuran	ND	ug/L		10.0	2	07/09/20 06:48	07/09/20 06:48	3 109-99-9	CC
Toluene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 120-82-1	
I,1,1-Trichloroethane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 71-55-6	
1,1,2-Trichloroethane	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 79-00-5	
Frichloroethene	ND	ug/L		2.00	2	07/09/20 06:48	07/09/20 06:48	3 79-01-6	
- - - - - - - - - - - - - - - - - - -	ND	ug/L		10.0	2	07/09/20 06:48	07/09/20 06:48	3 75-69-4	
,2,3-Trichloropropane	ND	ug/L		5.00	2		07/09/20 06:48		
1,2,4-Trimethylbenzene	ND	ug/L		2.00	2		3 07/09/20 06:48		
,3,5-Trimethylbenzene	ND	ug/L		2.00	2		3 07/09/20 06:48		
/inyl chloride	ND	ug/L		2.00	2		3 07/09/20 06:48		
(ylene (Total)	ND	ug/L		6.00	2		3 07/09/20 06:48		
Surrogates		· 3· -							
Toluene-d8 (S)	110	%	80.	.0-120	2	07/09/20 06:48	07/09/20 06:48	3 2037-26-5	
I-Bromofluorobenzene (S)	109	%	77.	.0-126	2	07/09/20 06:48	07/09/20 06:48	3 460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70.	.0-130	2	07/09/20 06:48	07/09/20 06:48	3 17060-07-0	



Project: 2606-0017 Water Gremlin

Date: 07/13/2020 04:36 PM

Sample: GP-37 (96-100)	Lab ID: 1052	23518003	Collected: 07/01/2	0 14:30	Received: 07	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 15:57	7 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth		270E by SIM Prepara	ation Me	ethod: EPA Mod.	3510C		
1,4-Dioxane (SIM)	1.1	ug/L	0.26	1	07/02/20 13:08	07/10/20 13:49	9 123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	38	%.	30-125	1	07/02/20 13:08	07/10/20 13:49	9	
VOA (GC/MS) 8260D	Pace National		260D Preparation Me	etriou. 6	2600			
Acetone	ND	ug/L	50.0	1		07/09/20 01:30		
Allyl chloride	ND	ug/L	5.00	1		07/09/20 01:30		
Benzene	ND	ug/L	1.00	1	07/09/20 01:30			
Bromobenzene	ND	ug/L	1.00	1	07/09/20 01:30			
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 01:30			
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 01:30			
Bromoform	ND	ug/L	1.00	1	07/09/20 01:30			
Bromomethane	ND	ug/L	5.00	1	07/09/20 01:30			
n-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:30			
sec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:30			
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 01:30			
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 01:30			
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 01:30			
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 01:30			
Chloroethane	ND	ug/L	5.00	1	07/09/20 01:30			
Chloroform	ND	ug/L	5.00	1	07/09/20 01:30	07/09/20 01:30	0 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 01:30	07/09/20 01:30	74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	95-49-8	
1-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	0 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 01:30	07/09/20 01:30	96-12-8	CC
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	0 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	0 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 01:30	07/09/20 01:30	75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 01:30	07/09/20 01:30	75-43-4	
1,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	0 107-06-2	
1,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	78-87-5	
1,1-Dichloropropene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	563-58-6	
1,3-Dichloropropane	ND	ug/L	1.00	1	07/09/20 01:30			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 01:30			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: GP-37 (96-100)	Lab ID: 105	23518003	O3 Collected: 07/01/20 14:30 Received: 07/01/20 18:53 Matrix: Water						
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D				
, ,	Pace National	- Mt. Juliet							
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 01:30	07/09/20 01:30	10061-02-6		
2,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 01:30			
Ethylbenzene	ND	ug/L	1.00	1		07/09/20 01:30			
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1		07/09/20 01:30			
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 01:30			
sopropylbenzene (Cumene)	ND	ug/L	1.00	1		07/09/20 01:30			
o-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 01:30			
2-Butanone (MEK)	ND	ug/L	10.0	1		07/09/20 01:30		CC	
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 01:30			
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 01:30	07/09/20 01:30	108-10-1	CC	
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/09/20 01:30			
Naphthalene	ND	ug/L	5.00	1		07/09/20 01:30		CC	
-Propylbenzene	ND	ug/L	1.00	1		07/09/20 01:30			
Styrene	ND	ug/L	1.00	1		07/09/20 01:30			
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 01:30			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 01:30			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/09/20 01:30			
Tetrachloroethene	ND	ug/L	1.00	1		07/09/20 01:30			
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 01:30		CC	
Toluene	ND	ug/L	1.00	1		07/09/20 01:30			
I,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 01:30			
I,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 01:30			
I,1,1-Trichloroethane	ND	ug/L	1.00	1		07/09/20 01:30			
,1,2-Trichloroethane	ND	ug/L	1.00	1		07/09/20 01:30			
Trichloroethene	ND	ug/L	1.00	1		07/09/20 01:30			
Trichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 01:30			
I,2,3-Trichloropropane	ND	ug/L	2.50	1		07/09/20 01:30			
,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 01:30			
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 01:30			
/inyl chloride	ND	ug/L	1.00	1		07/09/20 01:30			
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 01:30			
Surrogates	2	~ <i>y</i> =	3.00	•	11,00,2001.00	21,00,2001.00	. 300 _0 ,		
Toluene-d8 (S)	113	%	80.0-120	1	07/09/20 01:30	07/09/20 01:30	2037-26-5		
I-Bromofluorobenzene (S)	108	%	77.0-126	1		07/09/20 01:30			
1,2-Dichloroethane-d4 (S)	107	%	70.0-130	1		07/09/20 01:30			



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: HCL Trip Blank	Lab ID: 105	23518005	Collected: 06/30/	20 00:00	Received: 07	7/01/20 18:53	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation M	lethod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/09/20 00:30	07/09/20 00:3	0 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/09/20 00:30			
Benzene	ND	ug/L	1.00	1	07/09/20 00:30			
Bromobenzene	ND	ug/L	1.00	1	07/09/20 00:30			
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 00:30			
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 00:30			
Bromoform	ND	ug/L	1.00	1	07/09/20 00:30			
Bromomethane	ND	ug/L	5.00	1	07/09/20 00:30			
n-Butylbenzene	ND	ug/L	1.00	1	07/09/20 00:30			
sec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 00:30			
tert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 00:30			
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 00:30			
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30			
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 00:30			
Chloroethane	ND	ug/L	5.00	1	07/09/20 00:30			
Chloroform	ND	ug/L	5.00	1	07/09/20 00:30			
Chloromethane	ND	ug/L	2.50	1	07/09/20 00:30			
2-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 00:30			
1-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 00:30			
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 00:30			CC
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 00:30			00
Dibromomethane	ND	ug/L	1.00	1	07/09/20 00:30			
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30			
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30			
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 00:30			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 00:30			
1,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 00:30			
1,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 00:30			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 00:30			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 00:30			
trans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 00:30			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 00:30			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/09/20 00:30			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/09/20 00:30			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 00:30			
trans-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/09/20 00:30			
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 00:30			
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 00:30			
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 00:30			
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 00:30			
sopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.00	1	07/09/20 00:30			
o-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 00:30			
2-Butanone (MEK)	ND ND	ug/L ug/L	10.0	1	07/09/20 00:30			СС
Methylene Chloride	ND ND	ug/L ug/L	5.00	1	07/09/20 00:30			00





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Sample: HCL Trip Blank	Lab ID: 1052	23518005	Collected: 06/30/2	20 00:00	Received: 07	7/01/20 18:53 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 00:30	07/09/20 00:30	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 00:30	07/09/20 00:30	109-99-9	
Toluene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 00:30	07/09/20 00:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 00:30	07/09/20 00:30	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	108-67-8	
Vinyl chloride	ND	ug/L	1.00	1	07/09/20 00:30	07/09/20 00:30	75-01-4	
Xylene (Total)	ND	ug/L	3.00	1	07/09/20 00:30	07/09/20 00:30	1330-20-7	
Surrogates		-						
Toluene-d8 (S)	110	%	80.0-120	1	07/09/20 00:30	07/09/20 00:30	2037-26-5	
4-Bromofluorobenzene (S)	111	%	77.0-126	1	07/09/20 00:30	07/09/20 00:30	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70.0-130	1	07/09/20 00:30	07/09/20 00:30	17060-07-0	





#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

QC Batch: 684956 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523518001, 10523518002, 10523518003

METHOD BLANK: 3663948 Matrix: Water

Associated Lab Samples: 10523518001, 10523518002, 10523518003

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/07/20 15:36

LABORATORY CONTROL SAMPLE: 3663949

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead, Dissolved ug/L 1000 989 99 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3663950 3663951

MS MSD

10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits Lead, Dissolved ND 20 ug/L 1000 1000 967 1000 97 100 75-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

QC Batch: 1506087 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523518001, 10523518002, 10523518003, 10523518005

METHOD BLANK: R3548628-3 Matrix: Water
Associated Lab Samples: 10523518001, 10523518002, 10523518003, 10523518005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L		50.0	07/08/20 21:47	
Benzene	ug/L	ND	1.00	07/08/20 21:47	
Bromobenzene	ug/L	ND	1.00	07/08/20 21:47	
Bromodichloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromoform	ug/L	ND	1.00	07/08/20 21:47	
Bromomethane	ug/L	ND	5.00	07/08/20 21:47	
n-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
sec-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
ert-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Carbon tetrachloride	ug/L	ND	1.00	07/08/20 21:47	
Chlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dibromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Chloroethane	ug/L	ND	5.00	07/08/20 21:47	
Chloroform	ug/L	ND	5.00	07/08/20 21:47	
Chloromethane	ug/L	ND	2.50	07/08/20 21:47	
2-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
I-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/08/20 21:47	
,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/08/20 21:47	
Dibromomethane	ug/L	ND	1.00	07/08/20 21:47	
,2-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
,3-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
,4-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dichlorodifluoromethane	ug/L	ND	5.00	07/08/20 21:47	
Dichlorofluoromethane	ug/L	ND	5.00	07/08/20 21:47	
,1-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
,2-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
,1-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
sis-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
rans-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
,1-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
,3-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
sis-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
rans-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
2,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
Ethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/08/20 21:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/08/20 21:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

METHOD BLANK: R3548628-3 Matrix: Water
Associated Lab Samples: 10523518001, 10523518002, 10523518003, 10523518005

·	,	Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/08/20 21:47	
p-Isopropyltoluene	ug/L	ND	1.00	07/08/20 21:47	
2-Butanone (MEK)	ug/L	ND	10.0	07/08/20 21:47	
Methylene Chloride	ug/L	ND	5.00	07/08/20 21:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/08/20 21:47	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/08/20 21:47	
Naphthalene	ug/L	ND	5.00	07/08/20 21:47	
n-Propylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Styrene	ug/L	ND	1.00	07/08/20 21:47	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/08/20 21:47	
Tetrachloroethene	ug/L	ND	1.00	07/08/20 21:47	
Tetrahydrofuran	ug/L	ND	5.00	07/08/20 21:47	
Toluene	ug/L	ND	1.00	07/08/20 21:47	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/08/20 21:47	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/08/20 21:47	
Trichloroethene	ug/L	ND	1.00	07/08/20 21:47	
Trichlorofluoromethane	ug/L	ND	5.00	07/08/20 21:47	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/08/20 21:47	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Vinyl chloride	ug/L	ND	1.00	07/08/20 21:47	
Xylene (Total)	ug/L	ND	3.00	07/08/20 21:47	
Allyl chloride	ug/L	ND	5.00	07/08/20 21:47	
Toluene-d8 (S)	%	105	80.0-120	07/08/20 21:47	
4-Bromofluorobenzene (S)	%	104	77.0-126	07/08/20 21:47	
1,2-Dichloroethane-d4 (S)	%	110	70.0-130	07/08/20 21:47	

LABORATORY CONTROL SAMPLE &	LCSD: R3548	628-1	R	3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	21.3	20.6	85.2	82.4	19.0-160	3.34	27	
Benzene	ug/L	5.00	5.08	4.64	102	92.8	70.0-123	9.05	20	
Bromobenzene	ug/L	5.00	4.41	4.42	88.2	88.4	73.0-121	0.227	20	
Bromodichloromethane	ug/L	5.00	5.27	4.78	105	95.6	75.0-120	9.75	20	
Bromochloromethane	ug/L	5.00	6.03	5.59	121	112	76.0-122	7.57	20	
Bromoform	ug/L	5.00	4.66	4.98	93.2	99.6	68.0-132	6.64	20	
Bromomethane	ug/L	5.00	7.85	7.96	157	159	10.0-160	1.39	25	
n-Butylbenzene	ug/L	5.00	4.29	4.32	85.8	86.4	73.0-125	0.697	20	
sec-Butylbenzene	ug/L	5.00	4.44	4.38	88.8	87.6	75.0-125	1.36	20	
tert-Butylbenzene	ug/L	5.00	4.70	4.70	94.0	94.0	76.0-124	0.00	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE &	& LCSD: R3548			3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
Carbon tetrachloride	ug/L	5.00	5.48	5.03	110	101	68.0-126	8.56	20	
Chlorobenzene	ug/L	5.00	4.90	5.13	98.0	103	80.0-121	4.59	20	
Dibromochloromethane	ug/L	5.00	4.68	5.17	93.6	103	77.0-125	9.95	20	
Chloroethane	ug/L	5.00	5.63	4.82	113	96.4	47.0-150	15.5	20	
Chloroform	ug/L	5.00	5.05	4.76	101	95.2	73.0-120	5.91	20	
Chloromethane	ug/L	5.00	5.38	5.16	108	103	41.0-142	4.17	20	
2-Chlorotoluene	ug/L	5.00	4.52	4.65	90.4	93.0	76.0-123	2.84	20	
4-Chlorotoluene	ug/L	5.00	4.67	4.66	93.4	93.2	75.0-122	0.214	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	3.88	4.17	77.6	83.4	58.0-134	7.20	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	4.82	4.86	96.4	97.2	80.0-122	0.826	20	
Dibromomethane	ug/L	5.00	5.17	4.82	103	96.4	80.0-120	7.01	20	
1,2-Dichlorobenzene	ug/L	5.00	4.60	4.52	92.0	90.4	79.0-121	1.75	20	
1,3-Dichlorobenzene	ug/L	5.00	4.80	5.02	96.0	100	79.0-120	4.48	20	
1,4-Dichlorobenzene	ug/L	5.00	4.75	4.75	95.0	95.0	79.0-120	0.00	20	
Dichlorodifluoromethane	ug/L	5.00	4.82	4.40	96.4	88.0	51.0-149	9.11	20	
Dichlorofluoromethane	ug/L	5.00	5.32	4.91	106	98.2	65.0-133	8.02	20	
1,1-Dichloroethane	ug/L	5.00	4.44	4.36	88.8	87.2	70.0-126	1.82	20	
1,2-Dichloroethane	ug/L	5.00	5.14	5.06	103	101	70.0-128	1.57	20	
I,1-Dichloroethene	ug/L	5.00	5.40	4.91	108		71.0-124	9.51	20	
cis-1,2-Dichloroethene	ug/L	5.00	5.01	5.01	100	100	73.0-120	0.00	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.35	5.18	107	104	73.0-120	3.23	20	
1,2-Dichloropropane	ug/L	5.00	4.10	4.59		91.8	77.0-125	11.3	20	
1,1-Dichloropropene	ug/L	5.00	5.27	4.79	105	95.8	74.0-126	9.54	20	
1,3-Dichloropropane	ug/L	5.00	4.80	4.89	96.0	97.8	80.0-120	1.86	20	
cis-1,3-Dichloropropene	ug/L	5.00	5.18	4.48	104	89.6	80.0-123	14.5	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.37	4.60		92.0	78.0-124	5.13	20	
2,2-Dichloropropane	ug/L	5.00	5.31	5.25	106	105	58.0-130	1.14	20	
Ethylbenzene	ug/L	5.00	4.63	4.73	92.6	94.6	79.0-123	2.14	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.43	4.13		82.6	66.0-130	7.01	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.24	5.15		103	54.0-138	1.73	20	
sopropylbenzene (Cumene)	ug/L	5.00	4.80	4.72		94.4	76.0-127	1.68	20	
p-Isopropyltoluene	ug/L	5.00	4.60	4.72	92.0	93.4	76.0-127	1.51	20	
2-Butanone (MEK)	ug/L	25.0	19.4	19.1	77.6	76.4	44.0-160	1.56	20	
Methylene Chloride	_	5.00	4.72	4.61	94.4		67.0-120	2.36	20	
4-Methyl-2-pentanone (MIBK)	ug/L ug/L	25.0	18.8	19.4	75.2	77.6	68.0-142	3.14	20	
Methyl-tert-butyl ether	•	5.00	5.17	4.83	103	96.6	68.0-142	6.80	20	
	ug/L			3.89			54.0-125	2.29	20	
Naphthalene	ug/L	5.00	3.98							
n-Propylbenzene	ug/L	5.00	4.38	4.46	87.6		77.0-124	1.81	20	
Styrene	ug/L	5.00	4.18	4.41	83.6		73.0-130	5.36	20	
1,1,1,2-Tetrachloroethane	ug/L	5.00	5.08	5.24	102		75.0-125	3.10	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	4.34	4.37	86.8		65.0-130	0.689	20	
Tetrachloroethene	ug/L	5.00	5.40	5.10			72.0-132	5.71	20	
Tetrahydrofuran	ug/L	5.00	3.68	3.28	73.6		41.0-146	11.5	20	
Toluene	ug/L	5.00	4.62	4.76			79.0-120	2.99	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.04	4.59	101		69.0-132	9.35	20	
1,2,3-Trichlorobenzene	ug/L	5.00	4.32	4.56			50.0-138	5.41	20	
1,2,4-Trichlorobenzene	ug/L	5.00	4.22	4.38	84.4	87.6	57.0-137	3.72	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

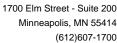
Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

LABORATORY CONTROL SAMPLE	E & LCSD: R3548	8628-1	R:	3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.28	5.02	106	100	73.0-124	5.05	20	
1,1,2-Trichloroethane	ug/L	5.00	4.86	5.01	97.2	100	80.0-120	3.04	20	
Trichloroethene	ug/L	5.00	5.44	5.11	109	102	78.0-124	6.26	20	
Trichlorofluoromethane	ug/L	5.00	5.23	5.22	105	104	59.0-147	0.191	20	
1,2,3-Trichloropropane	ug/L	5.00	4.73	4.50	94.6	90.0	73.0-130	4.98	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.54	4.74	90.8	94.8	76.0-121	4.31	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.59	4.58	91.8	91.6	76.0-122	0.218	20	
Vinyl chloride	ug/L	5.00	4.34	4.12	86.8	82.4	67.0-131	5.20	20	
Xylene (Total)	ug/L	15.0	14.8	14.8	98.7	98.7	79.0-123	0.00	20	
Allyl chloride	ug/L	25.0	25.5	24.5	102	98.0	72.0-128	4.00	20	
Toluene-d8 (S)	%				105	110	80.0-120			
1-Bromofluorobenzene (S)	%				100	109	77.0-126			
1,2-Dichloroethane-d4 (S)	%				106	108	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

QC Batch: 684741 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523518001, 10523518002, 10523518003

METHOD BLANK: 3662525 Matrix: Water

Associated Lab Samples: 10523518001, 10523518002, 10523518003

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed 1,4-Dioxane (SIM) ND 0.25 07/10/20 12:06 ug/L 1,4-Dioxane-d8 (S) 40 30-125 07/10/20 12:06 %.

LABORATORY CONTROL SAMPLE: 3662526

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 9.6 96 32-128 ug/L 1,4-Dioxane-d8 (S) 30 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3662527 3662528 MS MSD 10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L 1.1 10.5 12.5 10.6 13.4 91 32-130 23 30 1,4-Dioxane-d8 (S) 47 30-125 %. 44

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALIFIERS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## **SAMPLE QUALIFIERS**

Sample: 10523518002

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Dilution due to soil in vial.

#### **ANALYTE QUALIFIERS**

Date: 07/13/2020 04:36 PM

CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523518

Date: 07/13/2020 04:36 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523518001	GP-37 (65-69)	EPA 3010A	684956	EPA 6010D	685198
10523518002	GP-37 (80-84)	EPA 3010A	684956	EPA 6010D	685198
10523518003	GP-37 (96-100)	EPA 3010A	684956	EPA 6010D	685198
10523518001	GP-37 (65-69)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523518002	GP-37 (80-84)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523518003	GP-37 (96-100)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523518001	GP-37 (65-69)	8260D	1506087	EPA 8260D	1506087
10523518002	GP-37 (80-84)	8260D	1506087	EPA 8260D	1506087
10523518003	GP-37 (96-100)	8260D	1506087	EPA 8260D	1506087
10523518005	HCL Trip Blank	8260D	1506087	EPA 8260D	1506087

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Face Analytical www.pacelabs.com

R A 2 3 જે Pace Project No./ Lab I.D. Samples Intact (Y/N) DRINKING WATER 903 SAMPLE CONDITIONS 19/00/201 5870122 OTHER (N/Y) h 00/32/ Sealed Cooler 2 Custody ₹ 97 Received on Ice (Y/N) **GROUND WATER** 10523518 Residual Chlorine (Y/N) Ţ O° ni qmeT ഹ് Page: REGULATORY AGENCY RCRA 1853 202 Requested Analysis Filtered (Y/N) TIME Site Location STATE NPDES DATE Signed (MM/DD/YY): 67 01 DATE UST 7/2 0523518 ACCEPTED BY / AFFILIATION XXX XX アナ <u> 100</u> DAY OF t Analysis Test N/A Other Methanol Preservatives Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> NaOH MM HCI Invoice Information: HNO3 ompany Name: <sup>⊅</sup>OS<sup>₹</sup>H Manager: Pace Profile #: Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1 5% per month for any included Section C Reference: Pace Project ce Quote Attention: Unpreserved TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: SAMPLE TEMP AT COLLECTION DATE COMPOSITE END/GRAB GKENIN るとはなる JAM JOOMY 3 DATE COLLECTED RELINQUISHED BY / AFFILIATION Project Number 2C.cl. — CC 1 25/2 800 TIME JANGOR. COMPOSITE START Project Name: Name DATE Required Project Information: 200 C ۵ (G=GRAB C=COMP) SAMPLE TYPE (see valid codes to left) হ MATRIX CODE Section B Report To: ORIGINAL - A S A A S E P Matrix Codes MATRIX / CODE Drinking Water Water Waste Water PSSCCIMES. Product Soil/Solid Oil Wipe Air Tissue Other **元**公 50k 1) TO ADDITIONAL COMMENTS ( REE (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE Fax: SAMPLE ID क्षा करा DEN CO Required Client Information Section A
Required Client Information: P Company: Co. Requested Due Date TO MODIE, Section D hone: Page 22 of 29 # MHLI S 00 10 77

F-ALL-C-010-rev.00, 09Nov2017



# Document Name:

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt	Client Name:			Pro	oject #:	WO	#:1(	052	<b>2351</b> 8	ï
	Wenck			_		PM:	AKA	Du	e Date: 07/	10/20
Courier:	☐Fed Ex ☐UPS ☐Pace ☐SpeeDee	∏us ∏co	SPS mmercial	⊠Cli See Exc			NT: WENC	K		
Tracking Number:				[	j L					<u> </u>
Custody Seal on Co	ooler/Box Present? Yes	No	Seals	s Intacti	? ∐Yes	Σn	lo <b>Biolo</b>	gical Tis	sue Frozen?	Yes □No ☒N/A
Packing Material:	<b>凌</b> Bubble Wrap <b>凌</b> Bubble Ba	gs 🗆	]None	Oth	er: <u>PB</u>			Te	emp Blank?	Yes No
Thermometer:	☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☒ T5(0489)		Type of Ice	e: 🔯	ÚWet [	Blue	□None	□Dr	y	
Did Samples Origina	ite in West Virginia? □Yes ☑No	We	re Ali Con	tainer 1	emps Tak	en? ∐Ye	es 🗌 No 🖔	}N/A	***	
Temp should be above fr	reezing to 6°C Cooler Temp Rea	id w/ten	np blank:_	-	3,9				ge Corrected Ter	mp '): See Exceptions
Correction Factor: _	True Cooler Temp Correcte	d w/tem	p blank :		3.9		⁰C		oc	1 Container
	I: ( N/A, water sample/Other:	64-1	)	<b>4</b> El 64				_	Contents: <u>CF</u>	
	in a quarantine zone within the Unit IY, OK, OR, SC, TN, TX or VA (check ma			A, FL, GA No		•	iginate from a erto Rico)?	~_	source (internatior ]Y <b>e</b> s	ally, including
ľ	f Yes to either question, fill out a F	legulated	d Soil Che	cklist (F	-MN-Q-33	8) and i	nclude with	SCUR/C	OC paperwork.	
								COMM	IENTS:	
Chain of Custody Prese		Yes	□No		1.					
Chain of Custody Relin		Yes	□No		2.					
Sampler Name and/or Samples Arrived within	74.7	XYes	No □No	□N/A	3. 4.					
Short Hold Time Analy		☐Yes	⊠No		5. <b>□</b> F€				orm/E coli BOD/other_	BOD Hex Chrome
Rush Turn Around Tim	ne Requested?	Yes	□No		6.	indicately L	Jane dec	<u> </u>	·	,
Sufficient Volume?		XYes	□No		7.					
Correct Containers Use	ed?	XiYes	□No		8.					
-Pace Containers Us	ed?	X Yes	No							
Containers Intact?		Yes	□No		9.					
Field Filtered Volume F	Received for Dissolved Tests?	∐Yes	⊠No	□N/A	10. Is s	ediment	visible in the	dissolve	ed container? 🔲	∕es □No
Is sufficient informatio to the COC?	n available to reconcile the samples	Yes	□No		11. If no, Sample	write ID/	Date/Time on - CU3 ha	Containe	er Below: 5 VG90 KG	See Exception
Matrix: ☑Water ☑Soi										
All containers needing checked?	acid/base preservation have been	∐Yes	□No	⊠n/a	12. Samp	le#				
compliance with EPA re	preservation are found to be in ecommendation? IaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	⊠n/a	[	] NaOH	□ни	IO <sub>3</sub>	∐H₂SO₄	Zinc Acetate
•	orm, TOC/DOC Oil and Grease,	Yes	□No	□n/a	Positive f Chlorine	? [	Yes No 0-6 Roll	pH Pape	er Lot# 0-6 Strip	See Exception  0-14 Strip
							0 0 11011		ООЗПР	
Extra labels present on Headspace in VOA Vials	soil VOA or WIDRO containers? s (greater than 6mm)?	⊠Yes ⊠Yes	□No □No	□n/a □n/a	13. <b>A</b> [[	VOA	•			See Exception
Trip Blank Present? Trip Blank Custody Sea	ls Present?	XYes XYes	□No □No	□n/a □n/a	14. Pac	e Trip Bla	ank Lot # (if p	urchase	d): 267.15	1
CLIENT NOT Person Contacted:	TIFICATION/RESOLUTION				Date/T	ime	Fiel	d Data I	Required?	es 🔲 No
Comments/Resolution	n: Unpreserved vials provide	ed due to	the prese	ence of h						
	nager Review:	W)	) sic			Date		7/2/2		
	a discrepancy affecting North Carolina ve, out of temp, incorrect containers).	complian	e samples	, a copy o	of this form	will be se	ent to the Nor	h Carolir	na DEHNR Certifica	tion Office ( i.e out of

Labeled by:

Page 23 of 29



# Document Name: Headspace Exception

Document Revised: 26Mar2020 Page 1 of 1

Document No.: ENV-FRM-MIN4-0140 Rev.00

Pace Analytical Services - **Minneapolis** 

-				<del></del> ·	
Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
GP-37 (65-69)	3	0	0	3	N
GP-37 (80-84)	3	0	0	3	Y
					·
		1			
					- 10
			-		

CI	nain of Custod	v —					_	_	_	_						-			-	408	5	
	Samples were sen	t directly to th						C	ert.	Of C	ded	: [	x \			lo		/	_	eted		tical
	No. of the second secon	Workorder N	Subcont	017 Water Gren	nlin	-		0	wne	er Re	ecei	vea	Dat	e:	7/1/2020 Reques		Result		que	stea	<b>Бу</b> : //	10/2020
-	ort To		Subcont	ract 10											Toquo	T	T		$\neg$	$\top$	T	
Pac 170 Suit Min	ika Asp e Analytical Minnesota 0 Elm Street e 200 neapolis, MN 55414 ne (612)607-1700			ional banon Road .TN 37122								0	e National) - TB	ace National)			R		J	3	<b>H!</b>	
	W. 1					P	rese	rved	Con	taine	rs	НОН	-	8260D (P			7		1 2			
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	VĞŞH	VĞBRI	VG9U	JGFU	DWC			VOC by 8260D (P	VOC by			and the State of				LAB	USE ONLY
1	GP-37 (65-69)	PS	7/1/2020 11:30	10523518001	Water	3		3						X							- (	)
2	GP-37 (80-84)	PS	7/1/2020 13:30	10523518002	Water	3		3				1		X	in 12 -				125		1-0	7
3	GP-37 (96-100)	RQS	7/1/2020 14:30	10523518003	Water	9		,					1	X							-C	13
4	GP-37 (72-74)	PS	6/30/2020 18:0	0 10523518004	Solid		4		1	1		X		1								
5	HCL Trip Blank	PS	6/30/2020 00:0	00 10523518005	Water	2	1						X	X							-	29
																	С	omm	ents			
1 2	Released By	- 1Paa	Date/Tim	Received I		11	•			J.	e/Tin	ne C			eserved vial D SL Sampl		ded due	e to ef	fferves	icing.		
3 Co	oler Temperature on Re	eceipt 18	°C C	ustody Seal (	Por I	N	Т	1	Rec	eive	d or	n Ice	· Q	or	N	$\Box$	S	amp	oles I	ntac	Yor	N
***/	n order to maintain client This chain of custody is on I.o2:3 RAD SCREEN: <0.5	confidentiality considered co	y, location/nai	me of the sampl	ing site,	samp		nai	me a	and s	sign	atur	e ma			ided (	on this	CO		7-03		

	nane pane 3)	1,2,4-Trimethylbenzene 1,2-Dibromo-3-chloropropa 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,2-Dichloropropane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 2,2-Dichlorobenzene 2,2-Dichlorotoluene 4-Chlorotoluene 4-Chlorotoluene 4-Methyl-2-pentanone (MEK) 2-Chorotoluene Bromobenzene Bromobenzene Bromochloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chloromethane Chloromethane Chloromethane Chloromethane Chloromethane
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ē	ethene	tert-Butylbenzene r	sec-Butylbenzene	p-Isopropyltoluene r	n-Propylbenzene r	n-Butylbenzene r	ā			Vinyl chloride r	Trichlorofluoromethane r	Trichloroethene	Toluene	Tetrahydrofuran	loroethene	Styrene	Naphthalene	Methylene Chloride	Methyl-tert-butyl ether	ie)	Hexachloro-1,3-butadiene r		Diethyl ether (Ethyl ether)	Dichlorofluoromethane	Dichlorodifluoromethane r	Dibromomethane	Dibromochloromethane r	
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	

æ ( l.e out of	Date: 7/2/2020  orth Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( I.e out of containers).	7/2/2 Vorth Caroll	ent to the N	Date of this form will be s	s, a copy o	nce sample	orth Carolina compila		Project Manager Review:  Project Manager Review:  Whenever there is a discrepancy affecting Not the Notice of the	Note:
6	Field Data Required? Yes No	Field Data	_	Date/Time:				NOIT	CLIENT NOTIFICATION/RESOLUTION Person Contacted:	Per
	262/51	if purchase	lank Lot # (	<ol> <li>Pace Trip Blank Lot # (if purchased):</li> </ol>	□N/A	No so	XX Yes		Blank Present? Blank Custody Seals Present?	Trip
ee Exception	S	-		13.All VOA	ON/A	Tree.		ortainers?	Extra labels present on soil VOA or WIDRO con Headspace in VOA Vials (greater than 6mm)?	Extr
Strip	rip 0-14	pH Paper Lot# 0-6 St	0-6 Roll	Chlorine? Res. Chlorine	□N/A	□ No	ΣΥes	Grease,	Exceptions: (Op. Collform, TOC/DOC Oil and DRO/8015 (water) and Dioxin/PFAS	Exc
Acetate See Exception	□H <sub>2</sub> SO <sub>4</sub> □Zinc Acetate	ONH	Yes	NaOH NaOH	⊠N/A	No	n □Yes	nd to be in	All dontainers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyan	All c
				12. Sample #	N/A	□No	een 🔲 Yes	n have b	All containers needing acid/base preservation have been checked?	All che
□ ee Exception	b W690 Keelved See Exception	have	- CO3	11. If no, write ID/ Date/Time on Container Sample - 601 - 603 have 3		ONO	nples XYves	e the samples	Is sufficient information available to reconcile to the COC?  Matrix: Ŋwater 対Soil □Oil □Other	is su to th
0	container?	he dissolve	visible in t	10. Is sediment	□N/A	No	∐Yes	Tests?	d Filtered Volume Received for Dissolved	Field
				9.		□No	XYes		tainers Intact?	Con
		===		,00		No No	X Yes		rect Containers Used?	_
				7.		ONO	XYes		icient Volume?	Suff
	*	-		6.		ONO	⊠Yes		Rush Turn Around Time Requested?	R
ex Chrome	orm/E call  BOD/cBOD Hex Chrome	☐Total Colife	rm ☐HPC [	5. Fecal Coliform HPC Total Coliform/E col Turbidity Nitrate Nitrite Orthophos		No	□Yes		ort Hold Time Analysis (<72 hr)?	Shor
				4.	LW/M	□N <sub>0</sub>	Ayes		Samples Arrived within Hold Time?	Sam
				2.	+	ON O	Xyes		Chain of Custody Relinquished?	Chal
				1.		□ No	Ώγes		In of Custody Present and Filled Out?	Chal
7/1/20 Including	nally,	n a foreign source (	Person Ex ginate from rto Rico)? nclude wit	Date/Initials of Person Examining Contents: CF  Ditylother: Date/Initials of Person Examining Contents: CF  Ditylother originate from a foreign source (internation of Check maps)? Mo  Popy (Check maps)? Mo  Date/Initials of Person Examining Contents: CF  Hawaii and Puerto Rico)? Myes No  Popy fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.  COMMENTS:	A, FL, GA,  No cklist (F-N	J :: AL, AR, C □Yes d Soll Che	le/Other: thin the United States VA (check maps)? N, fill out a Regulate	ple/Other: within the L or VA (check ion, fill out	oil: ( \Bigcap N/A, we have not a quaranti NY, OK, OR, SC of the lift Yes to eith	<u>5 0 c</u>
See Exceptions  Container		(no t	၁၀	3.9		p blank :	emp Corrected w/temp blank:		Cool	ç
	cted Temp	Averag	°C	3,9		np blank:	Cooler Temp Read w/temp blank:	ler Tem	Temp should be above freezing to 6°C Co	
		N/A	ON	Were All Container Temps Taken?   Yes	tainer Te	re All Con		∐Yes D	Virginia?	B
	Melted	e	None	Vet □Blue	:: \Wet	Type of ice:	0459)	36) □T3(0459) 89)	hermometer:	글
□ No ⊠N/A	Biological Tissue Frozen? Yes No Temp Blank? XYes	logical Tis: Te		∵ Pes ⊠No	Seals Intact? UY	Seals	gs [	□Yes ⊠Bubt	Custody Seal on Cooler/Box Present?  Packing Material: XBubble Wrap	P C
	į.		NT: WENCK	CLI	⊠Client See Exceptions	USPS Commercial		□UPS □SpeeDee	ourier: Fed Ex  Tracking Number:	T 0
	3518	105235		Project #: WO#	Proje				Sample Condition Client Name: Upon Receipt	Sa
Page 2	Analytical Services - Minneapolis	Pace Ana MI		Document No.: ENV-FRM-MIN4-0150 Rev.00	M-MIN4-0150	Docu V-FRM-N	EN			
27 of 29	Document Revised: 27Mar2020 Page 1 of 1	cument R		Document Name: Sample Condition Upon Receipt (SCUR) - MN	Document Name: tion Upon Receip	Docui	Sample Co		Sace Analytical	
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00
4

Sample ID	Headspace greater	Headspace less than	No Headspace	Total Vials	Sediment Present?
GP-37 (65-69)	W	0	0	S	ح
6P-37 (80-84)	ω	0	G	w	×
	*				
	-	- 1			
		-			

ace Analytical \*

Document No.: ENV-FRM-MIN4-0140 Rev.00

Document Name: Headspace Exception

Document Revised: 26Mar2020
Page 1 of 1

Pace Analytical Services - Minneapolis

# Pace Analytical National Center for Testing & Innovation Cooler Receipt Form 4236847 Client: PACE MN Temperature: Cooler Received/Opened On: 7 7/20 ISSA HUSEIN Received By: Signature: No Yes NP **Receipt Check List** COC Seal Present / Intact? COC Signed / Accurate? Bottles arrive intact? Correct bottles used? Sufficient volume sent? If Applicable VOA Zero headspace? Preservation Correct / Checked?





July 13, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on July 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp

annika.asp@pacelabs.com

ann Asp

(612)607-1700

Project Manager

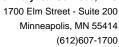
Enclosures

cc: Ben Holcomb, Wenck Associates

Kelly Jaworski, Wenck Associates, Inc.

Mr. Shane Waterman, Wenck Associates, Inc.







## **CERTIFICATIONS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 93086
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: WN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

# **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122 Alabama Certification #: 40660 Alaska Certification 17-026 Arizona Certification #: AZ0612 Arkansas Certification #: 88-0469

California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01 EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: Al30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

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## **CERTIFICATIONS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847

West Virginia Certification #: 233 Wisconsin Certification #: 9980939910 Wyoming UST Certification #: via A2LA 2926.01 A2LA-ISO 17025 Certification #: 1461.01 A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789





# **SAMPLE SUMMARY**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523661001	GP-48 (8-12)	Water	07/02/20 08:00	07/02/20 12:55
10523661002	GP-48 (25-27)	Water	07/02/20 09:45	07/02/20 12:55
10523661003	GP-48 (31-34)	Water	07/02/20 10:00	07/02/20 12:55
10523661004	Trip Blank	Water	07/02/20 00:00	07/02/20 12:55





# **SAMPLE ANALYTE COUNT**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523661001	GP-48 (8-12)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523661002	GP-48 (25-27)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523661003	GP-48 (31-34)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	BMB	70	PAN
10523661004	Trip Blank	EPA 8260D	BMB	70	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0012 Water Gremlin

Date: 07/13/2020 12:26 PM

Sample: GP-48 (8-12)	Lab ID: 105	23661001	Collected: 07/02/2	00:80	Received: 07	7/02/20 12:55	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
	Pace Analytica	Services -	Minneapolis						
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 17:0	2 7439-92-1		
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C			
,	Pace Analytica		•						
1,4-Dioxane (SIM)	0.85	ug/L	0.42	1	07/02/20 17:38	07/10/20 19:2	1 123-91-1		
Surrogates									
1,4-Dioxane-d8 (S)	36	%.	30-125	1	07/02/20 17:38	07/10/20 19:2	1		
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D				
	Pace National	- Mt. Juliet							
Acetone	ND	ug/L	250	5	07/09/20 07:24	07/09/20 07:2	4 67-64-1		
Allyl chloride	ND	ug/L	25.0	5		07/09/20 07:2			
Benzene	ND	ug/L	5.00	5		07/09/20 07:2			
Bromobenzene	ND	ug/L	5.00	5		07/09/20 07:2	_		
Bromochloromethane	ND	ug/L	5.00	5		07/09/20 07:2			
Bromodichloromethane	ND	ug/L	5.00	5		07/09/20 07:2			
Bromoform	ND	ug/L	5.00	5		07/09/20 07:2			
Bromomethane	ND	ug/L	25.0	5		07/09/20 07:2			
-Butylbenzene	ND	ug/L	5.00	5		07/09/20 07:2			
•	ND ND	•	5.00	5		07/09/20 07:2			
ec-Butylbenzene ert-Butylbenzene	ND ND	ug/L	5.00	5 5		07/09/20 07:2			
Carbon tetrachloride	ND ND	ug/L	5.00	5		07/09/20 07:2			
Chlorobenzene	ND ND	ug/L	5.00	5		07/09/20 07:2			
		ug/L							
Dibromochloromethane	ND	ug/L	5.00	5		07/09/20 07:2			
Chloroethane	ND	ug/L	25.0	5		07/09/20 07:2			
Chloroform	ND	ug/L	25.0	5		07/09/20 07:2			
Chloromethane	ND	ug/L	12.5	5		07/09/20 07:2			
2-Chlorotoluene	ND	ug/L	5.00	5		07/09/20 07:2			
I-Chlorotoluene	ND	ug/L	5.00	5		07/09/20 07:2			
,2-Dibromo-3-chloropropane	ND	ug/L	25.0	5		07/09/20 07:2			
,2-Dibromoethane (EDB)	ND	ug/L	5.00	5		07/09/20 07:2			
Dibromomethane	ND	ug/L	5.00	5		07/09/20 07:2			
,2-Dichlorobenzene	ND	ug/L	5.00	5		07/09/20 07:2			
,3-Dichlorobenzene	ND	ug/L	5.00	5		07/09/20 07:2			
,4-Dichlorobenzene	ND	ug/L	5.00	5		07/09/20 07:2			
Dichlorodifluoromethane	ND	ug/L	25.0	5		07/09/20 07:2			
Dichlorofluoromethane	ND	ug/L	25.0	5		07/09/20 07:2			
,1-Dichloroethane	ND	ug/L	5.00	5		07/09/20 07:2			
,2-Dichloroethane	ND	ug/L	5.00	5		07/09/20 07:2			
,1-Dichloroethene	ND	ug/L	5.00	5		07/09/20 07:2			
sis-1,2-Dichloroethene	ND	ug/L	5.00	5		07/09/20 07:2			
rans-1,2-Dichloroethene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:2	4 156-60-5		
,2-Dichloropropane	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:2	4 78-87-5		
,1-Dichloropropene	ND	ug/L	5.00	5		07/09/20 07:2			
I,3-Dichloropropane	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:2	4 142-28-9		
cis-1,3-Dichloropropene	ND	ug/L	5.00	5		07/09/20 07:2			



# **ANALYTICAL RESULTS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Sample: GP-48 (8-12)	Lab ID: 1	0523661001	Collected: 07/02/2	00:80	Received: 07	7/02/20 12:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
/OA (GC/MS) 8260D	Analytical M	lethod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace Nation	nal - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	10061-02-6	
2,2-Dichloropropane	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	594-20-7	
Ethylbenzene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	98-82-8	
o-Isopropyltoluene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	99-87-6	
2-Butanone (MEK)	ND	ug/L	50.0	5	07/09/20 07:24	07/09/20 07:24	78-93-3	
Methylene Chloride	ND	ug/L	25.0	5	07/09/20 07:24	07/09/20 07:24	75-09-2	
l-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	5	07/09/20 07:24	07/09/20 07:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	1634-04-4	
laphthalene	ND	ug/L	25.0	5		07/09/20 07:24		
-Propylbenzene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	103-65-1	
Styrene	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	5.00	5	07/09/20 07:24	07/09/20 07:24	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	5.00	5		07/09/20 07:24		
,1,2-Trichlorotrifluoroethane	ND	ug/L	5.00	5		07/09/20 07:24		
etrachloroethene	ND	ug/L	5.00	5		07/09/20 07:24		
Tetrahydrofuran	ND	ug/L	25.0	5		07/09/20 07:24		
Toluene	ND	ug/L	5.00	5		07/09/20 07:24		
1,2,3-Trichlorobenzene	ND	ug/L	5.00	5		07/09/20 07:24		
,2,4-Trichlorobenzene	ND	ug/L	5.00	5		07/09/20 07:24		
I,1,1-Trichloroethane	ND	ug/L	5.00	5		07/09/20 07:24		
,1,2-Trichloroethane	ND	ug/L	5.00	5		07/09/20 07:24		
Frichloroethene	ND	ug/L	5.00	5		07/09/20 07:24		
richlorofluoromethane	ND	ug/L	25.0	5		07/09/20 07:24		
,2,3-Trichloropropane	ND	ug/L	12.5	5		07/09/20 07:24		
,2,4-Trimethylbenzene	ND	ug/L	5.00	5		07/09/20 07:24		
,3,5-Trimethylbenzene	ND	ug/L	5.00	5		07/09/20 07:24		
/inyl chloride	ND	ug/L	5.00	5		07/09/20 07:24		
(ylene (Total)	ND	ug/L	15.0	5		07/09/20 07:24		
Surrogates	ND	ug, L	10.0	J	31,00,20 01.24	0.700/20 07.24	.500 20 7	
oluene-d8 (S)	98.0	%	80.0-120	5	07/09/20 07:24	07/09/20 07:24	2037-26-5	
-Bromofluorobenzene (S)	105	%	77.0-126	5		07/09/20 07:24		
1,2-Dichloroethane-d4 (S)	102	%	70.0-130	5		07/09/20 07:24		



Project: 2606-0012 Water Gremlin

Date: 07/13/2020 12:26 PM

Sample: GP-48 (25-27)	Lab ID: 105	23661002	Collected: 07/02/2	20 09:45	Received: 07	7/02/20 12:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 17:05	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C		
1,4-Dioxane (SIM)	0.71	ug/L	0.31	1	07/02/20 17:38	07/10/20 19:42	2 123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	45	%.	30-125	1	07/02/20 17:38	07/10/20 19:42	2	
VOA (GC/MS) 8260D	•		260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/09/20 07:44	07/09/20 07:44	67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	107-05-1	
Benzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	71-43-2	
Bromobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	108-86-1	
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	75-27-4	
Bromoform	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	75-25-2	
Bromomethane	ND	ug/L	5.00	1		07/09/20 07:44		
i-Butylbenzene	ND	ug/L	1.00	1		07/09/20 07:44		
sec-Butylbenzene	ND	ug/L	1.00	1		07/09/20 07:44		
ert-Butylbenzene	ND	ug/L	1.00	1		07/09/20 07:44		
Carbon tetrachloride	ND	ug/L	1.00	1		07/09/20 07:44		
Chlorobenzene	ND	ug/L	1.00	1		07/09/20 07:44		
		•		1				
Dibromochloromethane	ND	ug/L	1.00			07/09/20 07:44		
Chloroethane	ND	ug/L	5.00	1		07/09/20 07:44		
Chloroform	ND	ug/L	5.00	1		07/09/20 07:44		
Chloromethane	ND	ug/L	2.50	1		07/09/20 07:44		
2-Chlorotoluene	ND	ug/L	1.00	1		07/09/20 07:44		
1-Chlorotoluene	ND	ug/L	1.00	1		07/09/20 07:44		
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1		07/09/20 07:44		
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1		07/09/20 07:44		
Dibromomethane	ND	ug/L	1.00	1		07/09/20 07:44		
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	107-06-2	
I,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/09/20 07:44		
1,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 07:44		
1,1-Dichloropropene	ND	ug/L	1.00	1		07/09/20 07:44		
1,3-Dichloropropane	ND	ug/L	1.00	1		07/09/20 07:44		
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 07:44			

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Sample: GP-48 (25-27)	Lab ID: 10	0523661002	Collected: 07/02/2	20 09:45	Received: 07	7/02/20 12:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Me	ethod: EPA 82	260D Preparation Me	ethod: 82	260D			
, ,	Pace Nation	al - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 07:44	07/09/20 07:44	4 78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	4 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 07:44	07/09/20 07:44	1 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	4 91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	1 109-99-9	
Toluene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	1 120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 07:44	07/09/20 07:44	4 75-69-4	
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 07:44	07/09/20 07:44	1 96-18-4	
I,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/09/20 07:44	07/09/20 07:44	4 75-01-4	
(ylene (Total)	ND	ug/L	3.00	1	07/09/20 07:44	07/09/20 07:44	1 1330-20-7	
Surrogates		J						
Toluene-d8 (S)	101	%	80.0-120	1	07/09/20 07:44	07/09/20 07:44	1 2037-26-5	
1-Bromofluorobenzene (S)	98.5	%	77.0-126	1	07/09/20 07:44	07/09/20 07:44	4 460-00-4	
1,2-Dichloroethane-d4 (S)	96.9	%	70.0-130	1	07/09/20 07:44	07/09/20 07:44	17060-07-0	



Project: 2606-0012 Water Gremlin

Date: 07/13/2020 12:26 PM

Sample: GP-48 (31-34)	Lab ID: 1052	23661003	Collected: 07/02/2	0 10:00	Received: 07	7/02/20 12:55	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
	Pace Analytical	Services -	Minneapolis						
_ead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 17:08	3 7439-92-1		
3270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytical		70E by SIM Prepara Minneapolis	ation Me	ethod: EPA Mod.	3510C			
I,4-Dioxane (SIM) Surrogates	ND	ug/L	0.25	1	07/02/20 17:38	07/10/20 20:03	3 123-91-1		
1,4-Dioxane-d8 (S)	46	%.	30-125	1	07/02/20 17:38	07/10/20 20:03	3		
/OA (GC/MS) 8260D	•		260D Preparation Me	ethod: 8	260D				
	Pace National -	Mt. Juliet							
Acetone	ND	ug/L	50.0	1	07/09/20 08:04	07/09/20 08:04	4 67-64-1		
Allyl chloride	ND	ug/L	5.00	1	07/09/20 08:04				
Benzene	ND	ug/L	1.00	1	07/09/20 08:04				
Bromobenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	1 108-86-1		
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 74-97-5		
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 75-27-4		
romoform	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 75-25-2		
Bromomethane	ND	ug/L	5.00	1	07/09/20 08:04	07/09/20 08:04	4 74-83-9		
-Butylbenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	1 104-51-8		
ec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	135-98-8		
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 98-06-6		
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 56-23-5		
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	1 108-90-7		
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	1 124-48-1		
Chloroethane	ND	ug/L	5.00	1	07/09/20 08:04	07/09/20 08:04	4 75-00-3		
Chloroform	ND	ug/L	5.00	1	07/09/20 08:04	07/09/20 08:04	4 67-66-3		
Chloromethane	ND	ug/L	2.50	1	07/09/20 08:04	07/09/20 08:04	4 74-87-3		
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	4 95-49-8		
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 08:04				
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 08:04				
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 08:04				
Dibromomethane	ND	ug/L	1.00	1	07/09/20 08:04				
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 08:04				
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 08:04				
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 08:04				
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 08:04				
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 08:04				
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 08:04				
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 08:04				
,1-Dichloroethene	ND ND	ug/L ug/L	1.00	1	07/09/20 08:04				
is-1,2-Dichloroethene	ND ND	ug/L ug/L	1.00	1	07/09/20 08:04				
rans-1,2-Dichloroethene	ND ND	ug/L ug/L	1.00	1	07/09/20 08:04				
,2-Dichloropropane	ND ND	ug/L ug/L	1.00	1	07/09/20 08:04				
	ND ND	•	1.00	1	07/09/20 08:04				
,1-Dichloropropene		ug/L							
I,3-Dichloropropane cis-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00 1.00	1 1	07/09/20 08:04 07/09/20 08:04				



# **ANALYTICAL RESULTS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Sample: GP-48 (31-34)	Lab ID: 105	23661003	Collected: 07/02/2	20 10:00	Received: 07	7/02/20 12:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
/OA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
rans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 08:04	07/09/20 08:04	78-93-3	
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 08:04			
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 08:04	07/09/20 08:04	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 08:04	07/09/20 08:04	1634-04-4	
Naphthalene	ND	ug/L	5.00	1		07/09/20 08:04		
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 08:04			
Styrene	ND	ug/L	1.00	1		07/09/20 08:04		
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 08:04			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 08:04		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/09/20 08:04		
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 08:04			
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 08:04			
Foluene	ND	ug/L	1.00	1		07/09/20 08:04		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 08:04			
1,2,4-Trichlorobenzene	ND ND	ug/L	1.00	1		07/09/20 08:04		
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 08:04			
1,1,2-Trichloroethane	ND ND	ug/L	1.00	1	07/09/20 08:04			
Frichloroethene	ND	ug/L	1.00	1		07/09/20 08:04		
Trichlorofluoromethane	ND ND	ug/L	5.00	1	07/09/20 08:04			
1,2,3-Trichloropropane	ND ND	ug/L ug/L	2.50	1		07/09/20 08:04		
1,2,4-Trimethylbenzene	ND ND	ug/L	1.00	1	07/09/20 08:04			
•	ND ND	Ū	1.00	1		07/09/20 08:04		
I,3,5-Trimethylbenzene /inyl chloride	ND ND	ug/L ug/L	1.00	1	07/09/20 08:04			
•	ND ND	•	3.00	1		07/09/20 08:04		
Kylene (Total) S <b>urrogates</b>	ND	ug/L	3.00	I	07/09/20 08:04	07/09/20 08:04	1330-20-7	
Foluene-d8 (S)	102	%	80.0-120	1	07/09/20 08:04	07/09/20 08:04	1 2037-26-5	
4-Bromofluorobenzene (S)	99.9	%	77.0-126	1		07/09/20 08:04		
1,2-Dichloroethane-d4 (S)	99.9 96.1	% %	70.0-120	1		07/09/20 08:04		



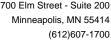
# **ANALYTICAL RESULTS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Sample: Trip Blank	Lab ID: 105	23661004	Collected: 07/02/2	20 00:00	Received: 07	7/02/20 12:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/09/20 05:12	07/09/20 05:1:	2 67-64-1	
Allyl chloride	ND	ug/L	5.00	1		07/09/20 05:1:		
Benzene	ND	ug/L	1.00	1		07/09/20 05:1:		
Bromobenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
Bromochloromethane	ND	ug/L	1.00	1		07/09/20 05:1:		
Bromodichloromethane	ND	ug/L	1.00	1		07/09/20 05:1		
Bromoform	ND	ug/L	1.00	1		07/09/20 05:1:	-	
Bromomethane	ND	ug/L	5.00	1		07/09/20 05:1:		
n-Butylbenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
sec-Butylbenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
ert-Butylbenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
Carbon tetrachloride	ND	ug/L	1.00	1		07/09/20 05:1:		
Chlorobenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
Dibromochloromethane	ND	ug/L	1.00	1		07/09/20 05:1:		
Chloroethane	ND	ug/L	5.00	1		07/09/20 05:1:		
Chloroform	ND	ug/L	5.00	1		07/09/20 05:1:		
Chloromethane	ND	ug/L	2.50	1		07/09/20 05:1:		
-Chlorotoluene	ND	ug/L	1.00	1		07/09/20 05:1:		
-Chlorotoluene	ND ND	ug/L ug/L	1.00	1		07/09/20 05:1:		
,2-Dibromo-3-chloropropane	ND ND	•	5.00	1		07/09/20 05:1:		
,2-Dibromoethane (EDB)	ND ND	ug/L ug/L	1.00	1		07/09/20 05:1:		
Dibromomethane	ND ND	-	1.00	1		07/09/20 05:1:		
	ND ND	ug/L	1.00	1		07/09/20 05:12		
,2-Dichlorobenzene	ND ND	ug/L	1.00	1		07/09/20 05:1:		
,3-Dichlorobenzene		ug/L		1				
,4-Dichlorobenzene	ND	ug/L	1.00			07/09/20 05:1:		
Dichlorodifluoromethane	ND	ug/L	5.00	1		07/09/20 05:1:		
Dichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 05:13		
,1-Dichloroethane	ND	ug/L	1.00	1		07/09/20 05:1:		
,2-Dichloroethane	ND	ug/L	1.00	1		07/09/20 05:1:		
,1-Dichloroethene	ND	ug/L	1.00	1		07/09/20 05:1:		
is-1,2-Dichloroethene	ND	ug/L	1.00	1		07/09/20 05:1:		
rans-1,2-Dichloroethene	ND	ug/L	1.00	1		07/09/20 05:1:		
,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 05:13		
,1-Dichloropropene	ND	ug/L	1.00	1		07/09/20 05:1:		
,3-Dichloropropane	ND	ug/L	1.00	1		07/09/20 05:1:		
is-1,3-Dichloropropene	ND	ug/L	1.00	1		07/09/20 05:1:		
rans-1,3-Dichloropropene	ND	ug/L	1.00	1		07/09/20 05:1:		
,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 05:1:		
thylbenzene	ND	ug/L	1.00	1		07/09/20 05:1:		
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1		07/09/20 05:1:		
lexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 05:1:		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1		07/09/20 05:1:		
-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 05:1		
-Butanone (MEK)	ND	ug/L	10.0	1		07/09/20 05:1		
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 05:1		
l-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 05:12	07/09/20 05:1:	2 108-10-1	





Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Sample: Trip Blank	Lab ID: 1052	23661004	Collected: 07/02/2	20 00:00	Received: 07	/02/20 12:55 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 8	260D			
	Pace National	- Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 05:12	07/09/20 05:12	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 05:12	07/09/20 05:12	109-99-9	
Toluene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 05:12	07/09/20 05:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 05:12	07/09/20 05:12	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/09/20 05:12	07/09/20 05:12	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/09/20 05:12	07/09/20 05:12	1330-20-7	
Surrogates								
Гoluene-d8 (S)	102	%	80.0-120	1	07/09/20 05:12	07/09/20 05:12	2037-26-5	
1-Bromofluorobenzene (S)	99.7	%	77.0-126	1	07/09/20 05:12	07/09/20 05:12	460-00-4	
1,2-Dichloroethane-d4 (S)	95.9	%	70.0-130	1	07/09/20 05:12	07/09/20 05:12	17060-07-0	





2606-0012 Water Gremlin Project:

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

QC Batch: 684956 Analysis Method: **EPA 6010D** 

QC Batch Method: **EPA 3010A** Analysis Description: 6010D Water Dissolved

> Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523661001, 10523661002, 10523661003

METHOD BLANK: Matrix: Water

Associated Lab Samples: 10523661001, 10523661002, 10523661003

> Blank Reporting

Qualifiers Parameter Units Result Limit Analyzed

Lead, Dissolved ND 10.0 07/07/20 15:36 ug/L

LABORATORY CONTROL SAMPLE: 3663949

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units

Lead, Dissolved ug/L 1000 989 99 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3663950 3663951

> MSD MS

10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits Lead, Dissolved ND 20 ug/L 1000 1000 967 1000 97 100 75-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

QC Batch: 1506121 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

> Pace National - Mt. Juliet Laboratory:

Associated Lab Samples: 10523661001, 10523661002, 10523661003, 10523661004

METHOD BLANK: R3547985-4 Matrix: Water Associated Lab Samples: 10523661001, 10523661002, 10523661003, 10523661004

B		Blank	Reporting		0 ""
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/09/20 04:04	
Benzene	ug/L	ND	1.00	07/09/20 04:04	
Bromobenzene	ug/L	ND	1.00	07/09/20 04:04	
Bromodichloromethane	ug/L	ND	1.00	07/09/20 04:04	
Bromochloromethane	ug/L	ND	1.00	07/09/20 04:04	
Bromoform	ug/L	ND	1.00	07/09/20 04:04	
Bromomethane	ug/L	ND	5.00	07/09/20 04:04	
n-Butylbenzene	ug/L	ND	1.00	07/09/20 04:04	
sec-Butylbenzene	ug/L	ND	1.00	07/09/20 04:04	
tert-Butylbenzene	ug/L	ND	1.00	07/09/20 04:04	
Carbon tetrachloride	ug/L	ND	1.00	07/09/20 04:04	
Chlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
Dibromochloromethane	ug/L	ND	1.00	07/09/20 04:04	
Chloroethane	ug/L	ND	5.00	07/09/20 04:04	
Chloroform	ug/L	ND	5.00	07/09/20 04:04	
Chloromethane	ug/L	ND	2.50	07/09/20 04:04	
2-Chlorotoluene	ug/L	ND	1.00	07/09/20 04:04	
4-Chlorotoluene	ug/L	ND	1.00	07/09/20 04:04	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/09/20 04:04	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/09/20 04:04	
Dibromomethane	ug/L	ND	1.00	07/09/20 04:04	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
Dichlorodifluoromethane	ug/L	ND	5.00	07/09/20 04:04	
Dichlorofluoromethane	ug/L	ND	5.00	07/09/20 04:04	
1,1-Dichloroethane	ug/L	ND	1.00	07/09/20 04:04	
1,2-Dichloroethane	ug/L	ND	1.00	07/09/20 04:04	
1,1-Dichloroethene	ug/L	ND	1.00	07/09/20 04:04	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/09/20 04:04	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/09/20 04:04	
1,2-Dichloropropane	ug/L	ND	1.00	07/09/20 04:04	
1,1-Dichloropropene	ug/L	ND	1.00	07/09/20 04:04	
1,3-Dichloropropane	ug/L	ND	1.00	07/09/20 04:04	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/09/20 04:04	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/09/20 04:04	
2,2-Dichloropropane	ug/L	ND	1.00	07/09/20 04:04	
Ethylbenzene	ug/L	ND	1.00	07/09/20 04:04	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/09/20 04:04	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/09/20 04:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

METHOD BLANK: R3547985-4 Matrix: Water
Associated Lab Samples: 10523661001, 10523661002, 10523661003, 10523661004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/09/20 04:04	
p-Isopropyltoluene	ug/L	ND	1.00	07/09/20 04:04	
2-Butanone (MEK)	ug/L	ND	10.0	07/09/20 04:04	
Methylene Chloride	ug/L	ND	5.00	07/09/20 04:04	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/09/20 04:04	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/09/20 04:04	
Naphthalene	ug/L	ND	5.00	07/09/20 04:04	
n-Propylbenzene	ug/L	ND	1.00	07/09/20 04:04	
Styrene	ug/L	ND	1.00	07/09/20 04:04	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/09/20 04:04	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/09/20 04:04	
Tetrachloroethene	ug/L	ND	1.00	07/09/20 04:04	
Tetrahydrofuran	ug/L	ND	5.00	07/09/20 04:04	
Toluene	ug/L	ND	1.00	07/09/20 04:04	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/09/20 04:04	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/09/20 04:04	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/09/20 04:04	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/09/20 04:04	
Trichloroethene	ug/L	ND	1.00	07/09/20 04:04	
Trichlorofluoromethane	ug/L	ND	5.00	07/09/20 04:04	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/09/20 04:04	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/09/20 04:04	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/09/20 04:04	
Vinyl chloride	ug/L	ND	1.00	07/09/20 04:04	
Xylene (Total)	ug/L	ND	3.00	07/09/20 04:04	
Allyl chloride	ug/L	ND	5.00	07/09/20 04:04	
Toluene-d8 (S)	%	103	80.0-120	07/09/20 04:04	
4-Bromofluorobenzene (S)	%	98.5	77.0-126	07/09/20 04:04	
1,2-Dichloroethane-d4 (S)	%	97.8	70.0-130	07/09/20 04:04	

LABORATORY CONTROL SAMPLE &	LCSD: R3547	985-1	R	3547985-2	!					
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	25.3	25.1	101	100	19.0-160	0.794	27	
Benzene	ug/L	5.00	4.81	4.75	96.2	95.0	70.0-123	1.26	20	
Bromobenzene	ug/L	5.00	4.39	4.12	87.8	82.4	73.0-121	6.35	20	
Bromodichloromethane	ug/L	5.00	4.53	4.46	90.6	89.2	75.0-120	1.56	20	
Bromochloromethane	ug/L	5.00	5.41	5.24	108	105	76.0-122	3.19	20	
Bromoform	ug/L	5.00	4.93	4.84	98.6	96.8	68.0-132	1.84	20	
Bromomethane	ug/L	5.00	4.98	4.90	99.6	98.0	10.0-160	1.62	25	
n-Butylbenzene	ug/L	5.00	5.64	5.28	113	106	73.0-125	6.59	20	
sec-Butylbenzene	ug/L	5.00	4.86	4.54	97.2	90.8	75.0-125	6.81	20	
tert-Butylbenzene	ug/L	5.00	4.86	4.64	97.2	92.8	76.0-124	4.63	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

LABORATORY CONTROL SAMPLE	& LCSD: R3547			R3547985-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifie
Carbon tetrachloride	ug/L	5.00	5.43	5.16	109	103	68.0-126	5.10	20	
Chlorobenzene	ug/L	5.00	4.89	4.76	97.8	95.2	80.0-121	2.69	20	
Dibromochloromethane	ug/L	5.00	5.28	5.10	106	102	77.0-125	3.47	20	
Chloroethane	ug/L	5.00	5.13	4.96	103	99.2	47.0-150	3.37	20	
Chloroform	ug/L	5.00	4.52	4.53	90.4	90.6	73.0-120	0.221	20	
Chloromethane	ug/L	5.00	5.06	4.82	101	96.4	41.0-142	4.86	20	
P-Chlorotoluene	ug/L	5.00	4.68	4.47	93.6	89.4	76.0-123	4.59	20	
-Chlorotoluene	ug/L	5.00	4.66	4.46	93.2	89.2	75.0-122	4.39	20	
,2-Dibromo-3-chloropropane	ug/L	5.00	5.54	5.40	111	108	58.0-134	2.56	20	
,2-Dibromoethane (EDB)	ug/L	5.00	5.47	5.26	109	105	80.0-122	3.91	20	
Dibromomethane	ug/L	5.00	5.09	4.99	102	99.8	80.0-120	1.98	20	
,2-Dichlorobenzene	ug/L	5.00	5.55	5.37	111	107	79.0-121	3.30	20	
,3-Dichlorobenzene	ug/L	5.00	4.99	4.79	99.8	95.8	79.0-120	4.09	20	
,4-Dichlorobenzene	ug/L	5.00	4.95	4.79	99.0	95.8	79.0-120	3.29	20	
Dichlorodifluoromethane	ug/L	5.00	4.89	4.80	97.8	96.0	51.0-149	1.86	20	
Dichlorofluoromethane	ug/L	5.00	4.47	4.36	89.4	87.2	65.0-133	2.49	20	
,1-Dichloroethane	ug/L	5.00	5.04	4.94	101	98.8	70.0-126	2.00	20	
.2-Dichloroethane	ug/L	5.00	4.69	4.72	93.8	94.4	70.0-128	0.638	20	
,1-Dichloroethene	ug/L	5.00	4.87	4.73	97.4		71.0-124	2.92	20	
is-1,2-Dichloroethene	ug/L	5.00	5.00	4.97	100	99.4	73.0-120	0.602	20	
ans-1,2-Dichloroethene	ug/L	5.00	5.02	4.97	100	99.4	73.0-120	1.00	20	
,2-Dichloropropane	ug/L	5.00	5.17	4.91	103	98.2	77.0-125	5.16	20	
,1-Dichloropropene	ug/L	5.00	4.94	4.78	98.8	95.6	74.0-126	3.29	20	
,3-Dichloropropane	ug/L	5.00	5.13	4.92	103	98.4	80.0-120	4.18	20	
is-1,3-Dichloropropene	ug/L	5.00	4.88	4.75	97.6	95.0	80.0-123	2.70	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.90	4.69	98.0	93.8	78.0-124	4.38	20	
2,2-Dichloropropane	ug/L	5.00	4.84	4.41	96.8	88.2	58.0-130	9.30	20	
Ethylbenzene	ug/L	5.00	5.00	4.92	100	98.4	79.0-123	1.61	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	5.16	5.02	103	100	66.0-130	2.75	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.10	5.88	119	118	54.0-138	1.18	20	
sopropylbenzene (Cumene)	ug/L	5.00	5.09	4.84	102	96.8	76.0-127	5.04	20	
		5.00	5.03	4.73	102	94.6	76.0-127	6.15	20	
-Isopropyltoluene P-Butanone (MEK)	ug/L ug/L	25.0	24.3	4.73 24.2	97.2	96.8	44.0-160	0.412	20	
Methylene Chloride	ug/L	5.00	4.71	4.59	94.2	91.8	67.0-120	2.58	20	
•		25.0	24.1	23.1	94.2 96.4	92.4	68.0-142	4.24	20	
-Methyl-2-pentanone (MIBK) Nethyl-tert-butyl ether	ug/L		4.97	4.76	99.4	95.2	68.0-142	4.24	20	
	ug/L	5.00		4.76 5.45			54.0-125	0.368		
laphthalene	ug/L	5.00	5.43		109	109			20	
-Propylbenzene	ug/L	5.00	4.56	4.38	91.2	87.6	77.0-124	4.03	20	
Styrene	ug/L	5.00	5.13	5.01	103	100	73.0-130	2.37	20	
,1,1,2-Tetrachloroethane	ug/L	5.00	5.31	5.06	106		75.0-125	4.82	20	
,1,2,2-Tetrachloroethane	ug/L	5.00	4.52	4.26	90.4	85.2		5.92	20	
etrachloroethene	ug/L	5.00	5.27	5.16	105		72.0-132	2.11	20	
etrahydrofuran 	ug/L	5.00	4.34	4.39	86.8		41.0-146	1.15	20	
oluene	ug/L	5.00	4.73	4.53	94.6		79.0-120	4.32	20	
,1,2-Trichlorotrifluoroethane	ug/L	5.00	4.51	4.62	90.2		69.0-132	2.41	20	
,2,3-Trichlorobenzene	ug/L	5.00	5.78	5.87	116		50.0-138	1.55	20	
,2,4-Trichlorobenzene	ug/L	5.00	5.81	5.82	116	116	57.0-137	0.172	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



## **QUALITY CONTROL DATA**

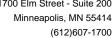
Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

LABORATORY CONTROL SAMPLE	E & LCSD: R3547	985-1	R	3547985-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.00	4.94	100	98.8	73.0-124	1.21	20	
1,1,2-Trichloroethane	ug/L	5.00	5.16	4.96	103	99.2	80.0-120	3.95	20	
Trichloroethene	ug/L	5.00	5.17	4.97	103	99.4	78.0-124	3.94	20	
Trichlorofluoromethane	ug/L	5.00	4.52	4.42	90.4	88.4	59.0-147	2.24	20	
1,2,3-Trichloropropane	ug/L	5.00	4.93	4.66	98.6	93.2	73.0-130	5.63	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.63	4.36	92.6	87.2	76.0-121	6.01	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.52	4.38	90.4	87.6	76.0-122	3.15	20	
Vinyl chloride	ug/L	5.00	5.49	5.39	110	108	67.0-131	1.84	20	
Xylene (Total)	ug/L	15.0	14.8	14.0	98.7	93.3	79.0-123	5.56	20	
Allyl chloride	ug/L	25.0	23.8	23.3	95.2	93.2	72.0-128	2.12	20	
Toluene-d8 (S)	%				98.3	100	80.0-120			
4-Bromofluorobenzene (S)	%				100	101	77.0-126			
1,2-Dichloroethane-d4 (S)	%				97.8	100	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

QC Batch: 684741 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523661001, 10523661002, 10523661003

METHOD BLANK: 3662525 Matrix: Water

Associated Lab Samples: 10523661001, 10523661002, 10523661003

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed 1,4-Dioxane (SIM) ND 0.25 07/10/20 12:06 ug/L 1,4-Dioxane-d8 (S) 40 30-125 07/10/20 12:06 %.

LABORATORY CONTROL SAMPLE: 3662526

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 9.6 96 32-128 ug/L 1,4-Dioxane-d8 (S) 30 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3662527 3662528 MS MSD 10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L 1.1 10.5 12.5 10.6 13.4 91 32-130 23 30 1,4-Dioxane-d8 (S) 47 30-125 %. 44

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **SAMPLE QUALIFIERS**

Date: 07/13/2020 12:26 PM

Sample: 10523661001

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Non-target compounds too high to run at a lower dilution.





## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0012 Water Gremlin

Pace Project No.: 10523661

Date: 07/13/2020 12:26 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523661001	GP-48 (8-12)	EPA 3010A	684956	EPA 6010D	685198
10523661002	GP-48 (25-27)	EPA 3010A	684956	EPA 6010D	685198
10523661003	GP-48 (31-34)	EPA 3010A	684956	EPA 6010D	685198
10523661001	GP-48 (8-12)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523661002	GP-48 (25-27)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523661003	GP-48 (31-34)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523661001	GP-48 (8-12)	8260D	1506121	EPA 8260D	1506121
10523661002	GP-48 (25-27)	8260D	1506121	EPA 8260D	1506121
10523661003	GP-48 (31-34)	8260D	1506121	EPA 8260D	1506121
10523661004	Trip Blank	8260D	1506121	EPA 8260D	1506121

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Face Analytical

3 (N/Y)Pace Project No./ Lab I.D. Samples Intact DRINKING WATER SAMPLE CONDITIONS 15-F # 8-2007 (N/Y)Custody Sealed Cooler OTHER 100 m 700 Jac Jac 100 of F-ALL-Q-020-« v.07. Received on tce (Y/N) MO#:10523661 GROUND WATER 6.1 125.21 Residual Chlorine (Y/N) Jemp in °C Page: RCRA 002/ REGULATORY AGENCY TIME Requested Analysis Filtered (Y/N) 水水 01/1/2 DATE Site Location STATE NPDES UST DATE Signed (MM/DD/YY): ACCEPTED BY / AFFILIATION 6931 DIESTINS t teaT sisylsnAt †N¼ Other Methanol <sub>E</sub>O<sub>S</sub>S<sub>S</sub>BN Preservatives HOBN HCI €ОИН Invoice information Company Name: <sup>†</sup>OS<sup>z</sup>H A F F TIME Reference:
Pace Project
Manager:
Pace Profile #: 1200 Section C Unpreserved :ssa M ice Quote Attention: # OF CONTAINERS SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE OF SAMPLER: SAMPLE TEMP AT COLLECTION DATE TIME COMPOSITE 人芸とはきつ JANA LANGE 7.00 DATE COLLECTED RELINQUISHED BY / AFFILIATION WAT COMPOSITE Project Nam Cather Required Project Information. SAMPLE TYPE (G=GRAB C=COMP) MATRIX CODE Project Number: (see valid codes to left) Report To: T Section B Jopy To: Valid Matrix Codes DRINKING WATER WY
WASTE WATER WW
PRODUCT P
SOIL/SOLID SL
OIL
WIPE WYP ちむ AIR OTHER TISSUE ADDITIONAL COMMENTS Z Fax: n/a (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE SAMPLE 1D Required Client Information quired Client information: Section D mpany ection A Page 22 of 25 5 6 က φ ~ ι # MaTI



hold, incorrect preservative, out of temp, incorrect containers).

# Document Name:

## Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt	Client Name:				Pro	oject #:	WC	)#:10	052	2366	1
Courier:		UPS	us		 <del>√</del> del		PM: CLIE	AKA ENT: WENC		ue Date: (	07/10/20
Tracking Number:		Sp <b>ee</b> Dee		mmerci	al See Ex	ceptions :	_				
Custody Seal on Co	oler/Box Present?	☐Yes	No	Sea	als Intact	? ∐Yes		io Biolo	gical Tis	sue Frozen?	□Yes □No 🖼
Packing Material:	Bubble Wrap	☑Bubble Ba	gs 🗌	]None	□Oth	er:			Te	emp Blank?	<b>⊉</b> ¥es □No
				Type of I	lce: 💆	∄wet [	Blue	□None	Dr	y Melted	
Did Samples Originat	te in West Virginia?	□Yes ☑No	Wei	re All Co	ntainer 1	Temps Tak	en? □Y	es 🗆 No 📮	M/A		
Temp should be above fre	eezing to 6°C Co	oler Temp Rea	d w/tem	ıp blank	K:	1.0		°C	Avera	ge Corrected	Temp
Correction Factor:	Tove Cooler 1	Temp Correcte	d w/tem	p blank	<u></u>	1.0		oc	(no	temp blank o	nly): See Exception
<b>USDA Regulated Soil</b>	: ( N/A, water san	nple/Other:		)	<b>)</b>	Date/In	itials of	Person Exan	nining C	Contents: 12	11 7/20
Did samples originate					CA, FL, GA	A, Did sa	mples or	iginate from a	foreign s	ource (internat	ionally, including
ID, LA. MS, NC, NM, N					□No			erto Rico)?	_	]Yes □No	
<b></b>	Yes to either quest	ion, ini out a K	eguiate(	2 3011 Ch	ieckiist (h	WIN-Q-53	o) and I	riciude with S	COMM		K.
Chain of Custody Prese	nt and Fillad Out?					1.			COIVIN	IEN 13:	
Chain of Custody Present			Yes Yes	No □No		1. 2.					
Sampler Name and/or S			Yes	□No	N/A	3.					
Samples Arrived within			Yes			4.			<del></del>		
Short Hold Time Analys	- W.L L		□Yes	ØN <sub>0</sub>		5.				orm/E coli  BO	D/cBOD Hex Chrom
Rush Turn Around Time	e Requested?		Ø∀es	□No		6. 5 8	<u>م بر</u>		<b></b>		*
Sufficient Volume?			<b>Ø</b> Yes	□No		7.	7				<del></del> .
Correct Containers Used	d?		Yes	□No		8.					
Pace Containers-Use	ed?		- ☑Yes	—⊟No		ļ			-		
Containers Intact?			☑Yes	□No		9.					7 74.7.
Field Filtered Volume Re	eceived for Dissolved	Tests?	☐Yes	□No	Z⁄N/A	10. Is s	ediment	visible in the	dissolve	d container?	Yes No
Is sufficient information	available to reconcil	le the samples				<del> </del>	-	/ Date/Time on			See Except
to the COC?			Yes	□No							
Matrix: ☐Water ☐Soil											
All containers needing a checked?	acid/base preservatio	n have been	□Yes	□No	□⁄N/A	12. Samp	le#	, I			
All containers needing p	reservation are foun	d to be in	□Yes	□No	<b>⊉</b> n/a	г	NaOH	□ HN	103	∏H₂SO₄	Zinc Acetate
compliance with EPA re	commendation?		∟res	Пио	ØZIN/A						
$(HNO_3, H_2SO_4, <2pH, Na$	aOH >9 Sulfide, NaOF	ł>12 Cγanide)						<b>_</b>			
Exceptions: VOA, Colifor	rm. TOC/DOC Oil and	Grease	□Yes	□No	<b>□</b> N/A	Positive f	=	=	all Par		See Except
DRO/8015 (water) and I		dicase,			9-11	Res. Chlo		INO   0-6 Roll	pH Pape	0-6 Strip	0-14 Strip
						incs. cillo	inc	0-0 Kon		0-0 3thp	0-14-5trip
Extra labels present on			□Yes	□No	ØN/A	13.					See Except
Headspace in VOA Vials	(greater than 6mm)?	?	□Yes	□No	ØÑ/A						
Trip Blank Present?	· Drocont2		Ŷes	□No	□N/A	14.	. Taka Di			1,2129	82
Trip Blank Custody Seals			⊉Yes	∐No	□n/a	l Pac	e irip Bla	ank Lot # (if p		, <u>, , , , , , , , , , , , , , , , , , </u>	
Person Contacted:	IFICATION/RESOLUT	IION				Deta /T	<b>m</b> a.	Field	d Data F	Required?	_YesNo
Comments/Resolution	•					. Date/Ti	e:	•			<del></del>
	•	_									
Project Mana	ager Review:	an	wil	) de	>		Date	<del> </del>	7/2/202	20	<del>- · ·</del>
Note: Whenever there is a		1700		e sample	es, a copy o	of this form					ication Office ( i.e ou

Labeled by:

Page 23 of 25

B227

C	Samples were ser	•	ne Subcontracti	ing Laboratory	1.				e Of O	-	-	N Yes		No			1	1	ac	e Analytical www.pacelabs.com
	ALLEY TO THE TAXABLE PROPERTY.	Workorder N	lame: 2606-00		mlin			Owr	er Re	ceive	_	-	7/2/2	2020	_	_	Req	ueste	d B	y: 7/10/2020
Ann Pac 170 Sui Min	nika Asp be Analytical Minnesota 00 Elm Street te 200 neapolis, MN 55414 one (612)607-1700		Pace Nation 12065 Leba Mt. Juliet, Ti	al non Road						A Manigue Community - TB	11.5	ce ivacorar)	Re	queste	d Ana	llysis				
1		0		Karata -		P	rese	ved Co	ntainers		00000	00078				1	1			30
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	АВЗА	VG9U			a vel nov	o you by o	AGC BA				- 1				LAB USE ONLY
1	GP-48 (8-12)	PS	7/2/2020 08:00	10523661001	Water	3	3		$\top$		7	x	$\Box$						ai.	-01
2	GP-48 (25-27)	PS	7/2/2020 09:45	10523661002	Water	3	3				7	X						100		-02
3	GP-48 (31-34)	PS	7/2/2020 10:00	10523661003	Water	3.	3				7	X								-03
4	Trip Blank	PS	7/2/2020 00:00	10523661004	Water	1				)	X 2	X								-09
5			No. of Street					, ,			$\perp$			b	19				-60	
1 2	nsfers Released By	Hac	Date/Time	Received I		iell	AF	7 1	Date	Time	7		reserve		ent di		mmen		ample	\$.
3 Co	oler Temperature on Re	eceipt 5	°C Cu	stody Seal	Dor N	y	Ĩ	Red	eived	on lo	-	8:3 Doi				Sa	mple	s Inta	act /	Y or N
	n order to maintain client This chain of custody is o		mplete as is sir		_					_				rovide in t 182				docui	ment	
	D.1	OCDEEN!	O E m Dille																	

# Pace Analytical National Center for Testing & Innovation Cooler Receipt Form Client: PACE Temperature: Cooler Received/Opened On: Monica Rifenberrick Received By: Signature: NP Yes No **Receipt Check List** COC Seal Present / Intact? COC Signed / Accurate? Bottles arrive intact? Correct bottles used? Sufficient volume sent? If Applicable VOA Zero headspace? Preservation Correct / Checked?





July 14, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com

ann Orsp

(612)607-1700 Project Manager

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Enclosures

cc: Aaron Benker, Wenck Associates

Michael Ginsbach, Minnesota Pollution Control Agency

Ben Holcomb, Wenck Associates, Inc.

Kelly Jaworski, Wenck Associates, Inc.

Thomas Johnson, Wenck Associates, Inc.

Dan Larson, Wenck Associates, Inc.

Peder Larson, Larkin Hoffman Attorneys







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680

California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959

Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486

West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

(612)607-1700



## **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524499001	SS-1	Air	07/10/20 10:47	07/10/20 16:06
10524499002	SS-1 Cert#3309	Air	07/10/20 10:47	07/10/20 16:06
10524499003	SS-2	Air	07/10/20 10:57	07/10/20 16:06
10524499004	SS-2 Cert#3726	Air	07/10/20 10:57	07/10/20 16:06
10524499005	SS-3	Air	07/10/20 11:04	07/10/20 16:06
10524499006	SS-3 Cert#0882	Air	07/10/20 11:04	07/10/20 16:06
10524499007	SS-4	Air	07/10/20 11:51	07/10/20 16:06
10524499008	SS-3 Cert#3730	Air	07/10/20 11:51	07/10/20 16:06
10524499009	Unused Can #2454	Air	07/10/20 00:00	07/10/20 16:06



## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10524499001	SS-1	TO-15	CH1, MJL	61
10524499002	SS-1 Cert#3309	TO-15	AFV	61
10524499003	SS-2	TO-15	CH1, MJL	61
10524499004	SS-2 Cert#3726	TO-15	MG2	61
10524499005	SS-3	TO-15	CH1, MJL	61
10524499006	SS-3 Cert#0882	TO-15	MJL	61
10524499007	SS-4	TO-15	CH1, MJL	61
10524499008	SS-3 Cert#3730	TO-15	AFV	61

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-1	Lab ID: 105	24499001	Collected: 07/10/2	20 10:47	Received:	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
TO15 MSV AIR	Analytical Met	nod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Acetone	719	ug/m3	23.4	3.88		07/13/20 20:2	9 67-64-1	Е
Benzene	112	ug/m3	37.7	116		07/12/20 18:2		_
Benzyl chloride	ND	ug/m3	10.2	3.88		07/13/20 20:2		
Bromodichloromethane	ND	ug/m3	5.3	3.88		07/13/20 20:2		
Bromoform	ND	ug/m3	20.4	3.88		07/13/20 20:2		
Bromomethane	5.5	ug/m3	3.1	3.88		07/13/20 20:2		
1,3-Butadiene	ND	ug/m3	1.7	3.88		07/13/20 20:2		
2-Butanone (MEK)	94.8	ug/m3	11.6	3.88		07/13/20 20:2		
Carbon disulfide	4.9	ug/m3	2.5	3.88		07/13/20 20:2		
Carbon tetrachloride	ND	ug/m3	5.0	3.88		07/13/20 20:2		
Chlorobenzene	ND	ug/m3	3.6	3.88		07/13/20 20:2		
Chloroethane	ND	ug/m3	2.1	3.88		07/13/20 20:2		
Chloroform	ND	ug/m3	1.9	3.88		07/13/20 20:2		
Chloromethane	2.4	ug/m3	1.6	3.88		07/13/20 20:2		
Cyclohexane	86.9	ug/m3	6.8	3.88		07/13/20 20:2		
Dibromochloromethane	ND	ug/m3	6.7	3.88		07/13/20 20:2		
1,2-Dibromoethane (EDB)	ND	ug/m3	3.0	3.88		07/13/20 20:2	-	
1,2-Dichlorobenzene	ND	ug/m3	4.7	3.88		07/13/20 20:2		
1,3-Dichlorobenzene	ND	ug/m3	4.7	3.88		07/13/20 20:2		
1,4-Dichlorobenzene	ND	ug/m3	11.9	3.88		07/13/20 20:2		
Dichlorodifluoromethane	ND	ug/m3	3.9	3.88		07/13/20 20:2		
1,1-Dichloroethane	ND	ug/m3	3.2	3.88		07/13/20 20:2		
1,2-Dichloroethane	ND	ug/m3	1.6	3.88		07/13/20 20:2		
1,1-Dichloroethene	ND	ug/m3	3.1	3.88		07/13/20 20:2		
cis-1,2-Dichloroethene	ND	ug/m3	3.1	3.88		07/13/20 20:2		
trans-1,2-Dichloroethene	17.2	ug/m3	3.1	3.88		07/13/20 20:2		
1,2-Dichloropropane	ND	ug/m3	3.6	3.88		07/13/20 20:2		
cis-1,3-Dichloropropene	ND	ug/m3	3.6	3.88			9 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	3.6	3.88			9 10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	5.5	3.88		07/13/20 20:2		
Ethanol	500	ug/m3	223	116		07/12/20 18:2		
Ethyl acetate	ND	ug/m3	2.8	3.88		07/13/20 20:2		
Ethylbenzene	23.7	ug/m3	3.4	3.88		07/13/20 20:2		
4-Ethyltoluene	10.2	ug/m3	9.7	3.88		07/13/20 20:2		
n-Heptane	111	ug/m3	3.2	3.88		07/13/20 20:2		
Hexachloro-1,3-butadiene	ND	ug/m3	21.0	3.88		07/13/20 20:2		
n-Hexane	127	ug/m3	2.8	3.88		07/13/20 20:2		
2-Hexanone	ND	ug/m3	16.1	3.88		07/13/20 20:2		
Methylene Chloride	31.1	ug/m3	13.7	3.88		07/13/20 20:2		
4-Methyl-2-pentanone (MIBK)	45.4	ug/m3	16.1	3.88		07/13/20 20:2		
Methyl-tert-butyl ether	43.4 ND	ug/m3	14.2	3.88		07/13/20 20:2		
Naphthalene	656	ug/m3	10.3	3.88		07/13/20 20:2		
2-Propanol	75.8	ug/m3	9.7	3.88		07/13/20 20:2		
Propylene	135	ug/m3	40.6	116		07/12/20 18:2		
Styrene	77.2	ug/m3	3.4	3.88		07/13/20 18.2		
Otyrene	11.2	ug/m3	3.4 2.7	3.88		07/13/20 20:2		





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-1	Lab ID: 105	24499001	Collected: 07/10/2	20 10:47	Received: 07	/10/20 16:06 M	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	11.9	ug/m3	2.7	3.88		07/13/20 20:29	127-18-4	
Tetrahydrofuran	151	ug/m3	69.6	116		07/12/20 18:20	109-99-9	
Toluene	153	ug/m3	3.0	3.88		07/13/20 20:29	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	29.3	3.88		07/13/20 20:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	4.3	3.88		07/13/20 20:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.2	3.88		07/13/20 20:29	79-00-5	
Trichloroethene	12.7	ug/m3	2.1	3.88		07/13/20 20:29	79-01-6	
Trichlorofluoromethane	ND	ug/m3	4.4	3.88		07/13/20 20:29	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	6.1	3.88		07/13/20 20:29	76-13-1	
1,2,4-Trimethylbenzene	41.8	ug/m3	3.9	3.88		07/13/20 20:29	95-63-6	
1,3,5-Trimethylbenzene	19.9	ug/m3	3.9	3.88		07/13/20 20:29	108-67-8	
Vinyl acetate	ND	ug/m3	2.8	3.88		07/13/20 20:29	108-05-4	
Vinyl chloride	ND	ug/m3	1.0	3.88		07/13/20 20:29	75-01-4	
m&p-Xylene	103	ug/m3	6.9	3.88		07/13/20 20:29	179601-23-1	
o-Xylene	43.5	ug/m3	3.4	3.88		07/13/20 20:29	95-47-6	

(612)607-1700



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-1 Cert#3309	Lab ID: 1	0524499002	Collected: 07/10/2	0 10:47	Received:	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
ndividual Can Certification	Analytical M	ethod: TO-15						
	Pace Analyt	ical Services -	Minneapolis					
Acetone	ND	ug/m3	6.0	1		06/16/20 11:13	3 67-64-1	
Benzene	ND	ug/m3	0.32	1		06/16/20 11:13	3 71-43-2	
Benzyl chloride	ND	ug/m3	2.6	1		06/16/20 11:13	3 100-44-7	
3romodichloromethane	ND	ug/m3	1.4	1		06/16/20 11:13	3 75-27-4	
Bromoform	ND	ug/m3	5.2	1		06/16/20 11:13	3 75-25-2	
Bromomethane	ND	ug/m3	0.79	1		06/16/20 11:13		
1,3-Butadiene	ND	ug/m3	0.45	1		06/16/20 11:13		
2-Butanone (MEK)	ND	ug/m3	3.0	1		06/16/20 11:13		
Carbon disulfide	ND	ug/m3	0.63	1		06/16/20 11:13		
Carbon tetrachloride	ND	ug/m3	1.3	1		06/16/20 11:13		
Chlorobenzene	ND	ug/m3	0.94	1		06/16/20 11:13		
Chloroethane	ND	ug/m3	0.54	1		06/16/20 11:13		
Chloroform	ND	ug/m3	0.50	1		06/16/20 11:13		
Chloromethane	ND	ug/m3	0.42	1		06/16/20 11:13	3 74-87-3	
Cyclohexane	ND	ug/m3	1.8	1		06/16/20 11:13		
Dibromochloromethane	ND	ug/m3	1.7	1		06/16/20 11:13		
,2-Dibromoethane (EDB)	ND	ug/m3	0.78	1		06/16/20 11:13		
,2-Dichlorobenzene	ND	ug/m3	1.2	1		06/16/20 11:13		
,3-Dichlorobenzene	ND	ug/m3	1.2	1		06/16/20 11:13	3 541-73-1	
,4-Dichlorobenzene	ND	ug/m3	3.1	1		06/16/20 11:13		
Dichlorodifluoromethane	ND	ug/m3	1.0	1		06/16/20 11:13		
,1-Dichloroethane	ND	ug/m3	0.82	1		06/16/20 11:13		
,2-Dichloroethane	ND	ug/m3	0.41	1		06/16/20 11:13		
1,1-Dichloroethene	ND	ug/m3	0.81	1		06/16/20 11:13		
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/16/20 11:13		
rans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/16/20 11:13		
1,2-Dichloropropane	ND	ug/m3	0.94	1		06/16/20 11:13		
cis-1,3-Dichloropropene	ND	ug/m3	0.92	1		06/16/20 11:13		
rans-1,3-Dichloropropene	ND	ug/m3	0.92	1		06/16/20 11:13		
Dichlorotetrafluoroethane	ND	ug/m3	1.4	1		06/16/20 11:13		
Ethanol	ND	ug/m3	1.9	1		06/16/20 11:13		
Ethyl acetate	ND	ug/m3	0.73	1		06/16/20 11:13		
Ethylbenzene	ND	ug/m3	0.88	1		06/16/20 11:13		
1-Ethyltoluene	ND	ug/m3	2.5	1		06/16/20 11:13		
n-Heptane	ND	ug/m3	0.83	1		06/16/20 11:13		
Hexachloro-1,3-butadiene	ND	ug/m3	5.4	1		06/16/20 11:13		
n-Hexane	ND	ug/m3	0.72	1		06/16/20 11:13		
2-Hexanone	ND	ug/m3	4.2	1		06/16/20 11:13		
Methylene Chloride	ND	ug/m3	3.5	1		06/16/20 11:13		
I-Methyl-2-pentanone (MIBK)	ND	ug/m3	4.2	1		06/16/20 11:13		
Methyl-tert-butyl ether	ND	ug/m3	3.7	1		06/16/20 11:13		
Naphthalene	ND	ug/m3	2.7	1		06/16/20 11:13		
2-Propanol	ND	ug/m3	2.5	1		06/16/20 11:13		
Propylene	ND	ug/m3	0.35	1		06/16/20 11:13		
Styrene	ND	ug/m3	0.87	1		06/16/20 11:13		





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-1 Cert#3309	Lab ID: 105	24499002	Collected: 07/10/2	0 10:47	Received: 07	7/10/20 16:06 N	/latrix: Air	•
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	ND	ug/m3	0.69	1		06/16/20 11:13	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.60	1		06/16/20 11:13	109-99-9	
Toluene	ND	ug/m3	0.77	1		06/16/20 11:13	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.5	1		06/16/20 11:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/16/20 11:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.56	1		06/16/20 11:13	79-00-5	
Trichloroethene	ND	ug/m3	0.55	1		06/16/20 11:13	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.1	1		06/16/20 11:13	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1.6	1		06/16/20 11:13	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	1.0	1		06/16/20 11:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.0	1		06/16/20 11:13	108-67-8	
Vinyl acetate	ND	ug/m3	0.72	1		06/16/20 11:13	108-05-4	
Vinyl chloride	ND	ug/m3	0.26	1		06/16/20 11:13	75-01-4	
m&p-Xylene	ND	ug/m3	1.8	1		06/16/20 11:13	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		06/16/20 11:13	95-47-6	

(612)607-1700



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-2	Lab ID: 105	24499003	Collected: 07/10/2	20 10:57	Received:	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
TO15 MSV AIR	Analytical Metl	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Acetone	661	ug/m3	21.0	3.48		07/13/20 20:5	6 67-64-1	Е
Benzene	17.8	ug/m3	1.1	3.48		07/13/20 20:5	6 71-43-2	
Benzyl chloride	ND	ug/m3	9.2	3.48		07/13/20 20:5	6 100-44-7	
Bromodichloromethane	ND	ug/m3	4.7	3.48		07/13/20 20:5	6 75-27-4	
Bromoform	ND	ug/m3	18.3	3.48		07/13/20 20:5	6 75-25-2	
Bromomethane	ND	ug/m3	2.7	3.48		07/13/20 20:5	6 74-83-9	
1,3-Butadiene	ND	ug/m3	1.6	3.48		07/13/20 20:5	6 106-99-0	
2-Butanone (MEK)	60.3	ug/m3	10.4	3.48		07/13/20 20:5	6 78-93-3	
Carbon disulfide	3.8	ug/m3	2.2	3.48		07/13/20 20:5	6 75-15-0	
Carbon tetrachloride	ND	ug/m3	4.5	3.48		07/13/20 20:5	6 56-23-5	
Chlorobenzene	ND	ug/m3	3.3	3.48		07/13/20 20:5	6 108-90-7	
Chloroethane	ND	ug/m3	1.9	3.48		07/13/20 20:5		
Chloroform	ND	ug/m3	1.7	3.48		07/13/20 20:5		
Chloromethane	ND	ug/m3	1.5	3.48		07/13/20 20:5		
Cyclohexane	23.3	ug/m3	6.1	3.48		07/13/20 20:5		
Dibromochloromethane	ND	ug/m3	6.0	3.48		07/13/20 20:5		
1,2-Dibromoethane (EDB)	ND	ug/m3	2.7	3.48		07/13/20 20:5		
1,2-Dichlorobenzene	ND	ug/m3	4.2	3.48		07/13/20 20:5		
1,3-Dichlorobenzene	ND	ug/m3	4.2	3.48		07/13/20 20:5		
1,4-Dichlorobenzene	ND	ug/m3	10.6	3.48		07/13/20 20:5		
Dichlorodifluoromethane	ND	ug/m3	3.5	3.48		07/13/20 20:5		
1,1-Dichloroethane	ND	ug/m3	2.9	3.48		07/13/20 20:5		
1,2-Dichloroethane	ND	ug/m3	1.4	3.48		07/13/20 20:5		
1,1-Dichloroethene	ND	ug/m3	2.8	3.48		07/13/20 20:5		
cis-1,2-Dichloroethene	ND	ug/m3	2.8	3.48		07/13/20 20:5		
trans-1,2-Dichloroethene	18.2	ug/m3	2.8	3.48		07/13/20 20:5		
1,2-Dichloropropane	ND	ug/m3	3.3	3.48		07/13/20 20:5		
cis-1,3-Dichloropropene	ND	ug/m3	3.2	3.48			6 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	3.2	3.48			6 10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	4.9	3.48		07/13/20 20:5		
Ethanol	1050	ug/m3	6.7	3.48		07/13/20 20:5		
Ethyl acetate	ND	ug/m3	2.6	3.48		07/13/20 20:5		
Ethylbenzene	9.8	ug/m3	3.1	3.48		07/13/20 20:5		
4-Ethyltoluene	ND	ug/m3	8.7	3.48		07/13/20 20:5		
n-Heptane	12.5	ug/m3	2.9	3.48		07/13/20 20:5		
Hexachloro-1,3-butadiene	ND	ug/m3	18.9	3.48		07/13/20 20:5		
n-Hexane	17.7	ug/m3	2.5	3.48		07/13/20 20:5		
2-Hexanone	ND	ug/m3	14.5	3.48		07/13/20 20:5		
Methylene Chloride	30.3	ug/m3	12.3	3.48		07/13/20 20:5		
4-Methyl-2-pentanone (MIBK)	30.3 ND	ug/m3	14.5	3.48		07/13/20 20:5		
Methyl-tert-butyl ether	ND	ug/m3	12.7	3.48		07/13/20 20:5		
Naphthalene	18.4	ug/m3	9.3	3.48		07/13/20 20:5		
Naprimalene 2-Propanol	53.9	-	9.3 8.7	3.48		07/13/20 20:5		
•		ug/m3						
Propylene	ND	ug/m3	1.2	3.48		07/13/20 20:5		
Styrene	ND	ug/m3	3.0	3.48		07/13/20 20:5		
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.4	3.48		07/13/20 20:5	b 79-34-5	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-2	Lab ID: 105	24499003	Collected: 07/10/2	20 10:57	Received: 07	/10/20 16:06 M	fatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	ND	ug/m3	2.4	3.48		07/13/20 20:56	127-18-4	
Tetrahydrofuran	130	ug/m3	62.4	104		07/12/20 18:45	109-99-9	
Toluene	19.1	ug/m3	2.7	3.48		07/13/20 20:56	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	26.2	3.48		07/13/20 20:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	3.9	3.48		07/13/20 20:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.9	3.48		07/13/20 20:56	79-00-5	
Trichloroethene	3.0	ug/m3	1.9	3.48		07/13/20 20:56	79-01-6	
Trichlorofluoromethane	ND	ug/m3	4.0	3.48		07/13/20 20:56	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	5.4	3.48		07/13/20 20:56	76-13-1	
1,2,4-Trimethylbenzene	13.7	ug/m3	3.5	3.48		07/13/20 20:56	95-63-6	
1,3,5-Trimethylbenzene	3.6	ug/m3	3.5	3.48		07/13/20 20:56	108-67-8	
Vinyl acetate	ND	ug/m3	2.5	3.48		07/13/20 20:56	108-05-4	
Vinyl chloride	ND	ug/m3	0.90	3.48		07/13/20 20:56	75-01-4	
m&p-Xylene	27.3	ug/m3	6.2	3.48		07/13/20 20:56	179601-23-1	
o-Xylene	11.6	ug/m3	3.1	3.48		07/13/20 20:56	95-47-6	

(612)607-1700



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-2 Cert#3726	Lab ID: 10	524499004	Collected: 07/10/2	20 10:57	Received: (	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
ndividual Can Certification	Analytical Me	thod: TO-15						
	Pace Analytic	cal Services -	Minneapolis					
Acetone	ND	ug/m3	6.0	1		07/01/20 09:30	0 67-64-1	
Benzene	ND	ug/m3	0.32	1		07/01/20 09:30	71-43-2	
Benzyl chloride	ND	ug/m3	2.6	1		07/01/20 09:30	100-44-7	
Bromodichloromethane	ND	ug/m3	1.4	1		07/01/20 09:30	75-27-4	
Bromoform	ND	ug/m3	5.2	1		07/01/20 09:30	75-25-2	
Bromomethane	ND	ug/m3	0.79	1		07/01/20 09:30		
1,3-Butadiene	ND	ug/m3	0.45	1		07/01/20 09:30		
2-Butanone (MEK)	ND	ug/m3	3.0	1		07/01/20 09:30		
Carbon disulfide	ND	ug/m3	0.63	1		07/01/20 09:30		
Carbon tetrachloride	ND	ug/m3	1.3	1		07/01/20 09:30		
Chlorobenzene	ND	ug/m3	0.94	1		07/01/20 09:30		
Chloroethane	ND	ug/m3	0.54	1		07/01/20 09:30		
Chloroform	ND	ug/m3	0.50	1		07/01/20 09:30		
Chloromethane	ND	ug/m3	0.42	1		07/01/20 09:30		
Cyclohexane	ND	ug/m3	1.8	1		07/01/20 09:30		
Dibromochloromethane	ND	ug/m3	1.7	1		07/01/20 09:30		
,2-Dibromoethane (EDB)	ND	ug/m3	0.78	1		07/01/20 09:30		
,2-Dichlorobenzene	ND	ug/m3	1.2	1		07/01/20 09:30		
,3-Dichlorobenzene	ND	ug/m3	1.2	1		07/01/20 09:30		
,4-Dichlorobenzene	ND	ug/m3	3.1	1		07/01/20 09:30		
Dichlorodifluoromethane	ND	ug/m3	1.0	1		07/01/20 09:30		
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/01/20 09:30		
,2-Dichloroethane	ND	ug/m3	0.41	1		07/01/20 09:30		
1,1-Dichloroethene	ND	ug/m3	0.81	1		07/01/20 09:30		
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/01/20 09:30		
rans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/01/20 09:30		
1,2-Dichloropropane	ND	ug/m3	0.94	1		07/01/20 09:30		
cis-1,3-Dichloropropene	ND	ug/m3	0.92	1		07/01/20 09:30		
rans-1,3-Dichloropropene	ND	ug/m3	0.92	1		07/01/20 09:30		
Dichlorotetrafluoroethane	ND	ug/m3	1.4	1		07/01/20 09:30		
Ethanol	ND	ug/m3	1.9	1		07/01/20 09:30		
Ethyl acetate	ND	ug/m3	0.73	1		07/01/20 09:30		
Ethylbenzene	ND	ug/m3	0.73	1		07/01/20 09:30		
4-Ethyltoluene	ND	ug/m3	2.5	1		07/01/20 09:30		
n-Heptane	ND	ug/m3	0.83	1		07/01/20 09:30		
Hexachloro-1,3-butadiene	ND	ug/m3	5.4	1		07/01/20 09:30		
n-Hexane	ND	ug/m3	0.72	1		07/01/20 09:30		
2-Hexanone	ND	ug/m3	4.2	1		07/01/20 09:30		
Methylene Chloride	ND	ug/m3	3.5	1		07/01/20 09:30		
I-Methyl-2-pentanone (MIBK)	ND ND	ug/m3	4.2	1		07/01/20 09:30		
	ND ND	ug/m3	3.7	1		07/01/20 09:30		
Methyl-tert-butyl ether Naphthalene	ND ND	ug/m3	3. <i>1</i> 2.7	1		07/01/20 09:30		
•	ND ND	_	2.7	1		07/01/20 09:30		
2-Propanol		ug/m3						
Propylene	ND	ug/m3	0.35	1		07/01/20 09:30		
Styrene	ND	ug/m3	0.87	1		07/01/20 09:30		
1,1,2,2-Tetrachloroethane	ND	ug/m3	0.70	1		07/01/20 09:30	79-34-5	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-2 Cert#3726	Lab ID: 105	24499004	Collected: 07/10/2	0 10:57	Received: 07/10/20	16:06 N	/latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared A	nalyzed	CAS No.	Qual
Individual Can Certification	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	ND	ug/m3	0.69	1	07/01	1/20 09:30	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.60	1	07/01	1/20 09:30	109-99-9	
Toluene	ND	ug/m3	0.77	1	07/01	1/20 09:30	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.5	1	07/01	1/20 09:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1	07/01	1/20 09:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.56	1	07/01	1/20 09:30	79-00-5	
Trichloroethene	ND	ug/m3	0.55	1	07/01	1/20 09:30	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.1	1	07/01	1/20 09:30	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1.6	1	07/01	1/20 09:30	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	1.0	1	07/01	1/20 09:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.0	1	07/01	1/20 09:30	108-67-8	
Vinyl acetate	ND	ug/m3	0.72	1	07/0	1/20 09:30	108-05-4	
Vinyl chloride	ND	ug/m3	0.26	1	07/0	1/20 09:30	75-01-4	
m&p-Xylene	ND	ug/m3	1.8	1	07/0	1/20 09:30	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1	07/01	1/20 09:30	95-47-6	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3	Lab ID: 1	10524499005	Collected: 07/10/2	20 11:04	Received:	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
TO15 MSV AIR	Analytical N	Method: TO-15						
	Pace Analy	tical Services -	Minneapolis					
Acetone	413	ug/m3	22.6	3.74		07/13/20 21:2:	3 67-64-1	
Benzene	6.0	Ū	1.2	3.74		07/13/20 21:23	3 71-43-2	
Benzyl chloride	ND	_	9.8	3.74		07/13/20 21:23	3 100-44-7	
Bromodichloromethane	ND	ug/m3	5.1	3.74		07/13/20 21:23	3 75-27-4	
Bromoform	ND	-	19.6	3.74		07/13/20 21:23	3 75-25-2	
Bromomethane	ND	ug/m3	3.0	3.74		07/13/20 21:23	3 74-83-9	
1,3-Butadiene	ND	ug/m3	1.7	3.74		07/13/20 21:23	3 106-99-0	
2-Butanone (MEK)	42.7	_	11.2	3.74		07/13/20 21:23	3 78-93-3	
Carbon disulfide	48.1	_	2.4	3.74		07/13/20 21:23	3 75-15-0	
Carbon tetrachloride	ND	Ū	4.8	3.74		07/13/20 21:23		
Chlorobenzene	ND	•	3.5	3.74		07/13/20 21:23		
Chloroethane	ND	-	2.0	3.74		07/13/20 21:23		
Chloroform	ND	_	1.9	3.74		07/13/20 21:23	3 67-66-3	
Chloromethane	ND	•	1.6	3.74		07/13/20 21:23	3 74-87-3	
Cyclohexane	30.9	-	6.5	3.74		07/13/20 21:23		
Dibromochloromethane	ND	•	6.5	3.74		07/13/20 21:2:		
,2-Dibromoethane (EDB)	ND	-	2.9	3.74		07/13/20 21:23	3 106-93-4	
I,2-Dichlorobenzene	ND	_	4.6	3.74		07/13/20 21:23		
,3-Dichlorobenzene	ND	_	4.6	3.74		07/13/20 21:23		
I,4-Dichlorobenzene	ND	Ū	11.4	3.74		07/13/20 21:23		
Dichlorodifluoromethane	ND	Ū	3.8	3.74		07/13/20 21:23		
1,1-Dichloroethane	ND	Ū	3.1	3.74		07/13/20 21:23		
,2-Dichloroethane	ND	_	1.5	3.74		07/13/20 21:23		
I,1-Dichloroethene	ND	Ū	3.0	3.74		07/13/20 21:23		
cis-1,2-Dichloroethene	ND	•	3.0	3.74		07/13/20 21:23		
rans-1,2-Dichloroethene	125	0	3.0	3.74		07/13/20 21:23		
1,2-Dichloropropane	ND	_	3.5	3.74		07/13/20 21:23		
cis-1,3-Dichloropropene	ND	_	3.5	3.74		07/13/20 21:23		
rans-1,3-Dichloropropene	ND	Ū	3.5	3.74		07/13/20 21:23		
Dichlorotetrafluoroethane	ND	•	5.3	3.74		07/13/20 21:23		
Ethanol	1040	0	7.2	3.74		07/13/20 21:23		
Ethyl acetate	ND	_	2.7	3.74		07/13/20 21:23		
Ethylbenzene	7.0	_	3.3	3.74		07/13/20 21:23		
1-Ethyltoluene	ND	_	9.4	3.74		07/13/20 21:2:		
n-Heptane	40.6	<u>-</u>	3.1	3.74		07/13/20 21:23		
Hexachloro-1,3-butadiene	ND	•	20.3	3.74		07/13/20 21:23		
n-Hexane	28.6	-	2.7	3.74		07/13/20 21:23		
2-Hexanone	ND	Ū	15.6	3.74		07/13/20 21:23		
Methylene Chloride	ND	Ū	13.2	3.74		07/13/20 21:23		
-Methyl-2-pentanone (MIBK)	38.1	Ū	15.6	3.74		07/13/20 21:23		
Methyl-tert-butyl ether	ND	•	13.7	3.74		07/13/20 21:23		
Naphthalene	ND ND	-	9.9	3.74		07/13/20 21:23		
2-Propanol	63.3	_	9.4	3.74		07/13/20 21:23		
Propylene	ND	Ū	1.3	3.74		07/13/20 21:23		
Styrene	ND ND	Ū	3.2	3.74		07/13/20 21:23		





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3	Lab ID: 105	24499005	Collected: 07/10/2	20 11:04	Received: 07	//10/20 16:06 M	fatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	8.8	ug/m3	2.6	3.74		07/13/20 21:23	127-18-4	
Tetrahydrofuran	231	ug/m3	67.2	112		07/12/20 19:10	109-99-9	
Toluene	17.4	ug/m3	2.9	3.74		07/13/20 21:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	28.2	3.74		07/13/20 21:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	4.2	3.74		07/13/20 21:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.1	3.74		07/13/20 21:23	79-00-5	
Trichloroethene	2.6	ug/m3	2.0	3.74		07/13/20 21:23	79-01-6	
Trichlorofluoromethane	6.8	ug/m3	4.3	3.74		07/13/20 21:23	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	5.8	3.74		07/13/20 21:23	76-13-1	
1,2,4-Trimethylbenzene	12.8	ug/m3	3.7	3.74		07/13/20 21:23	95-63-6	
1,3,5-Trimethylbenzene	3.8	ug/m3	3.7	3.74		07/13/20 21:23	108-67-8	
Vinyl acetate	ND	ug/m3	2.7	3.74		07/13/20 21:23	108-05-4	
Vinyl chloride	ND	ug/m3	0.97	3.74		07/13/20 21:23	75-01-4	
m&p-Xylene	26.3	ug/m3	6.6	3.74		07/13/20 21:23	179601-23-1	
o-Xylene	10.8	ug/m3	3.3	3.74		07/13/20 21:23	95-47-6	

(612)607-1700



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3 Cert#0882	Lab ID: 10	0524499006	Collected: 07/10/2	20 11:04	Received:	07/10/20 16:06	Matrix: Air	_
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
ndividual Can Certification	Analytical M	ethod: TO-15						
	Pace Analyti	cal Services -	Minneapolis					
Acetone	ND	ug/m3	6.0	1		06/15/20 08:1	4 67-64-1	
Benzene	ND	ug/m3	0.32	1		06/15/20 08:1	4 71-43-2	
Benzyl chloride	ND	ug/m3	2.6	1		06/15/20 08:1	4 100-44-7	
Bromodichloromethane	ND	ug/m3	1.4	1		06/15/20 08:1	4 75-27-4	
Bromoform	ND	ug/m3	5.2	1		06/15/20 08:1	4 75-25-2	
Bromomethane	ND	ug/m3	0.79	1		06/15/20 08:1	4 74-83-9	
1,3-Butadiene	ND	ug/m3	0.45	1		06/15/20 08:1	4 106-99-0	
2-Butanone (MEK)	ND	ug/m3	3.0	1		06/15/20 08:1	4 78-93-3	
Carbon disulfide	ND	ug/m3	0.63	1		06/15/20 08:1	4 75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	1		06/15/20 08:1	4 56-23-5	
Chlorobenzene	ND	ug/m3	0.94	1		06/15/20 08:1		
Chloroethane	ND	ug/m3	0.54	1		06/15/20 08:1		
Chloroform	ND	ug/m3	0.50	1		06/15/20 08:1		
Chloromethane	ND	ug/m3	0.42	1		06/15/20 08:1	4 74-87-3	
Cyclohexane	ND	ug/m3	1.8	1		06/15/20 08:1		
Dibromochloromethane	ND	ug/m3	1.7	1		06/15/20 08:1		
,2-Dibromoethane (EDB)	ND	ug/m3	0.78	1		06/15/20 08:1	_	
,2-Dichlorobenzene	ND	ug/m3	1.2	1		06/15/20 08:1		
,3-Dichlorobenzene	ND	ug/m3	1.2	1		06/15/20 08:1		
,4-Dichlorobenzene	ND	ug/m3	3.1	1		06/15/20 08:1		
Dichlorodifluoromethane	ND	ug/m3	1.0	1		06/15/20 08:1		
,1-Dichloroethane	ND	ug/m3	0.82	1		06/15/20 08:1		
,2-Dichloroethane	ND	ug/m3	0.41	1		06/15/20 08:1		
1,1-Dichloroethene	ND	ug/m3	0.81	1		06/15/20 08:1		
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/20 08:1		
rans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/20 08:1		
1,2-Dichloropropane	ND	ug/m3	0.94	1		06/15/20 08:1		
cis-1,3-Dichloropropene	ND	ug/m3	0.92	1			4 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/m3	0.92	1			4 10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	3.6	1		06/15/20 08:1		
Ethanol	ND	ug/m3	1.9	1		06/15/20 08:1		
Ethyl acetate	ND	ug/m3	0.73	1		06/15/20 08:1		
Ethylbenzene	ND	ug/m3	0.88	1		06/15/20 08:1		
1-Ethyltoluene	ND	ug/m3	2.5	1		06/15/20 08:1		
n-Heptane	ND	ug/m3	0.83	1		06/15/20 08:1		
Hexachloro-1,3-butadiene	ND	ug/m3	5.4	1		06/15/20 08:1		
n-Hexane	ND ND	ug/m3	0.72	1		06/15/20 08:1		
2-Hexanone	ND	ug/m3	4.2	1		06/15/20 08:1		
Methylene Chloride	ND ND	ug/m3	8.8	1		06/15/20 08:1		
I-Methyl-2-pentanone (MIBK)	ND ND	ug/m3	4.2	1		06/15/20 08:1		
	ND ND	ug/m3 ug/m3	3.7	1		06/15/20 08:1		
Methyl-tert-butyl ether	ND ND	•	3.7 2.7	1		06/15/20 08:1		
Naphthalene R Propagal		ug/m3	2.7					
2-Propanol	ND ND	ug/m3		1		06/15/20 08:1		
Propylene	ND	ug/m3	0.35	1		06/15/20 08:1		
Styrene	ND	ug/m3	0.87	1		06/15/20 08:1		
1,1,2,2-Tetrachloroethane	ND	ug/m3	3.5	1		06/15/20 08:1	4 79-34-5	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3 Cert#0882	Lab ID: 105	24499006	Collected: 07/10/2	20 11:04	Received: 07	/10/20 16:06 N	/latrix: Air	•
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Tetrachloroethene	ND	ug/m3	0.69	1		06/15/20 08:14	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.60	1		06/15/20 08:14	109-99-9	
Toluene	ND	ug/m3	0.77	1		06/15/20 08:14	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	7.5	1		06/15/20 08:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/15/20 08:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.56	1		06/15/20 08:14	79-00-5	
Trichloroethene	ND	ug/m3	0.55	1		06/15/20 08:14	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.9	1		06/15/20 08:14	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1.6	1		06/15/20 08:14	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	1.0	1		06/15/20 08:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.0	1		06/15/20 08:14	108-67-8	
Vinyl acetate	ND	ug/m3	0.72	1		06/15/20 08:14	108-05-4	
Vinyl chloride	ND	ug/m3	0.26	1		06/15/20 08:14	75-01-4	
m&p-Xylene	ND	ug/m3	1.8	1		06/15/20 08:14	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		06/15/20 08:14	95-47-6	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-4	Lab ID: 105	24499007	Collected: 07/10/2	20 11:51	Received:	07/10/20 16:06	Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
TO15 MSV AIR	Analytical Met	hod: TO-15						
	Pace Analytica	al Services -	Minneapolis					
Acetone	704	ug/m3	21.0	3.48		07/13/20 21:50	0 67-64-1	Е
Benzene	162	ug/m3	33.8	104		07/12/20 19:34	4 71-43-2	
Benzyl chloride	ND	ug/m3	9.2	3.48		07/13/20 21:50	0 100-44-7	
Bromodichloromethane	ND	ug/m3	4.7	3.48		07/13/20 21:50	0 75-27-4	
Bromoform	ND	ug/m3	18.3	3.48		07/13/20 21:50	75-25-2	
Bromomethane	ND	ug/m3	2.7	3.48		07/13/20 21:50	0 74-83-9	
1,3-Butadiene	ND	ug/m3	1.6	3.48		07/13/20 21:50	0 106-99-0	
2-Butanone (MEK)	72.9	ug/m3	10.4	3.48		07/13/20 21:50	0 78-93-3	
Carbon disulfide	8.2	ug/m3	2.2	3.48		07/13/20 21:50	0 75-15-0	
Carbon tetrachloride	ND	ug/m3	4.5	3.48		07/13/20 21:50	0 56-23-5	
Chlorobenzene	ND	ug/m3	3.3	3.48		07/13/20 21:50	0 108-90-7	
Chloroethane	ND	ug/m3	1.9	3.48		07/13/20 21:50	75-00-3	
Chloroform	ND	ug/m3	1.7	3.48		07/13/20 21:50	0 67-66-3	
Chloromethane	ND	ug/m3	1.5	3.48		07/13/20 21:50		
Cyclohexane	134	ug/m3	6.1	3.48		07/13/20 21:50		
Dibromochloromethane	ND	ug/m3	6.0	3.48		07/13/20 21:50		
1,2-Dibromoethane (EDB)	ND	ug/m3	2.7	3.48		07/13/20 21:50		
1,2-Dichlorobenzene	ND	ug/m3	4.2	3.48		07/13/20 21:50		
1,3-Dichlorobenzene	ND	ug/m3	4.2	3.48		07/13/20 21:50		
1,4-Dichlorobenzene	ND	ug/m3	10.6	3.48		07/13/20 21:50		
Dichlorodifluoromethane	ND	ug/m3	3.5	3.48		07/13/20 21:50		
1,1-Dichloroethane	ND	ug/m3	2.9	3.48		07/13/20 21:50		
1,2-Dichloroethane	ND	ug/m3	1.4	3.48		07/13/20 21:50		
1,1-Dichloroethene	ND	ug/m3	2.8	3.48		07/13/20 21:50		
cis-1,2-Dichloroethene	ND ND	ug/m3	2.8	3.48		07/13/20 21:50		
trans-1,2-Dichloroethene	57.1	ug/m3	2.8	3.48		07/13/20 21:50		
1,2-Dichloropropane	ND	ug/m3	3.3	3.48		07/13/20 21:50		
	ND ND	_	3.2	3.48		07/13/20 21:50		
cis-1,3-Dichloropropene	ND ND	ug/m3	3.2	3.48		07/13/20 21:50		
trans-1,3-Dichloropropene Dichlorotetrafluoroethane		ug/m3		3.48				
Ethanol	ND	ug/m3	4.9	3.48		07/13/20 21:50 07/13/20 21:50		
Ethyl acetate	<b>903</b> ND	ug/m3	6.7 2.6	3.48		07/13/20 21:50		
-		ug/m3						
Ethylbenzene	20.5	ug/m3	3.1	3.48		07/13/20 21:50		
4-Ethyltoluene	ND	ug/m3	8.7	3.48		07/13/20 21:50		
n-Heptane	143	ug/m3	2.9	3.48		07/13/20 21:50		
Hexachloro-1,3-butadiene	ND	ug/m3	18.9	3.48		07/13/20 21:50		
n-Hexane	207	ug/m3	2.5	3.48		07/13/20 21:50		
2-Hexanone	ND	ug/m3	14.5	3.48		07/13/20 21:50		
Methylene Chloride	17.3	ug/m3	12.3	3.48		07/13/20 21:50		
4-Methyl-2-pentanone (MIBK)	42.4	ug/m3	14.5	3.48		07/13/20 21:50		
Methyl-tert-butyl ether	ND	ug/m3	12.7	3.48		07/13/20 21:50		
Naphthalene	ND	ug/m3	9.3	3.48		07/13/20 21:50		
2-Propanol	63.3	ug/m3	8.7	3.48		07/13/20 21:50		
Propylene	292	ug/m3	36.4	104		07/12/20 19:3		
Styrene	4.0	ug/m3	3.0	3.48		07/13/20 21:50		
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.4	3.48		07/13/20 21:50	0 79-34-5	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-4	Lab ID: 10524499007		Collected: 07/10/20 11:51		Received: 07/10/20 16:06 M		Matrix: Air		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR	Analytical Method: TO-15								
	Pace Analytica	al Services -	Minneapolis						
Tetrachloroethene	6.5	ug/m3	2.4	3.48		07/13/20 21:50	127-18-4		
Tetrahydrofuran	160	ug/m3	62.4	104		07/12/20 19:34	109-99-9		
Toluene	131	ug/m3	2.7	3.48		07/13/20 21:50	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/m3	26.2	3.48		07/13/20 21:50	120-82-1		
1,1,1-Trichloroethane	ND	ug/m3	3.9	3.48		07/13/20 21:50	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	1.9	3.48		07/13/20 21:50	79-00-5		
Trichloroethene	9.4	ug/m3	1.9	3.48		07/13/20 21:50	79-01-6		
Trichlorofluoromethane	ND	ug/m3	4.0	3.48		07/13/20 21:50	75-69-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	5.4	3.48		07/13/20 21:50	76-13-1		
1,2,4-Trimethylbenzene	16.4	ug/m3	3.5	3.48		07/13/20 21:50	95-63-6		
1,3,5-Trimethylbenzene	8.1	ug/m3	3.5	3.48		07/13/20 21:50	108-67-8		
Vinyl acetate	ND	ug/m3	2.5	3.48		07/13/20 21:50	108-05-4		
Vinyl chloride	ND	ug/m3	0.90	3.48		07/13/20 21:50	75-01-4		
m&p-Xylene	43.6	ug/m3	6.2	3.48		07/13/20 21:50	179601-23-1		
o-Xylene	21.1	ug/m3	3.1	3.48		07/13/20 21:50	95-47-6		

(612)607-1700



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3 Cert#3730	Lab ID: 10	524499008	Collected: 07/10/2	0 11:51	Received:	07/10/20 16:06	Matrix: Air	_
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Individual Can Certification	Analytical Me	thod: TO-15						
	Pace Analytic	al Services -	Minneapolis					
Acetone	ND	ug/m3	6.0	1		06/30/20 10:20	6 67-64-1	
Benzene	ND	ug/m3	0.32	1		06/30/20 10:26	71-43-2	
Benzyl chloride	ND	ug/m3	2.6	1		06/30/20 10:20	6 100-44-7	
Bromodichloromethane	ND	ug/m3	1.4	1		06/30/20 10:20	6 75-27-4	
Bromoform	ND	ug/m3	5.2	1		06/30/20 10:26	6 75-25-2	
Bromomethane	ND	ug/m3	0.79	1		06/30/20 10:20		
1,3-Butadiene	ND	ug/m3	0.45	1		06/30/20 10:20	6 106-99-0	
2-Butanone (MEK)	ND	ug/m3	3.0	1		06/30/20 10:20		
Carbon disulfide	ND	ug/m3	0.63	1		06/30/20 10:26	6 75-15-0	
Carbon tetrachloride	ND	ug/m3	1.3	1		06/30/20 10:20		
Chlorobenzene	ND	ug/m3	0.94	1		06/30/20 10:20		
Chloroethane	ND	ug/m3	0.54	1		06/30/20 10:26		
Chloroform	ND	ug/m3	0.50	1		06/30/20 10:20		
Chloromethane	ND	ug/m3	0.42	1		06/30/20 10:20		
Cyclohexane	ND	ug/m3	1.8	1		06/30/20 10:26		
Dibromochloromethane	ND	ug/m3	1.7	1		06/30/20 10:20		
,2-Dibromoethane (EDB)	ND	ug/m3	0.78	1		06/30/20 10:20	_	
,2-Dichlorobenzene	ND	ug/m3	1.2	1		06/30/20 10:20		
,3-Dichlorobenzene	ND	ug/m3	1.2	1		06/30/20 10:20		
,4-Dichlorobenzene	ND	ug/m3	3.1	1		06/30/20 10:20		
Dichlorodifluoromethane	ND	ug/m3	1.0	1		06/30/20 10:20		
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/30/20 10:20		
,,- Dichloroethane	ND	ug/m3	0.41	1		06/30/20 10:20		
1,1-Dichloroethene	ND	ug/m3	0.41	1		06/30/20 10:20		
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/30/20 10:20		
rans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/30/20 10:20		
1,2-Dichloropropane	ND	ug/m3	0.94	1		06/30/20 10:20		
cis-1,3-Dichloropropene	ND	ug/m3	0.92	1		06/30/20 10:20		
rans-1,3-Dichloropropene	ND	ug/m3	0.92	1		06/30/20 10:20		
Dichlorotetrafluoroethane	ND	ug/m3	1.4	1		06/30/20 10:20		
Ethanol	ND ND	ug/m3	1.9	1		06/30/20 10:20		
Ethyl acetate	ND ND	ug/m3	0.73	1		06/30/20 10:20		
Ethylbenzene	ND	ug/m3	0.73	1		06/30/20 10:20		
I-Ethyltoluene	ND ND	ug/m3	2.5	1		06/30/20 10:20		
				1				
n-Heptane Hexachloro-1,3-butadiene	ND ND	ug/m3	0.83	1		06/30/20 10:20		
n-Hexane	ND ND	ug/m3	5.4 0.72	1 1		06/30/20 10:26 06/30/20 10:26		
r-⊓exane 2-Hexanone		ug/m3						
	ND	ug/m3	4.2	1		06/30/20 10:20		
Methylene Chloride	ND	ug/m3	3.5	1		06/30/20 10:20		
1-Methyl-2-pentanone (MIBK)	ND	ug/m3	4.2	1		06/30/20 10:20		
Methyl-tert-butyl ether	ND	ug/m3	3.7	1		06/30/20 10:20		
Naphthalene	ND	ug/m3	2.7	1		06/30/20 10:20		
2-Propanol	ND	ug/m3	2.5	1		06/30/20 10:20		
Propylene	ND	ug/m3	0.35	1		06/30/20 10:20		
Styrene	ND	ug/m3	0.87	1		06/30/20 10:26		
1,1,2,2-Tetrachloroethane	ND	ug/m3	0.70	1		06/30/20 10:26	5 79-34-5	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Sample: SS-3 Cert#3730	Lab ID: 105	Lab ID: 10524499008		Collected: 07/10/20 11:51		7/10/20 16:06 M	Matrix: Air		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
Individual Can Certification	Analytical Method: TO-15								
	Pace Analytica	al Services -	Minneapolis						
Tetrachloroethene	ND	ug/m3	0.69	1		06/30/20 10:26	127-18-4		
Tetrahydrofuran	ND	ug/m3	0.60	1		06/30/20 10:26	109-99-9		
Toluene	ND	ug/m3	0.77	1		06/30/20 10:26	108-88-3		
1,2,4-Trichlorobenzene	ND	ug/m3	7.5	1		06/30/20 10:26	120-82-1		
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/30/20 10:26	71-55-6		
1,1,2-Trichloroethane	ND	ug/m3	0.56	1		06/30/20 10:26	79-00-5		
Trichloroethene	ND	ug/m3	0.55	1		06/30/20 10:26	79-01-6		
Trichlorofluoromethane	ND	ug/m3	1.1	1		06/30/20 10:26	75-69-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1.6	1		06/30/20 10:26	76-13-1		
1,2,4-Trimethylbenzene	ND	ug/m3	1.0	1		06/30/20 10:26	95-63-6		
1,3,5-Trimethylbenzene	ND	ug/m3	1.0	1		06/30/20 10:26	108-67-8		
Vinyl acetate	ND	ug/m3	0.72	1		06/30/20 10:26	108-05-4		
Vinyl chloride	ND	ug/m3	0.26	1		06/30/20 10:26	75-01-4		
m&p-Xylene	ND	ug/m3	1.8	1		06/30/20 10:26	179601-23-1		
o-Xylene	ND	ug/m3	0.88	1		06/30/20 10:26	95-47-6		



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

QC Batch: 686499 Analysis Method: TO-15

QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524499001, 10524499003, 10524499005, 10524499007

METHOD BLANK: 3671054 Matrix: Air

Associated Lab Samples: 10524499001, 10524499003, 10524499005, 10524499007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
					— Guaimers
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane	ug/m3 ug/m3	ND ND	1.1 0.70	07/13/20 13:09 07/13/20 13:09	
1,1,2-Trichloroethane	ug/m3	ND ND	0.76	07/13/20 13:09	
1,1,2-Trichloroethane	ug/m3	ND ND	1.6	07/13/20 13:09	
1,1-Dichloroethane	ug/m3	ND ND	0.82	07/13/20 13:09	
1,1-Dichloroethane	ug/m3	ND	0.81	07/13/20 13:09	
1,2,4-Trichlorobenzene	ug/m3	ND	7.5	07/13/20 13:09	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	07/13/20 13:09	
1,2-Dibromoethane (EDB)	ug/m3	ND	0.78	07/13/20 13:09	
1,2-Dichlorobenzene	ug/m3	ND ND	1.2	07/13/20 13:09	
1,2-Dichloroethane	ug/m3	ND	0.41	07/13/20 13:09	
1,2-Dichloropropane	ug/m3	ND	0.94	07/13/20 13:09	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	07/13/20 13:09	
1,3-Butadiene	ug/m3	ND	0.45	07/13/20 13:09	
1,3-Dichlorobenzene	ug/m3	ND	1.2		
1,4-Dichlorobenzene	ug/m3	ND	3.1	07/13/20 13:09	
2-Butanone (MEK)	ug/m3	ND	3.0	07/13/20 13:09	
2-Hexanone	ug/m3	ND	4.2	07/13/20 13:09	
2-Propanol	ug/m3	ND	2.5	07/13/20 13:09	
4-Ethyltoluene	ug/m3	ND	2.5	07/13/20 13:09	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	4.2	07/13/20 13:09	
Acetone	ug/m3	ND	6.0	07/13/20 13:09	
Benzene	ug/m3	ND	0.32	07/13/20 13:09	
Benzyl chloride	ug/m3	ND	2.6	07/13/20 13:09	
Bromodichloromethane	ug/m3	ND	1.4	07/13/20 13:09	
Bromoform	ug/m3	ND	5.2	07/13/20 13:09	
Bromomethane	ug/m3	ND	0.79	07/13/20 13:09	
Carbon disulfide	ug/m3	ND	0.63	07/13/20 13:09	
Carbon tetrachloride	ug/m3	ND	1.3	07/13/20 13:09	
Chlorobenzene	ug/m3	ND	0.94	07/13/20 13:09	
Chloroethane	ug/m3	ND	0.54	07/13/20 13:09	
Chloroform	ug/m3	ND	0.50	07/13/20 13:09	
Chloromethane	ug/m3	ND	0.42	07/13/20 13:09	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	07/13/20 13:09	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	07/13/20 13:09	
Cyclohexane	ug/m3	ND	1.8	07/13/20 13:09	
Dibromochloromethane	ug/m3	ND	1.7	07/13/20 13:09	
Dichlorodifluoromethane	ug/m3	ND	1.0	07/13/20 13:09	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	07/13/20 13:09	
Ethanol	ug/m3	ND	1.9	07/13/20 13:09	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

METHOD BLANK: 3671054 Matrix: Air

Associated Lab Samples: 10524499001, 10524499003, 10524499005, 10524499007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Ethyl acetate	ug/m3	ND	0.73	07/13/20 13:09	
Ethylbenzene	ug/m3	ND	0.88	07/13/20 13:09	
Hexachloro-1,3-butadiene	ug/m3	ND	5.4	07/13/20 13:09	
m&p-Xylene	ug/m3	ND	1.8	07/13/20 13:09	
Methyl-tert-butyl ether	ug/m3	ND	3.7	07/13/20 13:09	
Methylene Chloride	ug/m3	ND	3.5	07/13/20 13:09	
n-Heptane	ug/m3	ND	0.83	07/13/20 13:09	
n-Hexane	ug/m3	ND	0.72	07/13/20 13:09	
Naphthalene	ug/m3	ND	2.7	07/13/20 13:09	
o-Xylene	ug/m3	ND	0.88	07/13/20 13:09	
Propylene	ug/m3	ND	0.35	07/13/20 13:09	
Styrene	ug/m3	ND	0.87	07/13/20 13:09	
Tetrachloroethene	ug/m3	ND	0.69	07/13/20 13:09	
Tetrahydrofuran	ug/m3	ND	0.60	07/13/20 13:09	
Toluene	ug/m3	ND	0.77	07/13/20 13:09	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	07/13/20 13:09	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	07/13/20 13:09	
Trichloroethene	ug/m3	ND	0.55	07/13/20 13:09	
Trichlorofluoromethane	ug/m3	ND	1.1	07/13/20 13:09	
Vinyl acetate	ug/m3	ND	0.72	07/13/20 13:09	
Vinyl chloride	ug/m3	ND	0.26	07/13/20 13:09	

LABORATORY CONTROL SAMPLE:	3671055					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	56.7	54.0	95	70-130	
1,1,2,2-Tetrachloroethane	ug/m3	73.4	66.5	91	70-132	
1,1,2-Trichloroethane	ug/m3	57.4	55.3	96	70-133	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.1	72.2	89	70-130	
1,1-Dichloroethane	ug/m3	43	40.5	94	70-130	
1,1-Dichloroethene	ug/m3	43.2	37.6	87	69-137	
1,2,4-Trichlorobenzene	ug/m3	81.1	90.7	112	70-130	
1,2,4-Trimethylbenzene	ug/m3	52.3	55.3	106	70-137	
1,2-Dibromoethane (EDB)	ug/m3	82.1	80.8	98	70-138	
1,2-Dichlorobenzene	ug/m3	63.2	68.3	108	70-136	
1,2-Dichloroethane	ug/m3	42.8	40.3	94	70-130	
1,2-Dichloropropane	ug/m3	48.8	48.0	98	70-132	
1,3,5-Trimethylbenzene	ug/m3	53	54.5	103	70-136	
1,3-Butadiene	ug/m3	24.6	21.4	87	67-139	
1,3-Dichlorobenzene	ug/m3	60.3	66.6	110	70-138	
1,4-Dichlorobenzene	ug/m3	66	67.6	102	70-145	
2-Butanone (MEK)	ug/m3	30	31.7	105	61-130	
2-Hexanone	ug/m3	37.6	43.3	115	70-138	
2-Propanol	ug/m3	27.5	28.9	105	70-136	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

LABORATORY CONTROL SAMPLE:	3671055					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
4-Ethyltoluene	ug/m3		54.8	104	70-142	
4-Methyl-2-pentanone (MIBK)	ug/m3	42.1	43.5	103	70-134	
Acetone	ug/m3	26.2	24.3	93	59-137	
Benzene	ug/m3	34.4	34.2	99	70-133	
Benzyl chloride	ug/m3	52.4	53.5	102	70-139	
Bromodichloromethane	ug/m3	69.1	63.7	92	70-130	
Bromoform	ug/m3	108	84.4	78	60-140	
Bromomethane	ug/m3	41	37.5	91	70-131	
Carbon disulfide	ug/m3	34.3	30.8	90	70-130	
Carbon tetrachloride	ug/m3	65.5	64.2	98	70-133	
Chlorobenzene	ug/m3	49.5	45.6	92	70-131	
Chloroethane	ug/m3	28	25.2	90	70-141	
Chloroform	ug/m3	50	45.6	91	70-130	
Chloromethane	ug/m3	22.1	19.6	89	64-137	
cis-1,2-Dichloroethene	ug/m3	41.8	42.7	102	70-132	
cis-1,3-Dichloropropene	ug/m3	46	56.2	122	70-138	
Cyclohexane	ug/m3	36.4	37.3	102	70-133	
Dibromochloromethane	ug/m3	88.7	78.3	88	70-139	
Dichlorodifluoromethane	ug/m3	54.9	49.6	90	70-130	
Dichlorotetrafluoroethane	ug/m3	77.9	67.0	86	65-133	
Ethanol	ug/m3	21.1	22.0	104	65-135	
Ethyl acetate	ug/m3	37.7	38.6	102	70-135	
Ethylbenzene	ug/m3	46.3	53.9	116	70-142	
Hexachloro-1,3-butadiene	ug/m3	116	114	98	70-134	
m&p-Xylene	ug/m3	46	45.4	99	70-141	
Methyl-tert-butyl ether	ug/m3	34.9	44.6	128	70-131	
Methylene Chloride	ug/m3	38.8	38.7	100	69-130	
n-Heptane	ug/m3	42.8	48.1	112	70-130	
n-Hexane	ug/m3	36.8	41.2	112	70-131	
Naphthalene	ug/m3	58.3	66.3	114	63-130	
o-Xylene	ug/m3	46.5	47.0	101	70-135	
Propylene	ug/m3	18.3	19.6	107	63-139	
Styrene	ug/m3	45.2	53.8	119	70-143	
Tetrachloroethene	ug/m3	74.9	68.7	92	70-136	
Tetrahydrofuran	ug/m3	29.8	34.6	116	70-137	
Toluene	ug/m3	40.4	46.0	114	70-136	
trans-1,2-Dichloroethene	ug/m3	41.9	40.2	96	70-132	
trans-1,3-Dichloropropene	ug/m3	43.4	54.3	125	70-139	
Trichloroethene	ug/m3	56.7	56.8	100	70-132	
Trichlorofluoromethane	ug/m3	59.6	49.9	84	65-136	
Vinyl acetate	ug/m3	32.5	41.3	127	66-140	
Vinyl chloride	ug/m3	28.5	24.0	84	68-141	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

SAMPLE DUPLICATE: 3671496						
		10523508009	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3		ND		25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND		25	
1,1,2-Trichloroethane	ug/m3	ND	ND		25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	.95J		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		25	
1,2,4-Trimethylbenzene	ug/m3	ND	ND		25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND		25	
1,2-Dichlorobenzene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
1,2-Dichloropropane	ug/m3	ND	ND		25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND		25	
1,3-Butadiene	ug/m3	ND	ND		25	
1,3-Dichlorobenzene	ug/m3	ND	ND		25	
1,4-Dichlorobenzene	ug/m3	ND	ND		25	
2-Butanone (MEK)	ug/m3	ND	ND		25	
2-Hexanone	ug/m3	ND	ND		25	
2-Propanol	ug/m3	ND	1.6J		25	
4-Ethyltoluene	ug/m3	ND	ND		25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND		25	
Acetone	ug/m3	14.9	14.8	0	25	
Benzene	ug/m3	1.5	1.4	5	25	
Benzyl chloride	ug/m3	ND	ND		25	
Bromodichloromethane	ug/m3	ND	ND		25	
Bromoform	ug/m3	ND	ND		25	
Bromomethane	ug/m3	ND	ND		25	
Carbon disulfide	ug/m3	1.3	1.2	2	25	
Carbon tetrachloride	ug/m3	ND	.28J		25	
Chlorobenzene	ug/m3	ND	ND		25	
Chloroethane	ug/m3	ND	ND		25	
Chloroform	ug/m3	ND	ND		25	
Chloromethane	ug/m3	1.5	1.5	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
cis-1,3-Dichloropropene	ug/m3	ND	ND		25	
Cyclohexane	ug/m3	ND	ND		25	
Dibromochloromethane	ug/m3	ND	ND		25	
Dichlorodifluoromethane	ug/m3	2.7	2.7	0	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND		25	
Ethanol	ug/m3	10.2	10.2	0	25	
Ethyl acetate	ug/m3	ND	ND		25	
Ethylbenzene	ug/m3	ND	ND		25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND		25	
m&p-Xylene	ug/m3	ND	ND		25	
Methyl-tert-butyl ether	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	ND	3.4J		25	
n-Heptane	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

SAMPLE DUPLICATE: 3671496						
		10523508009	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
n-Hexane	ug/m3	ND	.76J		25	5
Naphthalene	ug/m3	ND	2.4J		25	;
o-Xylene	ug/m3	ND	ND		25	;
Propylene	ug/m3	ND	ND		25	;
Styrene	ug/m3	ND	ND		25	;
Tetrachloroethene	ug/m3	ND	ND		25	;
Tetrahydrofuran	ug/m3	ND	ND		25	;
Toluene	ug/m3	ND	.57J		25	;
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	;
trans-1,3-Dichloropropene	ug/m3	ND	ND		25	;
Trichloroethene	ug/m3	ND	ND		25	;
Trichlorofluoromethane	ug/m3	ND	1.6J		25	;
Vinyl acetate	ug/m3	ND	ND		25	;
Vinyl chloride	ug/m3	ND	ND		25	;

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **SAMPLE QUALIFIERS**

Sample: 10524499001

[1] The Total Hydrocarbon (THC) pattern occured in the second half of the chromatogram (after toluene).

Sample: 10524499003

[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 10524499005

[1] The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

Sample: 10524499007

[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

#### **ANALYTE QUALIFIERS**

Date: 07/14/2020 01:29 PM

E Analyte concentration exceeded the calibration range. The reported result is estimated.





## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524499

Date: 07/14/2020 01:29 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524499001	SS-1	TO-15	686499		
10524499003	SS-2	TO-15	686499		
10524499005	SS-3	TO-15	686499		
10524499007	SS-4	TO-15	686499		
10524499002	SS-1 Cert#3309	TO-15	686267		
10524499004	SS-2 Cert#3726	TO-15	686267		
10524499006	SS-3 Cert#0882	TO-15	686267		
10524499008	SS-3 Cert#3730	TO-15	686267		

-C046Rev.01, 03Feb2010

901

DATE Signed (MM/DD/YY) OT/10/2020

Benjallan

AIR: CHAIN-OF-CUSTODY / A

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fife

eace Analytical

MO#:10524499

200 OOU SAMPLE CONDITIONS Clean Air Act Pace Lab ID ug/m³ mg/m³ PPBV PPMV Sealed Coole RCRA T N/A Custody Page: 8 003 305 100 Other MY DAY N/A Received on Superfund Emissions Voluntary Clean Up O° ni qmeT 47434 Z 500 TIME 1200 人 Sampling by State 7/10/20 Report Level DATE -ocation of T UST Method: ACCEPTED BY / AFFILIATION 3 5 N Control γ γ **W** ∞ Number Ġ Holcomb, Ŋ Μ o 0 5 Z Summa Number B 90 Μ Can accounting our onch win æ ~ 0 M W SAMPLER NAME AND SIGNATURE (Final Field - in Hg) 1200 Canister Pressure 1200 129 00 (Initial Field - in Hg 35 Canister Pressure Pace Project Manager/Sales Rep. 2/01/6 Pace Profile #: UCOU DAŤE 1/201 ada/r 0501 cs/01/r TIME 7/10/20 1547 1658 | 7/10/2 | 1104 1113 7/10/20 (115) ace Quote Reference: DATE COLLECTED ompany Name: RELINQUISHED BY / AFFILIATION र ठ TIME Project Name Water Greenslin SRI 2/01/L DATE Westerman Benker Project Number: 2606-0017 -0 ર્ટ Q Q PID Reading (Client only) Kally Jawowhi, Ben Purchase Order No.: 3 Required Project Information. Copy To: A and/ NEDIA CODE Report To: Shave MEDIA
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Low Volume Puff HVP
High Volume Puff PW10 /alid Media Code Section B Email To: SUSGLACYMAIN PIUAICHICEIN Address: 1800 Providen Creek Cot Requested Due Date/TAT: Standard Sample IDs MUST BE UNIQUE Section D Required Client Info **AIR SAMPLE I** Maybe Harn, My Phone: 12-710-8021 Fax: Section A Required Client Information: 55-R 55-4 Company: Nevck 8,4 9 ILEM# 8

1700 Elm Street SE, Suite 200 Minneapolis, MN 55414 Air Technical Phone: 612,607,6386

Page 28 of 29

ORIGINAL

## Pace Analytical\*

## Document Name:

Sample Condition Upon Receipt (SCUR) - Air

Document No.:

ENV-FRM-MIN4-0113 Rev.00

Document Revised: 24Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt	Client Name	:: b)en	cK	Pro	ject #:	WO#	<b>}</b> :10	5244	99	
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CLIENT NOTIFICATION/ Person Cor Comments/Res	tacted:	•			Date/	Time:		a Required?		
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	,							· · · · · · · · · · · · · · · · · · ·		
Project Manager Review	w:	$\bigcap$	mu	240		Date:	7/1	3/2020	Page	e 29 of 29

Project Manager Review:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)





July 15, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

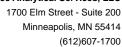
Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Osp

**Enclosures** 

cc: Aaron Benker, Wenck
Ben Holcomb, Wenck Associates
Kelly Jaworski, Wenck Associates Inc







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Maryland Certification #: 322

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064 Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081

New Jersey Certification #: MN002 New York Certification #: 11647 North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C

Wyoming UST Certification #: via A2LA 2926.01

Wisconsin Certification #: 999407970

## **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364 Kansas Certification #: E-10277 Kentucky UST Certification #: 16 Kentucky Certification #: 90010 Louisiana Certification #: Al30792

Louisiana DW Certification #: LA180010 Maine Certification #: TN0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395 Mississippi Certification #: TN00003 Missouri Certification #: 340 Montana Certification #: CERT0086 Nebraska Certification #: NE-OS-15-05

Nevada Certification #: TN-03-2002-34 New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

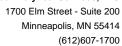
North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789





## **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523658001	GP-47 (0-1)	Solid	07/02/20 07:50	07/02/20 12:55
10523658002	GP-47 (14-15)	Solid	07/02/20 08:10	07/02/20 12:55
10523658003	GP-47 (38-40)	Water	07/02/20 10:15	07/02/20 12:55
10523658004	Trip Blank	Solid	07/02/20 00:00	07/02/20 12:55
10523658005	Trip Blank	Water	07/02/20 00:00	07/02/20 12:55





## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523658001	GP-47 (0-1)	EPA 6010D	IP	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
10523658002	GP-47 (14-15)	EPA 8260D	BMB	71	PAN
10523658003	GP-47 (38-40)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523658004	Trip Blank	EPA 8260D	BMB	71	PAN
10523658005	Trip Blank	EPA 8260D	JAH	70	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



N2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Percent Moisture

Date: 07/15/2020 11:44 AM

Sample: GP-47 (0-1) Lab ID: 10523658001 Collected: 07/02/20 07:50 Received: 07/02/20 12:55 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 6010D Preparation Method: EPA 3050B 6010D MET ICP Pace Analytical Services - Minneapolis 5.9 mg/kg 0.55 07/06/20 10:37 07/07/20 14:01 7439-92-1 Lead Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis

0.10

1

07/07/20 14:10

11.9



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Lab ID: 10523658002 Sample: GP-47 (14-15) Collected: 07/02/20 08:10 Received: 07/02/20 12:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 1.25 25 07/02/20 08:10 07/14/20 21:38 67-64-1 Acetone mg/kg Allyl chloride ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 107-05-1 Benzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 71-43-2 ND 0.0250 07/02/20 08:10 07/14/20 21:38 108-86-1 Bromobenzene mg/kg 25 ND 0.0250 07/02/20 08:10 07/14/20 21:38 74-97-5 Bromochloromethane mg/kg 25 Bromodichloromethane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 75-27-4 Bromoform ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 75-25-2 mg/kg ND 07/02/20 08:10 07/14/20 21:38 74-83-9 Bromomethane 0.125 25 mg/kg ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 98-06-6 07/02/20 08:10 07/14/20 21:38 56-23-5 Carbon tetrachloride ND mg/kg 0.0250 25 Chlorobenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 108-90-7 Dibromochloromethane ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 124-48-1 mg/kg Chloroethane ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 75-00-3 07/02/20 08:10 07/14/20 21:38 67-66-3 Chloroform ND mg/kg 0.125 25 Chloromethane ND mg/kg 0.0625 25 07/02/20 08:10 07/14/20 21:38 74-87-3 2-Chlorotoluene ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 106-43-4 ND 1,2-Dibromoethane (EDB) mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 106-93-4 07/02/20 08:10 07/14/20 21:38 96-12-8 1,2-Dibromo-3-chloropropane ND mg/kg 0.125 25 0.0250 Dibromomethane ND 25 07/02/20 08:10 07/14/20 21:38 74-95-3 mg/kg 1,2-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 106-46-7 Dichlorodifluoromethane ND 0.125 25 07/02/20 08:10 07/14/20 21:38 mg/kg 75-71-8 Dichlorofluoromethane ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 75-43-4 1,1-Dichloroethane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 75-34-3 ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 107-06-2 1.2-Dichloroethane mg/kg ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 75-35-4 1,1-Dichloroethene mg/kg ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 07/02/20 08:10 07/14/20 21:38 156-60-5 0.0250 trans-1,2-Dichloroethene mg/kg ND 25 07/02/20 08:10 07/14/20 21:38 78-87-5 1,2-Dichloropropane mg/kg 0.0250 1,3-Dichloropropane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 142-28-9 2,2-Dichloropropane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 594-20-7 1,1-Dichloropropene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 563-58-6 ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 10061-02-6 ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 98-82-8 ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.250 25 07/02/20 08:10 07/14/20 21:38 78-93-3 CC Methylene Chloride ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 75-09-2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Lab ID: 10523658002 Collected: 07/02/20 08:10 Sample: GP-47 (14-15) Received: 07/02/20 12:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 8260D Preparation Method: 5035A VOA (GC/MS) 8260D Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.250 25 07/02/20 08:10 07/14/20 21:38 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 1634-04-4 Naphthalene ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 91-20-3 n-Propylbenzene ND 0.0250 07/02/20 08:10 07/14/20 21:38 103-65-1 mg/kg 25 ND 0.0250 07/02/20 08:10 07/14/20 21:38 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0250 25 07/02/20 08:10 07/14/20 21:38 79-34-5 mg/kg ND 0.0250 07/02/20 08:10 07/14/20 21:38 127-18-4 Tetrachloroethene 25 mg/kg ND 0.125 25 07/02/20 08:10 07/14/20 21:38 109-99-9 CC Tetrahydrofuran mg/kg Toluene ND mg/kg 0.125 25 07/02/20 08:10 07/14/20 21:38 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 87-61-6 07/02/20 08:10 07/14/20 21:38 120-82-1 1,2,4-Trichlorobenzene ND mg/kg 0.0250 25 1,2,4-Trimethylbenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 71-55-6 L0 1,1,2-Trichloroethane ND 07/02/20 08:10 07/14/20 21:38 79-00-5 mg/kg 0.0250 25 Trichloroethene ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 79-01-6 Trichlorofluoromethane ND mg/kg 25 07/02/20 08:10 07/14/20 21:38 75-69-4 0.125 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0250 25 07/02/20 08:10 07/14/20 21:38 76-13-1 ND 07/02/20 08:10 07/14/20 21:38 96-18-4 1,2,3-Trichloropropane mg/kg 0.0625 25 07/02/20 08:10 07/14/20 21:38 75-01-4 ND Vinyl chloride mg/kg 0.0250 25 ND 25 07/02/20 08:10 07/14/20 21:38 1330-20-7 Xylene (Total) mg/kg 0.0750 1,4-Dioxane (p-Dioxane) ND mg/kg 2.50 25 07/02/20 08:10 07/14/20 21:38 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 106 % 70.0-130 25 07/02/20 08:10 07/14/20 21:38 17060-07-0 94.5 75.0-131 07/02/20 08:10 07/14/20 21:38 2037-26-5 Toluene-d8 (S) % 25 4-Bromofluorobenzene (S) 99.2 % 67.0-138 25 07/02/20 08:10 07/14/20 21:38 460-00-4



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/15/2020 11:44 AM

Analytical Method: EPA 6010D Preparation Method: EPA 3010   Pace Analytical Services - Minneapolis	ceived: 07/02/20	) 12:55 M	latrix: Water	
Pace Analytical Services - Minneapolis	repared A	nalyzed	CAS No.	Qual
Lead, Dissolved   ND	10A			
Analytical Method: EPA 8270E by SIM Preparation Method: El Pace Analytical Services - Minneapolis    1,4-Dioxane (SIM)				
Pace Analytical Services - Minneapolis	7/20 04:24 07/07	7/20 16:59	7439-92-1	
A-Dioxane (SIM)   ND	EPA Mod. 3510C	;		
A-Dioxane-d8 (S)				
A-Dioxane-d8 (S)	2/20 17:38 07/10	0/20 19:01	123-91-1	
Pace National - Mt. Juliet	2/20 17:38 07/10	0/20 19:01		
Pace National - Mt. Juliet				
Acetone				
Allyl chloride	0/00 04 50 07/0	0/00 04 50	07.04.4	
Senzene   ND	9/20 01:50 07/09			
Stromobenzene   ND	9/20 01:50 07/09			
Stromochloromethane   ND	9/20 01:50 07/09			
Stromodichloromethane   ND   ug/L   1.00   1   07/09/05/05/05/05/05/05/05/05/05/05/05/05/05/	9/20 01:50 07/09			
Stromoform   ND   Ug/L   1.00   1   07/09/     Stromomethane   ND   Ug/L   5.00   1   07/09/     Stromomethane   ND   Ug/L   1.00   1   07/09/     Stromomethane   ND   Ug/L   1.00   1   07/09/     Stromomethane   ND   Ug/L   1.00   1   07/09/     Stromothorate   ND   Ug/L   1.00   1   07/09/     Stromothorate   ND   Ug/L   1.00   1   07/09/     Stromothoromethane   ND   Ug/L   5.00   1   07/09/     Stromothoromethane   ND   Ug/L   5.00   1   07/09/     Stromothoromethane   ND   Ug/L   5.00   1   07/09/     Stromothoromethane   ND   Ug/L   1.00   1   07/09/     Stromomethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   Stromothoromethane   ND   Ug/L   1.00   1   07/09/     Stromomethane   ND   Ug/L   1.00   1   07/09/     Stromothoromethane   ND   Ug/L   1.00   1   07/0	9/20 01:50 07/09			
ND	9/20 01:50 07/09			
Butylbenzene	9/20 01:50 07/09			
ec-Butylbenzene ND ug/L 1.00 1 07/09/ ert-Butylbenzene ND ug/L 5.00 1 07/09/ ert-Butylbenzene ND ug/L 5.00 1 07/09/ ert-Butylbenzene ND ug/L 5.00 1 07/09/ ert-Butylbenzene ND ug/L 1.00 1 07/09/	9/20 01:50 07/09			
Sert-Butylbenzene   ND	9/20 01:50 07/09	9/20 01:50	104-51-8	
Rarbon tetrachloride       ND       ug/L       1.00       1       07/09/         Inhorobenzene       ND       ug/L       1.00       1       07/09/         Inhorobenzene       ND       ug/L       1.00       1       07/09/         Inhorothane       ND       ug/L       5.00       1       07/09/         Inhorothane       ND       ug/L       5.00       1       07/09/         Inhorothane       ND       ug/L       2.50       1       07/09/         Inhorothane       ND       ug/L       1.00       1       07/09/	9/20 01:50 07/09	9/20 01:50	135-98-8	
ND	9/20 01:50 07/09	9/20 01:50	98-06-6	
ND	9/20 01:50 07/09	9/20 01:50	56-23-5	
chloroethane         ND         ug/L         5.00         1         07/09/shloroform           chloroform         ND         ug/L         5.00         1         07/09/shloroform           chloromethane         ND         ug/L         2.50         1         07/09/shloroform           chlorotoluene         ND         ug/L         1.00         1         07/09/shloroform           chlorotoluene         ND         ug/L         1.00         1         07/09/shloroform           chlorotoluene         ND         ug/L         1.00         1         07/09/shloroform           chloromethane (EDB)         ND         ug/L         1.00         1         07/09/shloroform	9/20 01:50 07/09	9/20 01:50	108-90-7	
Chloroform         ND         ug/L         5.00         1         07/09/20           Chloromethane         ND         ug/L         2.50         1         07/09/20           Chlorotoluene         ND         ug/L         1.00         1         07/09/20           Chlorotoluene         ND         ug/L         1.00         1         07/09/20           Chlorotoluene         ND         ug/L         1.00         1         07/09/20           Chlorotomoethane (EDB)         ND	9/20 01:50 07/09	9/20 01:50	124-48-1	
Chloromethane         ND         ug/L         2.50         1         07/09/           Chlorotoluene         ND         ug/L         1.00         1         07/09/           Chlorotoluene         ND         ug/L         1.00         1         07/09/           Chlorotoluene         ND         ug/L         1.00         1         07/09/           Chlorobromorethane (EDB)         ND         ug/L         1.00         1         07/09/           Chlorobromorethane (EDB)         ND         ug/L         1.00         1         07/09/           Dibromomethane (EDB)         ND         ug/L         1.00         1         07/09/           Dibromomethane (EDB)         ND         ug/L         1.00         1         07/09/           C-Dichlorobenzene (PDB)         ND         ug/L         1.00         1         07/09/           Q-Dichlorobenzene (PDB)         ND         ug/L         1.00         1         07/09/           Q-Dichlorobenzene (PDB)         ND         ug/L         1.00         1         07/09/           Q-Dichlorodifluoromethane (PDB)         ND         ug/L         1.00         1         07/09/           Q-Dichloroethane (PDB)         ND	9/20 01:50 07/09	9/20 01:50	75-00-3	
C-Chlorotoluene         ND         ug/L         1.00         1         07/09/           C-Chlorotoluene         ND         ug/L         1.00         1         07/09/           -Chlorotoluene         ND         ug/L         5.00         1         07/09/           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1         07/09/           ,bibromomethane         ND         ug/L         1.00         1         07/09/           ,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,ichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           ,ichlorofluoromethane         ND         ug/L         1.00         1         07/09/           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/           ,aras-1,2-Dichloroethene         ND         ug/L <t< td=""><td>9/20 01:50 07/09</td><td>9/20 01:50</td><td>67-66-3</td><td></td></t<>	9/20 01:50 07/09	9/20 01:50	67-66-3	
C-Chlorotoluene         ND         ug/L         1.00         1         07/09/           C-Chlorotoluene         ND         ug/L         1.00         1         07/09/           -Chlorotoluene         ND         ug/L         5.00         1         07/09/           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1         07/09/           ,bibromomethane         ND         ug/L         1.00         1         07/09/           ,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,ichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           ,ichlorofluoromethane         ND         ug/L         1.00         1         07/09/           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/           ,aras-1,2-Dichloroethene         ND         ug/L <t< td=""><td>9/20 01:50 07/09</td><td>9/20 01:50</td><td>74-87-3</td><td></td></t<>	9/20 01:50 07/09	9/20 01:50	74-87-3	
,2-Dibromo-3-chloropropane         ND         ug/L         5.00         1         07/09/           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1         07/09/           ,bibromomethane         ND         ug/L         1.00         1         07/09/           ,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           pichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           pichlorofluoromethane         ND         ug/L         5.00         1         07/09/           pichloroethane         ND         ug/L         1.00         1         07/09/           pichloroethene         ND         ug/L         1.00	9/20 01:50 07/09	9/20 01:50	95-49-8	
,2-Dibromo-3-chloropropane         ND         ug/L         5.00         1         07/09/           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1         07/09/           ,bibromomethane         ND         ug/L         1.00         1         07/09/           ,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           pichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           pichlorofluoromethane         ND         ug/L         5.00         1         07/09/           pichloroethane         ND         ug/L         1.00         1         07/09/           pichloroethane         ND         ug/L         1.00         1         07/09/           pichloroethene         ND         ug/L         1.00         1         07/09/           pichloroethene         ND         ug/L         1.00         1         07/09/           pichloroethene         ND         ug/L         1.00	9/20 01:50 07/09	9/20 01:50	106-43-4	
,2-Dibromoethane (EDB)       ND       ug/L       1.00       1       07/09/         ,2-Dichloromomethane       ND       ug/L       1.00       1       07/09/         ,2-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         ,3-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         ,4-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         ,ichlorodifluoromethane       ND       ug/L       5.00       1       07/09/         ,1-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,2-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,1-Dichloroethene       ND       ug/L       1.00       1       07/09/         ,ars-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/         ,ars-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/	9/20 01:50 07/09			CC
bibromomethane         ND         ug/L         1.00         1         07/09/           ,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           pichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           pichlorofluoromethane         ND         ug/L         5.00         1         07/09/           ,1-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/           is-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/           ans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/	9/20 01:50 07/09			
,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           ,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/           pichlorodifluoromethane         ND         ug/L         5.00         1         07/09/           pichlorofluoromethane         ND         ug/L         5.00         1         07/09/           ,1-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/           is-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/           ans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/	9/20 01:50 07/09			
,3-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         ,4-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         Dichlorodifluoromethane       ND       ug/L       5.00       1       07/09/         Dichlorofluoromethane       ND       ug/L       5.00       1       07/09/         ,1-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,2-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,1-Dichloroethene       ND       ug/L       1.00       1       07/09/         ans-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/	9/20 01:50 07/09			
,4-Dichlorobenzene       ND       ug/L       1.00       1       07/09/         ,000 bichlorodifluoromethane       ND       ug/L       5.00       1       07/09/         ,000 bichlorofluoromethane       ND       ug/L       5.00       1       07/09/         ,1-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,2-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,1-Dichloroethene       ND       ug/L       1.00       1       07/09/         is-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/         ians-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/	9/20 01:50 07/09			
Disciplorodifluoromethane         ND         ug/L         5.00         1         07/09/09/09/09/09/09/09/09/09/09/09/09/09/	9/20 01:50 07/09			
Dicklorofluoromethane         ND         ug/L         5.00         1         07/09/           ,1-Dickloroethane         ND         ug/L         1.00         1         07/09/           ,2-Dickloroethane         ND         ug/L         1.00         1         07/09/           ,1-Dickloroethene         ND         ug/L         1.00         1         07/09/           is-1,2-Dickloroethene         ND         ug/L         1.00         1         07/09/           ans-1,2-Dickloroethene         ND         ug/L         1.00         1         07/09/	9/20 01:50 07/09			
,1-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,2-Dichloroethane       ND       ug/L       1.00       1       07/09/         ,1-Dichloroethene       ND       ug/L       1.00       1       07/09/         is-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/         ans-1,2-Dichloroethene       ND       ug/L       1.00       1       07/09/	9/20 01:50 07/09			
,2-Dichloroethane ND ug/L 1.00 1 07/09/ ,1-Dichloroethene ND ug/L 1.00 1 07/09/ is-1,2-Dichloroethene ND ug/L 1.00 1 07/09/ ans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/	9/20 01:50 07/09			
,1-Dichloroethene ND ug/L 1.00 1 07/09/ is-1,2-Dichloroethene ND ug/L 1.00 1 07/09/ ans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/	9/20 01:50    07/09 9/20 01:50    07/09			
ris-1,2-Dichloroethene ND ug/L 1.00 1 07/09/ rans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/	9/20 01:50   07/09 9/20 01:50   07/09			
rans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/	9/20 01:50   07/09 9/20 01:50   07/09			
·				
$\sim$ -Dichipropropage ND ug/L 100 1 07/09/	9/20 01:50 07/09			
• • • •	9/20 01:50 07/09			
	9/20 01:50 07/09			
	9/20 01:50   07/09 9/20 01:50   07/09			

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Sample: GP-47 (38-40)	Lab ID: 105	23658003	Collected: 07/02/2	0 10:15	Received: 07	7/02/20 12:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	594-20-7	
Ethylbenzene .	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 01:50		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 01:50	07/09/20 01:50	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 01:50	07/09/20 01:50	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 01:50	07/09/20 01:50	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 01:50	07/09/20 01:50	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 01:50			
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 01:50		CC
Foluene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	120-82-1	
I,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	79-00-5	
Frichloroethene	ND	ug/L	1.00	1	07/09/20 01:50	07/09/20 01:50	79-01-6	
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 01:50		
I,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 01:50			
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 01:50			
I,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 01:50		
/inyl chloride	ND	ug/L	1.00	1	07/09/20 01:50			
(ylene (Total)	ND	ug/L	3.00	1	07/09/20 01:50			
Surrogates		· <i>9</i> · –	2.30					
Toluene-d8 (S)	107	%	80.0-120	1	07/09/20 01:50	07/09/20 01:50	2037-26-5	
1-Bromofluorobenzene (S)	107	%	77.0-126	1	07/09/20 01:50	07/09/20 01:50	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70.0-130	1	07/09/20 01:50	07/09/20 01:50	17060-07-0	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Lab ID: 10523658004 Sample: Trip Blank Collected: 07/02/20 00:00 Received: 07/02/20 12:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 1.25 25 07/02/20 00:00 07/14/20 22:00 67-64-1 Acetone mg/kg Allyl chloride ND mg/kg 0.125 25 07/02/20 00:00 07/14/20 22:00 107-05-1 Benzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 71-43-2 ND 0.0250 07/02/20 00:00 07/14/20 22:00 108-86-1 Bromobenzene mg/kg 25 0.0250 07/02/20 00:00 07/14/20 22:00 74-97-5 Bromochloromethane ND mg/kg 25 Bromodichloromethane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 75-27-4 Bromoform ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 75-25-2 mg/kg 07/02/20 00:00 07/14/20 22:00 74-83-9 Bromomethane NΠ 0.125 25 mg/kg ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 98-06-6 07/02/20 00:00 07/14/20 22:00 56-23-5 Carbon tetrachloride ND mg/kg 0.0250 25 Chlorobenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 108-90-7 Dibromochloromethane ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 124-48-1 mg/kg Chloroethane ND mg/kg 0.125 25 07/02/20 00:00 07/14/20 22:00 75-00-3 07/02/20 00:00 07/14/20 22:00 67-66-3 Chloroform ND mg/kg 0.125 25 Chloromethane ND mg/kg 0.0625 25 07/02/20 00:00 07/14/20 22:00 74-87-3 2-Chlorotoluene ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 106-43-4 07/02/20 00:00 07/14/20 22:00 106-93-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0250 25 1,2-Dibromo-3-chloropropane ND 07/02/20 00:00 07/14/20 22:00 96-12-8 mg/kg 0.125 25 0.0250 Dibromomethane ND 25 07/02/20 00:00 07/14/20 22:00 74-95-3 mg/kg 1,2-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 106-46-7 Dichlorodifluoromethane ND 0.125 25 07/02/20 00:00 07/14/20 22:00 75-71-8 mg/kg Dichlorofluoromethane ND mg/kg 0.125 25 07/02/20 00:00 07/14/20 22:00 75-43-4 1,1-Dichloroethane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 75-34-3 ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 107-06-2 1.2-Dichloroethane mg/kg ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 75-35-4 1.1-Dichloroethene mg/kg ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 07/02/20 00:00 07/14/20 22:00 156-60-5 0.0250 trans-1,2-Dichloroethene mg/kg ND 25 07/02/20 00:00 07/14/20 22:00 78-87-5 1,2-Dichloropropane mg/kg 0.0250 1,3-Dichloropropane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 142-28-9 2,2-Dichloropropane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 594-20-7 1,1-Dichloropropene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 563-58-6 ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 10061-02-6 ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 98-82-8 ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.250 25 07/02/20 00:00 07/14/20 22:00 78-93-3 CC 07/02/20 00:00 07/14/20 22:00 75-09-2 Methylene Chloride ND mg/kg 0.125 25



**ANALYTICAL RESULTS** 

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

4-Bromofluorobenzene (S)

Date: 07/15/2020 11:44 AM

Lab ID: 10523658004 Collected: 07/02/20 00:00 Sample: Trip Blank Received: 07/02/20 12:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 8260D Preparation Method: 5035A VOA (GC/MS) 8260D Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.250 25 07/02/20 00:00 07/14/20 22:00 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 1634-04-4 Naphthalene ND mg/kg 0.125 25 07/02/20 00:00 07/14/20 22:00 91-20-3 n-Propylbenzene ND 0.0250 07/02/20 00:00 07/14/20 22:00 103-65-1 mg/kg 25 ND 0.0250 07/02/20 00:00 07/14/20 22:00 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0250 25 07/02/20 00:00 07/14/20 22:00 79-34-5 mg/kg ND 0.0250 07/02/20 00:00 07/14/20 22:00 127-18-4 Tetrachloroethene 25 mg/kg ND 0.125 25 07/02/20 00:00 07/14/20 22:00 109-99-9 CC Tetrahydrofuran mg/kg Toluene ND mg/kg 0.125 25 07/02/20 00:00 07/14/20 22:00 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 87-61-6 07/02/20 00:00 07/14/20 22:00 120-82-1 1,2,4-Trichlorobenzene ND mg/kg 0.0250 25 1,2,4-Trimethylbenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 71-55-6 L0 ND 07/02/20 00:00 07/14/20 22:00 79-00-5 1,1,2-Trichloroethane mg/kg 0.0250 25 Trichloroethene ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 79-01-6 Trichlorofluoromethane ND mg/kg 25 07/02/20 00:00 07/14/20 22:00 75-69-4 0.125 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0250 25 07/02/20 00:00 07/14/20 22:00 76-13-1 ND 07/02/20 00:00 07/14/20 22:00 96-18-4 1,2,3-Trichloropropane mg/kg 0.0625 25 ND 07/02/20 00:00 07/14/20 22:00 75-01-4 Vinyl chloride mg/kg 0.0250 25 ND 25 07/02/20 00:00 07/14/20 22:00 1330-20-7 Xylene (Total) mg/kg 0.0750 1,4-Dioxane (p-Dioxane) ND mg/kg 2.50 25 07/02/20 00:00 07/14/20 22:00 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 103 % 70.0-130 25 07/02/20 00:00 07/14/20 22:00 17060-07-0 97.3 75.0-131 07/02/20 00:00 07/14/20 22:00 2037-26-5 Toluene-d8 (S) % 25

67.0-138

25

07/02/20 00:00 07/14/20 22:00 460-00-4

104

%



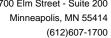
## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Sample: Trip Blank	Lab ID: 10	523658005	Collected: 07	02/20 00:	00	Received: 07	//02/20 12:55	Matrix: Water	
Parameters	Results	Units	Report Lir	nit DF		Prepared	Analyzed	CAS No.	Qua
/OA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparatio	n Method:	8260	0D			
	Pace Nationa	l - Mt. Juliet							
Acetone	ND	ug/L	5	0.0 1	٥	7/09/20 00:50	07/09/20 00:50	) 67-64-1	
Allyl chloride	ND	ug/L		.00 1			07/09/20 00:50		
Benzene	ND	ug/L		.00 1			07/09/20 00:50		
Bromobenzene	ND	ug/L		.00 1			07/09/20 00:50		
Bromochloromethane	ND	ug/L		.00 1			07/09/20 00:50		
Bromodichloromethane	ND	ug/L		.00 1			07/09/20 00:50		
Bromoform	ND	ug/L		.00 1			07/09/20 00:50		
Bromomethane	ND	ug/L		.00 1			07/09/20 00:50		
n-Butylbenzene	ND	ug/L		.00 1			07/09/20 00:50		
sec-Butylbenzene	ND	ug/L		.00 1			07/09/20 00:50		
ert-Butylbenzene	ND	ug/L		.00 1			07/09/20 00:50		
Carbon tetrachloride	ND	ug/L		.00 1			07/09/20 00:50		
Chlorobenzene	ND	ug/L		.00 1			07/09/20 00:50		
Dibromochloromethane	ND	ug/L		.00 1			07/09/20 00:50		
Chloroethane	ND	ug/L		.00 1			07/09/20 00:50		
Chloroform	ND	ug/L		.00 1			07/09/20 00:50		
Chloromethane	ND	ug/L		.50 1			07/09/20 00:50		
-Chlorotoluene	ND	ug/L		.00 1			07/09/20 00:50		
-Chlorotoluene	ND	ug/L		.00 1			07/09/20 00:50		
,2-Dibromo-3-chloropropane	ND	ug/L		.00 1			07/09/20 00:50		CC
,2-Dibromoethane (EDB)	ND	ug/L		.00 1			07/09/20 00:50		
Dibromomethane	ND	ug/L		.00 1			07/09/20 00:50		
,2-Dichlorobenzene	ND	ug/L		.00 1			07/09/20 00:50		
,3-Dichlorobenzene	ND	ug/L		.00 1			07/09/20 00:50		
,4-Dichlorobenzene	ND	ug/L		.00 1			07/09/20 00:50		
Dichlorodifluoromethane	ND	ug/L		.00 1			07/09/20 00:50		
Dichlorofluoromethane	ND	ug/L		.00 1			07/09/20 00:50		
1,1-Dichloroethane	ND	ug/L		.00 1			07/09/20 00:50		
,2-Dichloroethane	ND	ug/L		.00 1			07/09/20 00:50		
,1-Dichloroethene	ND	ug/L		.00 1			07/09/20 00:50		
sis-1,2-Dichloroethene	ND	ug/L		.00 1			07/09/20 00:50		
rans-1,2-Dichloroethene	ND	ug/L		.00 1			07/09/20 00:50		
,2-Dichloropropane	ND	ug/L	1	.00 1	0	7/09/20 00:50	07/09/20 00:50	78-87-5	
,1-Dichloropropene	ND	ug/L	1	.00 1			07/09/20 00:50		
,3-Dichloropropane	ND	ug/L		.00 1			07/09/20 00:50		
sis-1,3-Dichloropropene	ND	ug/L		.00 1			07/09/20 00:50		
rans-1,3-Dichloropropene	ND	ug/L		.00 1			07/09/20 00:50		
2,2-Dichloropropane	ND	ug/L		.00 1			07/09/20 00:50		
Ethylbenzene	ND	ug/L		.00 1			07/09/20 00:50		
Diethyl ether (Ethyl ether)	ND	ug/L		.00 1			07/09/20 00:50		
Hexachloro-1,3-butadiene	ND	ug/L		.00 1			07/09/20 00:50		
sopropylbenzene (Cumene)	ND	ug/L		.00 1			07/09/20 00:50		
o-Isopropyltoluene	ND	ug/L		.00 1			07/09/20 00:50		
2-Butanone (MEK)	ND	ug/L		0.0 1			07/09/20 00:50		CC
Methylene Chloride	ND	ug/L		.00 1			07/09/20 00:50		
4-Methyl-2-pentanone (MIBK)	ND	ug/L		0.0 1			07/09/20 00:50		CC





## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Sample: Trip Blank	Lab ID: 1052	23658005	Collected: 07/02/2	20 00:00	Received: 07	7/02/20 12:55 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 00:50	07/09/20 00:50	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 00:50	07/09/20 00:50	109-99-9	CC
Toluene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 00:50	07/09/20 00:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 00:50	07/09/20 00:50	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/09/20 00:50	07/09/20 00:50	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/09/20 00:50	07/09/20 00:50	1330-20-7	
Surrogates		•						
Toluene-d8 (S)	112	%	80.0-120	1	07/09/20 00:50	07/09/20 00:50	2037-26-5	
4-Bromofluorobenzene (S)	108	%	77.0-126	1	07/09/20 00:50	07/09/20 00:50	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70.0-130	1	07/09/20 00:50	07/09/20 00:50	17060-07-0	



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#### **QUALITY CONTROL DATA**

Project:

2606-0017 Water Gremlin SRI

10523658001

Pace Project No.:

10523658

QC Batch:

QC Batch Method:

684881

**EPA 3050B** 

Analysis Method:

**EPA 6010D** 

Analysis Description:

6010D Solids

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples:

METHOD BLANK:

Matrix: Solid

Associated Lab Samples: 10523658001

Blank Result Reporting Limit

Analyzed

Qualifiers

Lead

Units mg/kg

ND

0.47 07/07/20 13:22

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

3663722

Spike

LCS Result

LCS % Rec % Rec Limits

Lead

Date: 07/15/2020 11:44 AM

Units mg/kg Conc. 49

49.5

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3663723

MS

51.9

MSD

MS

MSD Result

MS % Rec

89

MSD

89

% Rec

Max

Lead

10523684001 Parameter Units Result mg/kg

4.6

Spike Spike Conc. Conc.

49.4

Result 48.9

3663724

50.7

101

% Rec

Limits 75-125

**RPD** RPD

Qual 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS** 

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#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

QC Batch: 684956

QC Batch Method:

**EPA 3010A** 

Analysis Method:

**EPA 6010D** 

Analysis Description:

6010D Water Dissolved

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523658003

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

10523658003

Parameter Units

Blank Result Reporting Limit

Qualifiers Analyzed

Lead, Dissolved ND 10.0 07/07/20 15:36 ug/L

LABORATORY CONTROL SAMPLE: 3663949

Parameter

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Lead, Dissolved

Date: 07/15/2020 11:44 AM

Units ug/L

1000

989

99 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3663950

MSD

10523518003 Parameter Units Result

MS Spike

MSD Result

MS % Rec

MSD % Rec % Rec Limits

Max RPD

Lead, Dissolved

ND ug/L

Conc.

Spike Conc. 1000 1000

Result 967

3663951

MS

97

1000

100

**RPD** 75-125

Qual 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

QC Batch: 685245

QC Batch Method: ASTM D2974

Analysis Method: ASTM D2974

Analysis Description:

Dry Weight / %M by ASTM D2974

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523658001

SAMPLE DUPLICATE: 3664970

10523513010 Dup Max RPD RPD Qualifiers Parameter Units Result Result 8.7 Percent Moisture % 8.7 0 30 N2

SAMPLE DUPLICATE: 3665361

Date: 07/15/2020 11:44 AM

 Parameter
 Units
 10523695008 Result
 Dup Result
 Max RPD
 Max RPD
 Qualifiers

 Percent Moisture
 %
 51.6
 52.0
 1
 30 N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

QC Batch: 1506087 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523658003, 10523658005

METHOD BLANK: R3548628-3 Matrix: Water

Associated Lab Samples: 10523658003, 10523658005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L		50.0	07/08/20 21:47	
Benzene	ug/L	ND	1.00	07/08/20 21:47	
Bromobenzene	ug/L	ND	1.00	07/08/20 21:47	
Bromodichloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromoform	ug/L	ND	1.00	07/08/20 21:47	
Bromomethane	ug/L	ND	5.00	07/08/20 21:47	
n-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
sec-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
tert-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Carbon tetrachloride	ug/L	ND	1.00	07/08/20 21:47	
Chlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dibromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Chloroethane	ug/L	ND	5.00	07/08/20 21:47	
Chloroform	ug/L	ND	5.00	07/08/20 21:47	
Chloromethane	ug/L	ND	2.50	07/08/20 21:47	
2-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
4-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/08/20 21:47	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/08/20 21:47	
Dibromomethane	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dichlorodifluoromethane	ug/L	ND	5.00	07/08/20 21:47	
Dichlorofluoromethane	ug/L	ND	5.00	07/08/20 21:47	
1,1-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
rans-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
1,1-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
1,3-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
2,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
Ethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/08/20 21:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/08/20 21:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

METHOD BLANK: R3548628-3 Matrix: Water

Associated Lab Samples: 10523658003, 10523658005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND .	1.00	07/08/20 21:47	
p-Isopropyltoluene	ug/L	ND ND	1.00	07/08/20 21:47	
2-Butanone (MEK)	ug/L	ND ND	10.0	07/08/20 21:47	
Methylene Chloride	ug/L	ND ND	5.00	07/08/20 21:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND ND	10.0	07/08/20 21:47	
Methyl-tert-butyl ether	•	ND ND	1.00	07/08/20 21:47	
Naphthalene	ug/L ug/L	ND ND	5.00	07/08/20 21:47	
n-Propylbenzene	ug/L	ND ND	1.00	07/08/20 21:47	
Styrene	ug/L	ND ND	1.00	07/08/20 21:47	
1,1,1,2-Tetrachloroethane	ug/L	ND ND	1.00	07/08/20 21:47	
1,1,2-Tetrachioroethane	·	ND ND	1.00	07/08/20 21:47	
Tetrachloroethene	ug/L ug/L	ND ND	1.00	07/08/20 21:47	
Tetrahydrofuran	ug/L	ND ND	5.00	07/08/20 21:47	
Toluene	ug/L	ND ND	1.00	07/08/20 21:47	
1,1,2-Trichlorotrifluoroethane	-	ND ND	1.00	07/08/20 21:47	
1,2,3-Trichlorobenzene	ug/L ug/L	ND ND	1.00	07/08/20 21:47	
1,2,4-Trichlorobenzene	•	ND ND	1.00	07/08/20 21:47	
1,1,1-Trichloroethane	ug/L ug/L	ND ND	1.00	07/08/20 21:47	
, ,	-	ND ND	1.00	07/08/20 21:47	
1,1,2-Trichloroethane Trichloroethene	ug/L	ND ND	1.00	07/08/20 21:47	
Trichlorofluoromethane	ug/L				
	ug/L	ND	5.00 2.50	07/08/20 21:47 07/08/20 21:47	
1,2,3-Trichloropropane	ug/L	ND			
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Vinyl chloride	ug/L	ND	1.00	07/08/20 21:47	
Xylene (Total)	ug/L	ND	3.00	07/08/20 21:47	
Allyl chloride	ug/L	ND	5.00	07/08/20 21:47	
Toluene-d8 (S)	%	105	80.0-120	07/08/20 21:47	
4-Bromofluorobenzene (S)	%	104	77.0-126	07/08/20 21:47	
1,2-Dichloroethane-d4 (S)	%	110	70.0-130	07/08/20 21:47	

LABORATORY CONTROL SAMPLE &	R	R3548628-2								
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	21.3	20.6	85.2	82.4	19.0-160	3.34	27	
Benzene	ug/L	5.00	5.08	4.64	102	92.8	70.0-123	9.05	20	
Bromobenzene	ug/L	5.00	4.41	4.42	88.2	88.4	73.0-121	0.227	20	
Bromodichloromethane	ug/L	5.00	5.27	4.78	105	95.6	75.0-120	9.75	20	
Bromochloromethane	ug/L	5.00	6.03	5.59	121	112	76.0-122	7.57	20	
Bromoform	ug/L	5.00	4.66	4.98	93.2	99.6	68.0-132	6.64	20	
Bromomethane	ug/L	5.00	7.85	7.96	157	159	10.0-160	1.39	25	
n-Butylbenzene	ug/L	5.00	4.29	4.32	85.8	86.4	73.0-125	0.697	20	
sec-Butylbenzene	ug/L	5.00	4.44	4.38	88.8	87.6	75.0-125	1.36	20	
tert-Butylbenzene	ug/L	5.00	4.70	4.70	94.0	94.0	76.0-124	0.00	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

ABORATORY CONTROL SAMPLE &	LCSD: R3548	8628-1		3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec	Max		
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD .	RPD	Qualifier
Carbon tetrachloride	ug/L	5.00	5.48	5.03	110	101	68.0-126	8.56	20	
Chlorobenzene	ug/L	5.00	4.90	5.13	98.0	103	80.0-121	4.59	20	
Dibromochloromethane	ug/L	5.00	4.68	5.17	93.6	103	77.0-125	9.95	20	
Chloroethane	ug/L	5.00	5.63	4.82	113	96.4	47.0-150	15.5	20	
Chloroform	ug/L	5.00	5.05	4.76	101	95.2	73.0-120	5.91	20	
Chloromethane	ug/L	5.00	5.38	5.16	108	103	41.0-142	4.17	20	
P-Chlorotoluene	ug/L	5.00	4.52	4.65	90.4	93.0	76.0-123	2.84	20	
-Chlorotoluene	ug/L	5.00	4.67	4.66	93.4	93.2	75.0-122	0.214	20	
,2-Dibromo-3-chloropropane	ug/L	5.00	3.88	4.17	77.6	83.4	58.0-134	7.20	20	
,2-Dibromoethane (EDB)	ug/L	5.00	4.82	4.86	96.4	97.2	80.0-122	0.826	20	
Dibromomethane	ug/L	5.00	5.17	4.82	103	96.4	80.0-120	7.01	20	
,2-Dichlorobenzene	ug/L	5.00	4.60	4.52	92.0	90.4	79.0-121	1.75	20	
,3-Dichlorobenzene	ug/L	5.00	4.80	5.02	96.0	100	79.0-120	4.48	20	
,4-Dichlorobenzene	ug/L	5.00	4.75	4.75	95.0	95.0	79.0-120	0.00	20	
Dichlorodifluoromethane	ug/L	5.00	4.82	4.40	96.4	88.0	51.0-149	9.11	20	
Dichlorofluoromethane	ug/L	5.00	5.32	4.91	106	98.2	65.0-133	8.02	20	
.1-Dichloroethane	ug/L	5.00	4.44	4.36	88.8		70.0-126	1.82	20	
.2-Dichloroethane	ug/L	5.00	5.14	5.06	103	101	70.0-128	1.57	20	
,1-Dichloroethene	ug/L	5.00	5.40	4.91	108		71.0-124	9.51	20	
is-1,2-Dichloroethene	ug/L	5.00	5.01	5.01	100	100	73.0-120	0.00	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.35	5.18	107	104	73.0-120	3.23	20	
,2-Dichloropropane	ug/L	5.00	4.10	4.59	82.0	91.8	77.0-125	11.3	20	
,1-Dichloropropene	ug/L	5.00	5.27	4.79	105	95.8	74.0-126	9.54	20	
,3-Dichloropropane	ug/L	5.00	4.80	4.89	96.0	97.8	80.0-120	1.86	20	
sis-1,3-Dichloropropene	ug/L	5.00	5.18	4.48	104	89.6	80.0-123	14.5	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.37	4.60	87.4	92.0	78.0-124	5.13	20	
2,2-Dichloropropane	ug/L	5.00	5.31	5.25	106	105	58.0-130	1.14	20	
Ethylbenzene	ug/L	5.00	4.63	4.73	92.6	94.6	79.0-123	2.14	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.43	4.13	88.6	82.6	66.0-130	7.01	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.24	5.15	105	103	54.0-138	1.73	20	
sopropylbenzene (Cumene)	ug/L	5.00	4.80	4.72	96.0	94.4	76.0-127	1.68	20	
-Isopropyltoluene	ug/L	5.00	4.60	4.67	92.0	93.4	76.0-127	1.51	20	
P-Butanone (MEK)	ug/L	25.0	19.4	19.1	77.6	76.4	44.0-160	1.56	20	
Methylene Chloride	ug/L	5.00	4.72	4.61	94.4	92.2	67.0-120	2.36	20	
-Methyl-2-pentanone (MIBK)	ug/L	25.0	18.8	19.4	75.2	77.6	68.0-142	3.14	20	
Nethyl-tert-butyl ether	ug/L	5.00	5.17	4.83	103	96.6	68.0-142	6.80	20	
Vaphthalene	ug/L	5.00	3.17	3.89	79.6	77.8	54.0-135	2.29	20	
ı-Propylbenzene	ug/L ug/L	5.00	4.38	4.46	87.6		77.0-124	1.81	20	
Styrene	ug/L ug/L	5.00	4.38	4.40	83.6		73.0-124	5.36	20	
,1,1,2-Tetrachloroethane	ug/L ug/L	5.00	5.08	5.24	102		75.0-130 75.0-125	3.10	20	
,1,2,2-Tetrachloroethane	ug/L	5.00	4.34	4.37	86.8	87.4		0.689	20	
etrachloroethene	ug/L ug/L	5.00	5.40	5.10	108		72.0-132	5.71	20	
etrachioroethene etrahydrofuran	-	5.00	3.68	3.10	73.6		41.0-146	5.71 11.5	20	
•	ug/L									
oluene	ug/L	5.00	4.62	4.76	92.4		79.0-120	2.99	20	
,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.04	4.59	101		69.0-132	9.35	20	
,2,3-Trichlorobenzene ,2,4-Trichlorobenzene	ug/L ug/L	5.00 5.00	4.32 4.22	4.56 4.38	86.4 84.4	91.2 87.6	50.0-138 57.0-137	5.41 3.72	20 20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

LABORATORY CONTROL SAMPLE	& LCSD: R3548	628-1	R	3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	5.28	5.02	106	100	73.0-124	5.05	20	
1,1,2-Trichloroethane	ug/L	5.00	4.86	5.01	97.2	100	80.0-120	3.04	20	
Trichloroethene	ug/L	5.00	5.44	5.11	109	102	78.0-124	6.26	20	
Trichlorofluoromethane	ug/L	5.00	5.23	5.22	105	104	59.0-147	0.191	20	
1,2,3-Trichloropropane	ug/L	5.00	4.73	4.50	94.6	90.0	73.0-130	4.98	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.54	4.74	90.8	94.8	76.0-121	4.31	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.59	4.58	91.8	91.6	76.0-122	0.218	20	
Vinyl chloride	ug/L	5.00	4.34	4.12	86.8	82.4	67.0-131	5.20	20	
Xylene (Total)	ug/L	15.0	14.8	14.8	98.7	98.7	79.0-123	0.00	20	
Allyl chloride	ug/L	25.0	25.5	24.5	102	98.0	72.0-128	4.00	20	
Toluene-d8 (S)	%				105	110	80.0-120			
4-Bromofluorobenzene (S)	%				100	109	77.0-126			
1,2-Dichloroethane-d4 (S)	%				106	108	70.0-130			

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

QC Batch: 1508167 Analysis Method: EPA 8260D

QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523658002, 10523658004

METHOD BLANK: R3549432-5 Matrix: Solid

Associated Lab Samples: 10523658002, 10523658004

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	mg/kg	ND	0.0500	07/14/20 13:30	
Benzene	mg/kg	ND	0.00100	07/14/20 13:30	
Bromobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Bromodichloromethane	mg/kg	ND	0.00100	07/14/20 13:30	
Bromochloromethane	mg/kg	ND	0.00100	07/14/20 13:30	
Bromoform	mg/kg	ND	0.00100	07/14/20 13:30	
Bromomethane	mg/kg	ND	0.00500	07/14/20 13:30	
n-Butylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
sec-Butylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
tert-Butylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Carbon tetrachloride	mg/kg	ND	0.00100	07/14/20 13:30	
Chlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Dibromochloromethane	mg/kg	ND	0.00100	07/14/20 13:30	
Chloroethane	mg/kg	ND	0.00500	07/14/20 13:30	
Chloroform	mg/kg	ND	0.00500	07/14/20 13:30	
Chloromethane	mg/kg	ND	0.00250	07/14/20 13:30	
2-Chlorotoluene	mg/kg	ND	0.00100	07/14/20 13:30	
4-Chlorotoluene	mg/kg	ND	0.00100	07/14/20 13:30	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	07/14/20 13:30	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	07/14/20 13:30	
Dibromomethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Dichlorodifluoromethane	mg/kg	ND	0.00500	07/14/20 13:30	
Dichlorofluoromethane	mg/kg	ND	0.00500	07/14/20 13:30	
1,1-Dichloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,2-Dichloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,1-Dichloroethene	mg/kg	ND	0.00100	07/14/20 13:30	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	07/14/20 13:30	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	07/14/20 13:30	
1,2-Dichloropropane	mg/kg	ND	0.00100	07/14/20 13:30	
1,1-Dichloropropene	mg/kg	ND	0.00100	07/14/20 13:30	
1,3-Dichloropropane	mg/kg	ND	0.00100	07/14/20 13:30	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	07/14/20 13:30	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	07/14/20 13:30	
2,2-Dichloropropane	mg/kg	ND	0.00100	07/14/20 13:30	
Ethylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	07/14/20 13:30	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	07/14/20 13:30	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

METHOD BLANK: R3549432-5 Matrix: Solid

Associated Lab Samples: 10523658002, 10523658004

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	07/14/20 13:30	
p-Isopropyltoluene	mg/kg	ND	0.00100	07/14/20 13:30	
2-Butanone (MEK)	mg/kg	ND	0.0100	07/14/20 13:30	
Methylene Chloride	mg/kg	ND	0.00500	07/14/20 13:30	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	07/14/20 13:30	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	07/14/20 13:30	
Naphthalene	mg/kg	ND	0.00500	07/14/20 13:30	
n-Propylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Styrene	mg/kg	ND	0.00100	07/14/20 13:30	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
Tetrachloroethene	mg/kg	ND	0.00100	07/14/20 13:30	
Tetrahydrofuran	mg/kg	ND	0.00500	07/14/20 13:30	
Toluene	mg/kg	ND	0.00500	07/14/20 13:30	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	07/14/20 13:30	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	07/14/20 13:30	
Trichloroethene	mg/kg	ND	0.00100	07/14/20 13:30	
Trichlorofluoromethane	mg/kg	ND	0.00500	07/14/20 13:30	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	07/14/20 13:30	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	07/14/20 13:30	
Vinyl chloride	mg/kg	ND	0.00100	07/14/20 13:30	
Xylene (Total)	mg/kg	ND	0.00300	07/14/20 13:30	
Allyl chloride	mg/kg	ND	0.00500	07/14/20 13:30	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	0.100	07/14/20 13:30	
Toluene-d8 (S)	%	95.1	75.0-131	07/14/20 13:30	
4-Bromofluorobenzene (S)	%	98.5	67.0-138	07/14/20 13:30	
1,2-Dichloroethane-d4 (S)	%	92	70.0-130	07/14/20 13:30	

LABORATORY CONTROL SAMPLE	132-1	R3549432-2				•		•		
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	mg/kg	0.125	0.113	0.137	90.4	110	10.0-160	19.2	31	
Benzene	mg/kg	0.0250	0.0293	0.0285	117	114	70.0-123	2.77	20	
Bromobenzene	mg/kg	0.0250	0.0271	0.0268	108	107	73.0-121	1.11	20	
Bromodichloromethane	mg/kg	0.0250	0.0295	0.0289	118	116	73.0-121	2.05	20	
Bromochloromethane	mg/kg	0.0250	0.0281	0.0274	112	110	77.0-128	2.52	20	
Bromoform	mg/kg	0.0250	0.0293	0.0319	117	128	64.0-132	8.50	20	
Bromomethane	mg/kg	0.0250	0.0323	0.0303	129	121	56.0-147	6.39	20	
n-Butylbenzene	mg/kg	0.0250	0.0300	0.0284	120	114	68.0-135	5.48	20	
sec-Butylbenzene	mg/kg	0.0250	0.0279	0.0265	112	106	74.0-130	5.15	20	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

LABORATORY CONTROL SAMPLE 8	LCSD: R3549			3549432-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD .	RPD	Qualifier
ert-Butylbenzene	mg/kg	0.0250	0.0287	0.0269	115	108	75.0-127	6.47	20	
Carbon tetrachloride	mg/kg	0.0250	0.0313	0.0295	125	118	66.0-128	5.92	20	
Chlorobenzene	mg/kg	0.0250	0.0284	0.0273	114	109	76.0-128	3.95	20	
Dibromochloromethane	mg/kg	0.0250	0.0285	0.0290	114	116	74.0-127	1.74	20	
Chloroethane	mg/kg	0.0250	0.0298	0.0295	119	118	61.0-134	1.01	20	
Chloroform	mg/kg	0.0250	0.0290	0.0285	116	114	72.0-123	1.74	20	
Chloromethane	mg/kg	0.0250	0.0223	0.0221	89.2	88.4	51.0-138	0.901	20	
2-Chlorotoluene	mg/kg	0.0250	0.0295	0.0276	118	110	75.0-124	6.65	20	
I-Chlorotoluene	mg/kg	0.0250	0.0296	0.0284	118	114	75.0-124	4.14	20	
,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0245	0.0287	98.0	115	59.0-130	15.8	20	
,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0272	0.0281	109	112	74.0-128	3.25	20	
Dibromomethane	mg/kg	0.0250	0.0292	0.0300	117	120	75.0-122	2.70	20	
,2-Dichlorobenzene	mg/kg	0.0250	0.0258	0.0257	103	103	76.0-124	0.388	20	
,3-Dichlorobenzene	mg/kg	0.0250	0.0238	0.0257	103	103	76.0-124	3.11	20	
,,4-Dichlorobenzene	mg/kg	0.0250	0.0261	0.0253	104	101	76.0-125	5.65	20	
Dichlorodifluoromethane	mg/kg	0.0250	0.0329	0.0306	132	122	43.0-156	7.24	20	
Dichlorofluoromethane	mg/kg	0.0250	0.0300	0.0283	120	113	65.0-137	5.83	20	
,1-Dichloroethane	mg/kg	0.0250	0.0288	0.0282	115	113	70.0-127	2.11	20	
,2-Dichloroethane	mg/kg	0.0250	0.0274	0.0283	110	113	65.0-131	3.23	20	
,1-Dichloroethene	mg/kg	0.0250	0.0314	0.0301	126	120	65.0-131	4.23	20	
sis-1,2-Dichloroethene	mg/kg	0.0250	0.0295	0.0295	118	118	73.0-125	0.00	20	
rans-1,2-Dichloroethene	mg/kg	0.0250	0.0303	0.0297	121	119	71.0-125	2.00	20	
,2-Dichloropropane	mg/kg	0.0250	0.0277	0.0265	111	106	74.0-125	4.43	20	
,1-Dichloropropene	mg/kg	0.0250	0.0302	0.0283	121	113	73.0-125	6.50	20	
,3-Dichloropropane	mg/kg	0.0250	0.0276	0.0286	110	114	80.0-125	3.56	20	
sis-1,3-Dichloropropene	mg/kg	0.0250	0.0290	0.0291	116	116	76.0-127	0.344	20	
rans-1,3-Dichloropropene	mg/kg	0.0250	0.0297	0.0294	119	118	73.0-127	1.02	20	
2,2-Dichloropropane	mg/kg	0.0250	0.0306	0.0316	122	126	59.0-135	3.22	20	
Ethylbenzene	mg/kg	0.0250	0.0288	0.0273	115	109	74.0-126	5.35	20	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0265	0.0276	106	110	64.0-137	4.07	20	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0327	0.0303	131	121	57.0-150	7.62	20	
sopropylbenzene (Cumene)	mg/kg	0.0250	0.0294	0.0276	118	110	72.0-127	6.32	20	
o-Isopropyltoluene	mg/kg	0.0250	0.0292	0.0274	117	110	72.0-133	6.36	20	
2-Butanone (MEK)	mg/kg	0.125	0.107	0.129	85.6	103	30.0-160	18.6	24	
Methylene Chloride	mg/kg	0.0250	0.0276	0.0268	110	107	68.0-123	2.94	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.111	0.133	88.8	106	56.0-143	18.0	20	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0285	0.133	114		66.0-132	7.11	20	
Naphthalene							59.0-130			
	mg/kg	0.0250	0.0260	0.0296	104			12.9	20	
n-Propylbenzene	mg/kg	0.0250	0.0295	0.0283	118		74.0-126	4.15	20	
Styrene	mg/kg	0.0250	0.0280	0.0274	112		72.0-127	2.17	20	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0281	0.0282	112		74.0-129	0.355	20	
I,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0256	0.0281	102		68.0-128	9.31	20	
Tetrachloroethene	mg/kg	0.0250	0.0286	0.0271	114		70.0-136	5.39	20	
Tetrahydrofuran	mg/kg	0.0250	0.0195	0.0243	78.0	97.2		21.9	24	
Toluene	mg/kg	0.0250	0.0296	0.0277	118		75.0-121	6.63	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0299	0.0281	120		61.0-139	6.21	20	
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0289	0.0294	116	118	59.0-139	1.72	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

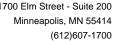
Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

LABORATORY CONTROL SAMPL	E & LCSD: R35494	432-1	R	3549432-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0291	0.0286	116	114	62.0-137	1.73	20	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0325	0.0310	130	124	69.0-126	4.72	20	L0
1,1,2-Trichloroethane	mg/kg	0.0250	0.0271	0.0284	108	114	78.0-123	4.68	20	
Trichloroethene	mg/kg	0.0250	0.0291	0.0275	116	110	76.0-126	5.65	20	
Trichlorofluoromethane	mg/kg	0.0250	0.0323	0.0303	129	121	61.0-142	6.39	20	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0264	0.0291	106	116	67.0-129	9.73	20	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0282	0.0266	113	106	70.0-126	5.84	20	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0281	0.0263	112	105	73.0-127	6.62	20	
Vinyl chloride	mg/kg	0.0250	0.0282	0.0265	113	106	63.0-134	6.22	20	
Xylene (Total)	mg/kg	0.0750	0.0859	0.0814	115	109	72.0-127	5.38	20	
Allyl chloride	mg/kg	0.125	0.151	0.145	121	116	70.0-131	4.05	20	
Toluene-d8 (S)	%				99.4	98.3	75.0-131			
4-Bromofluorobenzene (S)	%				98.8	102	67.0-138			
1,2-Dichloroethane-d4 (S)	%				102	111	70.0-130			

LABORATORY CONTROL SAMPLE:	R3549432-4					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg	1.00	1.04	104	18.0-160	
Toluene-d8 (S)	%			93.1	75.0-131	
4-Bromofluorobenzene (S)	%			96.0	67.0-138	
1,2-Dichloroethane-d4 (S)	%			96.9	70.0-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





2606-0017 Water Gremlin SRI Project:

Pace Project No.:

10523658

QC Batch: QC Batch Method:

684741

EPA Mod. 3510C

Analysis Method:

EPA 8270E by SIM

Analysis Description:

8270E Water 14 Dioxane by SIM

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523658003

METHOD BLANK:

Matrix: Water

Units

Units

10523518003

Associated Lab Samples: 10523658003

Parameter

Blank Reporting Result

Limit

Qualifiers Analyzed

1,4-Dioxane (SIM) ug/L 1,4-Dioxane-d8 (S) %.

ND 40

0.25 07/10/20 12:06 30-125 07/10/20 12:06

LABORATORY CONTROL SAMPLE: 3662526

Parameter

Spike LCS Conc. Result

10

LCS % Rec % Rec Limits

Qualifiers

1.4-Dioxane (SIM) 1,4-Dioxane-d8 (S)

ug/L %.

96 32-128 30 30-125

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3662527 MS

MSD

MSD Spike Spike

MS

3662528

9.6

MSD MS % Rec

Max

**RPD** RPD Qual

1,4-Dioxane (SIM)

Conc.

Result

% Rec

% Rec

Limits

1,4-Dioxane-d8 (S)

Date: 07/15/2020 11:44 AM

Parameter

ug/L %.

Units Result Conc. 1.1 10.5

12.5 10.6

Result 13.4

91 44 47

30-125

**REPORT OF LABORATORY ANALYSIS** This report shall not be reproduced, except in full,

without the written consent of Pace Analytical Services, LLC.

23

32-130

30

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Page 26 of 34



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **SAMPLE QUALIFIERS**

Sample: 10523658002

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Cannot run lower, client sent only MeOH vial.

Sample: 10523658004

[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Cannot run lower, client sent only MeOH vial.

#### **ANALYTE QUALIFIERS**

Date: 07/15/2020 11:44 AM

CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.



## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523658

Date: 07/15/2020 11:44 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523658001	GP-47 (0-1)	EPA 3050B	684881	EPA 6010D	685046
10523658003	GP-47 (38-40)	EPA 3010A	A 3010A 684956		685198
10523658001	GP-47 (0-1)	ASTM D2974	685245		
10523658003	GP-47 (38-40)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
10523658003 10523658005	GP-47 (38-40) Trip Blank	8260D 8260D	1506087 1506087	EPA 8260D EPA 8260D	1506087 1506087
10523658002 10523658004	GP-47 (14-15) Trip Blank	5035A 5035A	1508167 1508167	EPA 8260D EPA 8260D	1508167 1508167

CHAIN-OF-CUSTODY / Analytical Request Document

Critain 4-Cr - COS I COT 1 Attaly lical request DOCUITIENT. The Chain-6f-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Face Analytical"

33 4 Pace Project No./ Lab I.D. (Y/N) Samples Intact DRINKING WATER 2001005483 SAMPLE CONDITIONS 2001005488 3684 00100 X Custody Sealed Cooler (Y/N) ğ 40#:10523658 Received on Ice (Y/N) GROUND WATER 0 Residual Chlorine (Y/N) J° ni qmeT コミ Page: REGULATORY AGENCY 12/20/25 Requested Analysis Filtered (Y/N) TIME OATE Signed (MM/DD/YY): O7/02/2020 Site Location STATE NPDES DATE UST (1105) prey 14.01 Company Name: ACCEPTED BY / AFFILIATION -h 1 メ × NOCS D1220MGG t N // Analysis Test Holcomb Methanol 5 Preservatives Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> HOBN HCI M Invoice Information: Attention: HNO3 PRINT Name of SAMPLER: BENI GLAMIN OS2H Pace Quote Reference: Pace Project Manager: Pace Profile #: Section C TIME Unpreserved Address: SIGNATURE of SAMPLER: # OF CONTAINERS σ SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION CODYTO: Aaron Benker, Kelly Jawonki, 17/2/20 DATE TIME COMPOSITE END/GRAB Corpernar COLLECTED DATE Water Greinly RELINQUISHED BY / AFFILIATION をなり TIME 2101 02/2/F DIS G 7/2/2 810 G 7/2/20 750 2606-0017 COMPOSITE START Holoms DATE Report To: Shawe Required Project Information: (G=GRAB C=COMP) SAMPLE TYPE Urchase Order No.: Z Project Number: (see valid codes to left) MATRIX CODE रू अ roject Name: de Section B Valid Matrix Codes nail To: SWedtermain/alkanchicom \*Dissolved lead samples need B quested Due Date/TAT: Standard ADDITIONAL COMMENTS 131-11 GP-47 (38-40 (A-Z, 0-9 / ,-) Sampie IDs MUST BE UNIQUE 70 idress: 1600 Ploneer Check Plass, My impany. Wend Associates SAMPLE ID Required Client Information アナーから ころして 打炸码米 1008-012-119 ection A squired Client Information: Mark Section D Page 29 of 34 9 S 9

F-ALL-Q-020r.v.07, 15-F.v.-2007

y paymontierms and syreeing to the charges of 1,5% per month fer any invoices not paid within 30

# Pace Analytical\*

## Document Name:

## Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

Sample Condition Upon Receipt  Client Name:			Pr	oject #:	WO#:10523658
Courier:		SPS	_ — <del>≰</del> €		PM: AKA Due Date: 07/10/20 CLIENT: WENCK
Pace SpeeDed Tracking Number:	<u> </u>	ommerci	al See Ex	ceptions	<u> </u>
Custody Seal on Cooler/Box Present? Yes	<b>∄</b> \\\\o	Sea	als intact	:? □Yes	Biological Tissue Frozen? Yes No M/A
Packing Material: Bubble Wrap Bubble B	ags [	None	□Otf	ner:	Temp Blank? Yes No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)	ļ	Type of I	lce: [	Źwet □	Blue None Dry Melted
Did Samples Originate in West Virginia? ☐Yes ☐No	We	re All Co	ntainer	Temps Taker	? □Yes □No ☑ <del>N</del> /A-
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blank	:	1.0	<sup>0</sup> C Average Corrected Temp
Correction Factor: Twe Cooler Temp Correcte	ed w/tem	p blank	:	1.0	(no temp blank only): ☐ See Exceptions  C ☐ 1 Container
USDA Regulated Soil: ( N/A, water sample/Other:		)		Date/Init	als of Person Examining Contents: 2HL 7/20
Did samples originate in a quarantine zone within the Unit	ted States	_	_,	A, Did sam	oles originate from a foreign source (internationally, including
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m		]Yes d Soil Ch	No⊈ <u>ل</u> ecklist (i		nd Puerto Rico)?
			COMING	-11114-Q-3307	COMMENTS:
Chain of Custody Present and Filled Out?	√ Yes	□No	-	1.	COMMENTO
Chain of Custody Relinquished?	Yes	□No	• • • • • • • • • • • • • • • • • • • •	2.	
Sampler Name and/or Signature on COC?	Yes	□No	□n/a	3.	
Samples Arrived within Hold Time?	Yes	□No		4.	9 (19 (19 (19 (19 (19 (19 (19 (19 (19 (1
Short Hold Time Analysis (<72 hr)?	∐Yes	Νο			Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome dity Nitrate Nitrite Orthophos Other
Rush Turn Around Time Requested?	∐Yes	No		6.	
Sufficient Volume?	<b>Ø</b> Yes	□No		7.	
Correct Containers Used?	☑Yes	□No		8.	4-1
-Pace Containers Used?	₹es	□No			
Containers Intact?	Yes	□No		9.	
Field Filtered Volume Received for Dissolved Tests?	☐Yes	□No	[⊿N/A	10. Is sed	ment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	<b>A</b> Yes	□No		11. If no, w	ite ID/ Date/Time on Container Below: See Exception
Matrix: Water Soil Oil Other					·
All containers needing acid/base preservation have been checked?	∐Yes	□No	ØŃ/A	12. Sample	¥ .
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∐No	ØÑ/A		NaOH ☐ HNO <sub>3</sub> ☐ H <sub>2</sub> SO <sub>4</sub> ☐ Zinc Acetate
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	Ves	□No	□N/A	Positive for Chlorine?	Res. Yes See Exception No pH Paper Lot#
DNO/8013 (Water) and Dioxin/FFA3				Res. Chlorin	e 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	Yes	□No	□n/a	13.	See Exception
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	□No	□N/A		
Trip Blank Present? Trip Blank Custody Seals Present?	Yes	□No	□N/A	14.	501:060120-3(2)
	Yes	□No	□N/A	Pace T	rip Blank Lot # (if purchased): H20- 262982 (1)
CLIENT NOTIFICATION/RESOLUTION Person Contacted: S Waterman				Date/Time	Field Data Required? Yes No 7/2/2020 19:01
Comments/Resolution: Client notified that no moistu	ure contai	ner was	received	for sample 0	02.
Project March 1971		)——			
Project Manager Review:	uc	MP			Date: 7/2/2020
old, incorrect preservative, out of temp, incorrect containers).	complianc	e samples	s, a copy o	or this form wil	be sent to the North Carolina DEHNR Certification Office ( i.e out of

Page 30 of 34

Labeled by:



# Document Name: **Headspace Exception**

Document No.: ENV-FRM-MIN4-0140 Rev.00

Document Revised: 26Mar2020

Page 1 of 1

Pace Analytical Services - **Minneapolis** 

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
3	0	2	4	6	<i>Y</i>
				1/400-	

	Samples were sent							Ce	rt.	Of Ori Neede	d:	x '	Yes		N			and the same				www.pacelabs.c
	korder: 10523658 V	orkorder N	ame: 2606-00 Subcontra	17 Water Gren	nlin SRI			Ov	vne	r Rece	eived	Dat	e:		2020 eques		_	ults	Req	uest	ed B	y: 7/10/2020
Anni Pace 1700 Suite Minn	ka Asp Analytical Minnesota Elm Street 200 eapolis, MN 55414 ne (612)607-1700		Pace Nation 12065 Leba Mt. Juliet, T	nal Inon Road							C by 8260DAP9	8260DAP9 (PN)	National) - TB	ace National)								
						P	rese	rved C	ont	ainers	ane & vd	8 voc by	8260D (Pace	8260D (P								47
tem	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	VКВн	W@9M	NG9U			1,4 Diox	1,4 Dioxane	VOC by 87	VOC by								LAB USE ON
100	GP-47 (14-15)	PS	7/2/2020 08:10	10523658002	Solid		4					X			1	1				7		-01
	GP-47 (38-40)	PS	7/2/2020 10:15	10523658003	Water	3	3.00	3						Х		4						-02
	Trip Blank	PS	7/2/2020 00:00	10523658004	Solid		2		le l		X	Х	2									-03
	Trip Blank	PS	7/2/2020 00:00	10523658005	Water	1							Χ	Х								-04
			Secretary.	A SALES	See al		F-1 8				1					-3					Long	
	Released By	Hace	Date/Time	Received E	Ву			ed	<b>X</b> (1)	Date/Ti	me	2	\$	75	22	90	7	Com	men			
200	ler Temperature on Rec	eint 5	°C Cu	stody Seal G	Apr. N	<u></u>	$\widetilde{\top}$	ife P	200	7/	n Ico	The Person Name of Street, or other Designation of the Person of the Per	:30			_		San	nle	e Int	act/	V or N
**In	ler Temperature on Recorder to maintain client consistency is consistency in the constant of custody is consistency in the constant of custody in the constant of custody is consistency in the custody i	onfidentiality	, location/nam		ng site, s	samp		nam	e a		nature	ma	or ny no	t be p				military and	ос	docu	ımen	

RAD SCREEN: <0.5 mP/hr

## Pace Analytical National Center for Testing & Innovation Cooler Receipt Form Client: PHCEMA Temperature: 0分で Cooler Received/Opened On: Monica Rifenberrick Received By: Signature: NP Yes No **Receipt Check List** COC Seal Present / Intact? COC Signed / Accurate? Bottles arrive intact? Correct bottles used? Sufficient volume sent? If Applicable VOA Zero headspace? Preservation Correct / Checked?





July 17, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on July 07, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures

cc: Ben Holcomb, Wenck Associates
Kelly Jaworski, Wenck Associates, Inc.
Mr. Shane Waterman, Wenck Associates, Inc.







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680

California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: 2-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002

New York Certification #: 11647 North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486

West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01





## **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523948001	SB-18 (2-4)	Solid	07/07/20 08:30	07/07/20 16:12
10523948002	SB-19 (8-10)	Solid	07/07/20 09:00	07/07/20 16:12
10523948003	SB-20 (1-3)	Solid	07/07/20 09:30	07/07/20 16:12
10523948004	SB-21 (3-5)	Solid	07/07/20 10:15	07/07/20 16:12
10523948005	SB-22 (2-4)	Solid	07/07/20 11:00	07/07/20 16:12
10523948006	Rinsate 070720	Water	07/07/20 11:30	07/07/20 16:12
10523948007	SB-23 (2-4)	Solid	07/07/20 12:30	07/07/20 16:12
10523948008	MeOH Trip Blank	Solid	07/07/20 00:00	07/07/20 16:12



## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10523948001	SB-18 (2-4)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948002	SB-19 (8-10)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948003	SB-20 (1-3)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948004	SB-21 (3-5)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948005	SB-22 (2-4)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948006	Rinsate 070720	EPA 8270E by SIM	ZT	2
		EPA 8260D	MM3	72
10523948007	SB-23 (2-4)	ASTM D2974	JDL	1
		EPA 8260D	ML4	71
10523948008	MeOH Trip Blank	EPA 8260D	ML4	71

PASI-M = Pace Analytical Services - Minneapolis



Date: 07/17/2020 04:36 PM

## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Sample: SB-18 (2-4)	Lab ID: 1052		Collected: 07/07/2				atrix: Solid	
Results reported on a "dry weight" b	pasis and are adj	usted for pe	rcent moisture, sa	mple s	ize and any dilu	ions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Ory Weight / %M by ASTM D2974	Analytical Meth	od: ASTM D	2974					
	Pace Analytica	Services - M	linneapolis					
Percent Moisture	3.8	%	0.10	1		07/09/20 13:02		N2
260D MSV 5030 Med Level	Analytical Meth	od: EDA 826	0D Preparation Me	thod: F	-DΔ 5035/5030R			
2000 MOV 3030 Med Level	Pace Analytica			illou. L	II A 3030/3030D			
,1,1,2-Tetrachloroethane	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	630-20-6	
,1,1-Trichloroethane	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	71-55-6	
,1,2,2-Tetrachloroethane	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	79-34-5	
,1,2-Trichloroethane	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	79-00-5	
,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.21	1		07/10/20 14:55		
,1-Dichloroethane	ND	mg/kg	0.052	1		07/10/20 14:55		
,1-Dichloroethene	ND	mg/kg	0.052	1		07/10/20 14:55		
,1-Dichloropropene	ND	mg/kg	0.052	1		07/10/20 14:55		
,2,3-Trichlorobenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,2,3-Trichloropropane	ND	mg/kg	0.21	1		07/10/20 14:55		
,2,4-Trichlorobenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,2,4-Trimethylbenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,2-Dibromo-3-chloropropane								484
	ND	mg/kg	0.52	1		07/10/20 14:55		4M
,2-Dibromoethane (EDB)	ND	mg/kg	0.052	1		07/10/20 14:55		
,2-Dichlorobenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,2-Dichloroethane	ND	mg/kg	0.052	1		07/10/20 14:55		
,2-Dichloropropane	ND	mg/kg	0.052	1		07/10/20 14:55		
,3,5-Trimethylbenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,3-Dichlorobenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
,3-Dichloropropane	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	142-28-9	
,4-Dichlorobenzene	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	106-46-7	
,4-Dioxane (p-Dioxane)	ND	mg/kg	10.3	1	07/10/20 09:46	07/10/20 14:55	123-91-1	
2,2-Dichloropropane	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 14:55	594-20-7	
P-Butanone (MEK)	ND	mg/kg	0.26	1	07/10/20 09:46	07/10/20 14:55	78-93-3	
2-Chlorotoluene	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	95-49-8	
-Chlorotoluene	ND	mg/kg	0.052	1	07/10/20 09:46	07/10/20 14:55	106-43-4	
-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.26	1	07/10/20 09:46	07/10/20 14:55	108-10-1	4M
Acetone	ND	mg/kg	1.0	1	07/10/20 09:46	07/10/20 14:55	67-64-1	4M
Allyl chloride	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 14:55	107-05-1	
Benzene	ND	mg/kg	0.021	1		07/10/20 14:55		
Bromobenzene	ND	mg/kg	0.052	1		07/10/20 14:55		
Bromochloromethane	ND	mg/kg	0.052	1		07/10/20 14:55		
Bromodichloromethane	ND	mg/kg	0.052	1		07/10/20 14:55		
Bromoform	ND	mg/kg	0.21	1		07/10/20 14:55		
Bromomethane	ND	mg/kg	0.52	1		07/10/20 14:55		
Carbon tetrachloride	ND ND		0.052	1		07/10/20 14:55		
	ND ND	mg/kg mg/kg	0.052			07/10/20 14:55		
Chlorobenzene		mg/kg		1				
Chloroethane	ND	mg/kg	0.52	1		07/10/20 14:55		
Chloroform	ND	mg/kg	0.052	1		07/10/20 14:55		
Chloromethane	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 14:55	14-81-3	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

4-Bromofluorobenzene (S)

Date: 07/17/2020 04:36 PM

101

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Lab ID: 10523948001 Collected: 07/07/20 08:30 Received: 07/07/20 16:12 Sample: SB-18 (2-4) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Dibromomethane ND 07/10/20 09:46 07/10/20 14:55 74-95-3 mg/kg 0.052 1 Dichlorodifluoromethane ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 14:55 75-71-8 Dichlorofluoromethane ND mg/kg 0.52 1 07/10/20 09:46 07/10/20 14:55 75-43-4 2M Diethyl ether (Ethyl ether) ND 0.21 07/10/20 09:46 07/10/20 14:55 60-29-7 mg/kg 1 Ethylbenzene ND 0.052 07/10/20 09:46 07/10/20 14:55 100-41-4 mg/kg 1 Hexachloro-1,3-butadiene ND mg/kg 0.26 07/10/20 09:46 07/10/20 14:55 87-68-3 1 Isopropylbenzene (Cumene) ND 0.052 07/10/20 09:46 07/10/20 14:55 98-82-8 mg/kg 1 ND mg/kg 0.052 Methyl-tert-butyl ether 07/10/20 09:46 07/10/20 14:55 1634-04-4 1 Methylene Chloride ND 0.21 07/10/20 09:46 07/10/20 14:55 75-09-2 mg/kg 1 Naphthalene ND mg/kg 0.21 07/10/20 09:46 07/10/20 14:55 91-20-3 1 Styrene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 100-42-5 0.052 Tetrachloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 14:55 127-18-4 Tetrahydrofuran ND mg/kg 2.1 07/10/20 09:46 07/10/20 14:55 109-99-9 1 Toluene ND mg/kg 0.052 07/10/20 09:46 07/10/20 14:55 108-88-3 1 Trichloroethene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 79-01-6 Trichlorofluoromethane ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 14:55 75-69-4 2M Vinvl chloride ND mg/kg 0.021 1 07/10/20 09:46 07/10/20 14:55 75-01-4 Xylene (Total) ND mg/kg 0.16 07/10/20 09:46 07/10/20 14:55 1330-20-7 1 cis-1,2-Dichloroethene ND mg/kg 0.052 07/10/20 09:46 07/10/20 14:55 156-59-2 1 ND 0.052 cis-1,3-Dichloropropene mg/kg 1 07/10/20 09:46 07/10/20 14:55 10061-01-5 ND n-Butylbenzene mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 104-51-8 07/10/20 09:46 07/10/20 14:55 103-65-1 n-Propylbenzene ND mg/kg 0.052 1 p-Isopropyltoluene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 99-87-6 sec-Butylbenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 135-98-8 tert-Butylbenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 14:55 98-06-6 trans-1,2-Dichloroethene ND mg/kg 0.052 07/10/20 09:46 07/10/20 14:55 156-60-5 1 trans-1,3-Dichloropropene ND mg/kg 0.052 07/10/20 09:46 07/10/20 14:55 10061-02-6 Surrogates 1,2-Dichloroethane-d4 (S) 110 %. 75-125 07/10/20 09:46 07/10/20 14:55 17060-07-0 1 Toluene-d8 (S) 99 %. 75-125 1 07/10/20 09:46 07/10/20 14:55 2037-26-5

#### **REPORT OF LABORATORY ANALYSIS**

75-125

1

07/10/20 09:46 07/10/20 14:55 460-00-4



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948002 Sample: SB-19 (8-10) Collected: 07/07/20 09:00 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 5.8 0.10 1 07/09/20 13:02 N2 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis 1,1,1,2-Tetrachloroethane ND 0.053 1 07/10/20 09:46 07/10/20 15:15 630-20-6 mg/kg 1,1,1-Trichloroethane ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 71-55-6 1,1,2,2-Tetrachloroethane ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 79-34-5 1,1,2-Trichloroethane ND 0.053 07/10/20 09:46 07/10/20 15:15 79-00-5 mg/kg 1 07/10/20 09:46 07/10/20 15:15 76-13-1 1,1,2-Trichlorotrifluoroethane ND mg/kg 0.21 1 1,1-Dichloroethane ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 75-34-3 1,1-Dichloroethene ND mg/kg 0.053 07/10/20 09:46 07/10/20 15:15 75-35-4 1 ND mg/kg 0.053 07/10/20 09:46 07/10/20 15:15 563-58-6 1,1-Dichloropropene 1 NΠ 0.053 07/10/20 09:46 07/10/20 15:15 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND mg/kg 0.21 07/10/20 09:46 07/10/20 15:15 96-18-4 1 ND 1,2,4-Trichlorobenzene mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 120-82-1 ND 1,2,4-Trimethylbenzene mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.53 1 07/10/20 09:46 07/10/20 15:15 96-12-8 4M 1,2-Dibromoethane (EDB) ND mg/kg 0.053 07/10/20 09:46 07/10/20 15:15 106-93-4 1 1,2-Dichlorobenzene ND 0.053 07/10/20 09:46 07/10/20 15:15 mg/kg 1 95-50-1 ND 0.053 1,2-Dichloroethane mg/kg 1 07/10/20 09:46 07/10/20 15:15 107-06-2 1,2-Dichloropropane ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 78-87-5 1,3,5-Trimethylbenzene ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 108-67-8 1,3-Dichlorobenzene ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 541-73-1 1,3-Dichloropropane NΠ mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 142-28-9 1,4-Dichlorobenzene ND 0.053 07/10/20 09:46 07/10/20 15:15 106-46-7 mg/kg 1 07/10/20 09:46 07/10/20 15:15 123-91-1 1,4-Dioxane (p-Dioxane) ND mg/kg 10.6 1 ND 07/10/20 09:46 07/10/20 15:15 594-20-7 2,2-Dichloropropane mg/kg 0.21 1 2-Butanone (MEK) ND mg/kg 0.27 07/10/20 09:46 07/10/20 15:15 78-93-3 1 2-Chlorotoluene ND mg/kg 0.053 07/10/20 09:46 07/10/20 15:15 95-49-8 ND mg/kg 0.053 07/10/20 09:46 07/10/20 15:15 106-43-4 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.27 07/10/20 09:46 07/10/20 15:15 108-10-1 4M Acetone ND mg/kg 1.1 1 07/10/20 09:46 07/10/20 15:15 67-64-1 4M Allyl chloride mg/kg ND 0.21 07/10/20 09:46 07/10/20 15:15 107-05-1 1 ND 0.021 07/10/20 09:46 07/10/20 15:15 71-43-2 Benzene mg/kg 1 ND 0.053 07/10/20 09:46 07/10/20 15:15 108-86-1 Bromobenzene mg/kg 1 ND 0.053 07/10/20 09:46 07/10/20 15:15 74-97-5 Bromochloromethane mg/kg 1 ND Bromodichloromethane 0.053 07/10/20 09:46 07/10/20 15:15 75-27-4 mg/kg 1 Bromoform ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 15:15 75-25-2 Bromomethane ND mg/kg 0.53 07/10/20 09:46 07/10/20 15:15 74-83-9 1 Carbon tetrachloride ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 56-23-5 Chlorobenzene ND 0.053 07/10/20 09:46 07/10/20 15:15 108-90-7 mg/kg 1 ND 0.53 07/10/20 09:46 07/10/20 15:15 75-00-3 Chloroethane mg/kg 1 Chloroform ND mg/kg 0.053 1 07/10/20 09:46 07/10/20 15:15 67-66-3 Chloromethane ND 0.21 07/10/20 09:46 07/10/20 15:15 74-87-3 mg/kg 1 Dibromochloromethane ND mg/kg 0.21 07/10/20 09:46 07/10/20 15:15 124-48-1



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Sample: SB-19 (8-10) Lab ID: 10523948002 Collected: 07/07/20 09:00 Received: 07/07/20 16:12 Matrix: Solid

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 826	DD Preparation Me	thod: E	EPA 5035/5030B			
	Pace Analytica	I Services - M	linneapolis					
Dibromomethane	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	74-95-3	
Dichlorodifluoromethane	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 15:15	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.53	1	07/10/20 09:46	07/10/20 15:15	75-43-4	2M
Diethyl ether (Ethyl ether)	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 15:15	60-29-7	
Ethylbenzene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	100-41-4	
Hexachloro-1,3-butadiene	ND	mg/kg	0.27	1	07/10/20 09:46	07/10/20 15:15	87-68-3	
sopropylbenzene (Cumene)	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	98-82-8	
Methyl-tert-butyl ether	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	1634-04-4	
Methylene Chloride	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 15:15	75-09-2	
Naphthalene	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 15:15	91-20-3	
Styrene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	100-42-5	
Tetrachloroethene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	127-18-4	
Tetrahydrofuran	ND	mg/kg	2.1	1	07/10/20 09:46	07/10/20 15:15	109-99-9	
Toluene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	108-88-3	
Trichloroethene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.21	1	07/10/20 09:46	07/10/20 15:15	75-69-4	2M
/inyl chloride	ND	mg/kg	0.021	1	07/10/20 09:46	07/10/20 15:15	75-01-4	
(Ylene (Total)	ND	mg/kg	0.16	1	07/10/20 09:46	07/10/20 15:15	1330-20-7	
cis-1,2-Dichloroethene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	156-59-2	
cis-1,3-Dichloropropene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	10061-01-5	
n-Butylbenzene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	104-51-8	
n-Propylbenzene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	103-65-1	
o-Isopropyltoluene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	99-87-6	
sec-Butylbenzene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	135-98-8	
ert-Butylbenzene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	98-06-6	
rans-1,2-Dichloroethene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	156-60-5	
rans-1,3-Dichloropropene	ND	mg/kg	0.053	1	07/10/20 09:46	07/10/20 15:15	10061-02-6	
Surrogates		- <del>-</del>						
,2-Dichloroethane-d4 (S)	113	%.	75-125	1	07/10/20 09:46	07/10/20 15:15	17060-07-0	
oluene-d8 (S)	98	%.	75-125	1	07/10/20 09:46	07/10/20 15:15	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1	07/10/20 09:46	07/10/20 15:15	460-00-4	



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948003 Sample: SB-20 (1-3) Collected: 07/07/20 09:30 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 0.10 1 07/09/20 13:02 N2 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis 1,1,1,2-Tetrachloroethane ND 0.051 1 07/10/20 09:46 07/10/20 15:34 630-20-6 mg/kg 1,1,1-Trichloroethane ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 71-55-6 1,1,2,2-Tetrachloroethane ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 79-34-5 1,1,2-Trichloroethane ND 0.051 07/10/20 09:46 07/10/20 15:34 79-00-5 mg/kg 1 07/10/20 09:46 07/10/20 15:34 76-13-1 1,1,2-Trichlorotrifluoroethane ND mg/kg 0.20 1 1,1-Dichloroethane ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 75-34-3 1,1-Dichloroethene ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 75-35-4 1 ND 0.051 07/10/20 09:46 07/10/20 15:34 563-58-6 1,1-Dichloropropene mg/kg 1 NΠ 0.051 07/10/20 09:46 07/10/20 15:34 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND mg/kg 0.20 07/10/20 09:46 07/10/20 15:34 96-18-4 1 ND 1,2,4-Trichlorobenzene mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 120-82-1 ND 1,2,4-Trimethylbenzene mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.51 1 07/10/20 09:46 07/10/20 15:34 96-12-8 4M 1,2-Dibromoethane (EDB) ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 106-93-4 1 1,2-Dichlorobenzene ND 0.051 07/10/20 09:46 07/10/20 15:34 mg/kg 1 ND 0.051 1,2-Dichloroethane mg/kg 1 07/10/20 09:46 07/10/20 15:34 107-06-2 1,2-Dichloropropane ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 78-87-5 1,3,5-Trimethylbenzene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 108-67-8 1,3-Dichlorobenzene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 541-73-1 1,3-Dichloropropane NΠ mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 142-28-9 07/10/20 09:46 07/10/20 15:34 106-46-7 1,4-Dichlorobenzene ND 0.051 mg/kg 1 07/10/20 09:46 07/10/20 15:34 123-91-1 1,4-Dioxane (p-Dioxane) ND mg/kg 10.2 1 0.20 07/10/20 09:46 07/10/20 15:34 594-20-7 ND 2,2-Dichloropropane mg/kg 1 2-Butanone (MEK) ND mg/kg 0.26 07/10/20 09:46 07/10/20 15:34 78-93-3 1 2-Chlorotoluene ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 95-49-8 ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 106-43-4 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.26 1 07/10/20 09:46 07/10/20 15:34 108-10-1 4M Acetone ND mg/kg 1.0 1 07/10/20 09:46 07/10/20 15:34 67-64-1 4M mg/kg Allyl chloride ND 0.20 07/10/20 09:46 07/10/20 15:34 107-05-1 1 ND 0.020 07/10/20 09:46 07/10/20 15:34 71-43-2 Benzene mg/kg 1 ND 0.051 07/10/20 09:46 07/10/20 15:34 108-86-1 Bromobenzene mg/kg 1 ND 0.051 07/10/20 09:46 07/10/20 15:34 74-97-5 Bromochloromethane mg/kg 1 ND Bromodichloromethane 0.051 07/10/20 09:46 07/10/20 15:34 75-27-4 mg/kg 1 Bromoform ND mg/kg 0.20 1 07/10/20 09:46 07/10/20 15:34 75-25-2 Bromomethane ND mg/kg 0.51 07/10/20 09:46 07/10/20 15:34 74-83-9 1 Carbon tetrachloride ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 56-23-5 Chlorobenzene ND 0.051 07/10/20 09:46 07/10/20 15:34 108-90-7 mg/kg 1 ND 0.51 07/10/20 09:46 07/10/20 15:34 75-00-3 Chloroethane mg/kg 1 Chloroform ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 67-66-3 Chloromethane ND 0.20 07/10/20 09:46 07/10/20 15:34 74-87-3 mg/kg 1 Dibromochloromethane ND mg/kg 0.20 07/10/20 09:46 07/10/20 15:34 124-48-1



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

4-Bromofluorobenzene (S)

Date: 07/17/2020 04:36 PM

Sample: SB-20 (1-3) Lab ID: 10523948003 Collected: 07/07/20 09:30 Received: 07/07/20 16:12 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Dibromomethane ND 07/10/20 09:46 07/10/20 15:34 74-95-3 mg/kg 0.051 Dichlorodifluoromethane ND mg/kg 0.20 07/10/20 09:46 07/10/20 15:34 75-71-8 1 Dichlorofluoromethane ND mg/kg 0.51 1 07/10/20 09:46 07/10/20 15:34 75-43-4 2M Diethyl ether (Ethyl ether) ND 0.20 07/10/20 09:46 07/10/20 15:34 60-29-7 mg/kg 1 Ethylbenzene ND 0.051 07/10/20 09:46 07/10/20 15:34 100-41-4 mg/kg 1 Hexachloro-1,3-butadiene ND mg/kg 0.26 07/10/20 09:46 07/10/20 15:34 87-68-3 1 Isopropylbenzene (Cumene) ND 0.051 07/10/20 09:46 07/10/20 15:34 98-82-8 mg/kg 1 ND mg/kg 0.051 Methyl-tert-butyl ether 07/10/20 09:46 07/10/20 15:34 1634-04-4 1 Methylene Chloride ND 0.20 07/10/20 09:46 07/10/20 15:34 75-09-2 mg/kg 1 Naphthalene ND mg/kg 0.20 07/10/20 09:46 07/10/20 15:34 91-20-3 1 Styrene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 100-42-5 0.051 Tetrachloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 15:34 127-18-4 Tetrahydrofuran ND mg/kg 2.0 07/10/20 09:46 07/10/20 15:34 109-99-9 1 Toluene ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 108-88-3 1 Trichloroethene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 79-01-6 Trichlorofluoromethane ND mg/kg 0.20 1 07/10/20 09:46 07/10/20 15:34 75-69-4 2M Vinvl chloride ND mg/kg 0.020 1 07/10/20 09:46 07/10/20 15:34 75-01-4 Xylene (Total) ND mg/kg 07/10/20 09:46 07/10/20 15:34 1330-20-7 0.15 1 cis-1,2-Dichloroethene ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 156-59-2 1 ND cis-1,3-Dichloropropene mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 10061-01-5 ND n-Butylbenzene mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 104-51-8 n-Propylbenzene ND 07/10/20 09:46 07/10/20 15:34 103-65-1 mg/kg 0.051 1 p-Isopropyltoluene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 99-87-6 sec-Butylbenzene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 135-98-8 tert-Butylbenzene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 98-06-6 trans-1,2-Dichloroethene ND mg/kg 0.051 07/10/20 09:46 07/10/20 15:34 156-60-5 1 trans-1,3-Dichloropropene ND mg/kg 0.051 1 07/10/20 09:46 07/10/20 15:34 10061-02-6 Surrogates 1,2-Dichloroethane-d4 (S) 111 %. 75-125 07/10/20 09:46 07/10/20 15:34 17060-07-0 1 Toluene-d8 (S) 99 %. 75-125 1 07/10/20 09:46 07/10/20 15:34 2037-26-5

#### **REPORT OF LABORATORY ANALYSIS**

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07/10/20 09:46 07/10/20 15:34 460-00-4

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948004 Sample: SB-21 (3-5) Collected: 07/07/20 10:15 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 3.3 0.10 1 07/09/20 13:03 N2 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis 1,1,1,2-Tetrachloroethane ND 0.057 1 07/10/20 09:46 07/10/20 14:33 630-20-6 mg/kg 1,1,1-Trichloroethane ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 71-55-6 1,1,2,2-Tetrachloroethane ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 79-34-5 1,1,2-Trichloroethane ND 0.057 07/10/20 09:46 07/10/20 14:33 79-00-5 mg/kg 1 07/10/20 09:46 07/10/20 14:33 76-13-1 1,1,2-Trichlorotrifluoroethane ND mg/kg 0.23 1 1,1-Dichloroethane ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 75-34-3 1,1-Dichloroethene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 75-35-4 1 ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 563-58-6 1,1-Dichloropropene 1 NΠ 0.057 07/10/20 09:46 07/10/20 14:33 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND mg/kg 0.23 07/10/20 09:46 07/10/20 14:33 96-18-4 1 ND 1,2,4-Trichlorobenzene mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 120-82-1 ND 1,2,4-Trimethylbenzene mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.57 1 07/10/20 09:46 07/10/20 14:33 96-12-8 4M 1,2-Dibromoethane (EDB) ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 106-93-4 1 1,2-Dichlorobenzene ND 0.057 07/10/20 09:46 07/10/20 14:33 mg/kg 1 95-50-1 ND 1,2-Dichloroethane mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 107-06-2 1,2-Dichloropropane ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 78-87-5 1,3,5-Trimethylbenzene ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 108-67-8 1,3-Dichlorobenzene ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 541-73-1 1,3-Dichloropropane NΠ mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 142-28-9 ND 0.057 07/10/20 09:46 07/10/20 14:33 106-46-7 1,4-Dichlorobenzene mg/kg 1 07/10/20 09:46 07/10/20 14:33 123-91-1 1,4-Dioxane (p-Dioxane) ND mg/kg 11.5 1 ND 0.23 07/10/20 09:46 07/10/20 14:33 594-20-7 2,2-Dichloropropane mg/kg 1 2-Butanone (MEK) ND mg/kg 0.29 07/10/20 09:46 07/10/20 14:33 78-93-3 1 2-Chlorotoluene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 95-49-8 ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 106-43-4 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.29 1 07/10/20 09:46 07/10/20 14:33 108-10-1 4M Acetone ND mg/kg 1.1 1 07/10/20 09:46 07/10/20 14:33 67-64-1 4M Allyl chloride mg/kg ND 0.23 07/10/20 09:46 07/10/20 14:33 107-05-1 1 ND 0.023 07/10/20 09:46 07/10/20 14:33 71-43-2 Benzene mg/kg 1 ND 0.057 07/10/20 09:46 07/10/20 14:33 108-86-1 Bromobenzene mg/kg 1 ND 0.057 07/10/20 09:46 07/10/20 14:33 74-97-5 Bromochloromethane mg/kg 1 ND Bromodichloromethane 0.057 07/10/20 09:46 07/10/20 14:33 75-27-4 mg/kg 1 Bromoform ND mg/kg 0.23 1 07/10/20 09:46 07/10/20 14:33 75-25-2 Bromomethane ND mg/kg 0.57 07/10/20 09:46 07/10/20 14:33 74-83-9 1 Carbon tetrachloride ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 56-23-5 Chlorobenzene ND 0.057 07/10/20 09:46 07/10/20 14:33 108-90-7 mg/kg 1 ND 0.57 07/10/20 09:46 07/10/20 14:33 75-00-3 Chloroethane mg/kg 1 Chloroform ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 67-66-3 Chloromethane ND 0.23 07/10/20 09:46 07/10/20 14:33 74-87-3 mg/kg 1 Dibromochloromethane ND mg/kg 0.23 07/10/20 09:46 07/10/20 14:33 124-48-1

#### **REPORT OF LABORATORY ANALYSIS**

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#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948004 Collected: 07/07/20 10:15 Received: 07/07/20 16:12 Sample: SB-21 (3-5) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Dibromomethane ND 07/10/20 09:46 07/10/20 14:33 74-95-3 mg/kg 0.057 Dichlorodifluoromethane ND mg/kg 0.23 07/10/20 09:46 07/10/20 14:33 75-71-8 1 Dichlorofluoromethane ND mg/kg 0.57 1 07/10/20 09:46 07/10/20 14:33 75-43-4 2M Diethyl ether (Ethyl ether) ND 0.23 07/10/20 09:46 07/10/20 14:33 60-29-7 mg/kg 1 Ethylbenzene ND 0.057 07/10/20 09:46 07/10/20 14:33 100-41-4 mg/kg 1 Hexachloro-1,3-butadiene ND mg/kg 0.29 07/10/20 09:46 07/10/20 14:33 87-68-3 1 Isopropylbenzene (Cumene) ND 0.057 07/10/20 09:46 07/10/20 14:33 98-82-8 mg/kg 1 ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 1634-04-4 Methyl-tert-butyl ether 1 Methylene Chloride ND 0.23 07/10/20 09:46 07/10/20 14:33 75-09-2 mg/kg 1 Naphthalene ND mg/kg 0.23 07/10/20 09:46 07/10/20 14:33 91-20-3 1 Styrene ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 100-42-5 0.057 Tetrachloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 14:33 127-18-4 Tetrahydrofuran ND mg/kg 2.3 07/10/20 09:46 07/10/20 14:33 109-99-9 1 Toluene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 108-88-3 1 Trichloroethene ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 79-01-6 Trichlorofluoromethane ND mg/kg 0.23 1 07/10/20 09:46 07/10/20 14:33 75-69-4 2M Vinvl chloride ND mg/kg 0.023 1 07/10/20 09:46 07/10/20 14:33 75-01-4 Xylene (Total) ND mg/kg 07/10/20 09:46 07/10/20 14:33 1330-20-7 0.17 1 07/10/20 09:46 07/10/20 14:33 156-59-2 cis-1,2-Dichloroethene ND mg/kg 0.057 1 ND cis-1,3-Dichloropropene mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 10061-01-5 ND n-Butylbenzene mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 104-51-8 n-Propylbenzene ND mg/kg 07/10/20 09:46 07/10/20 14:33 103-65-1 0.057 1 p-Isopropyltoluene ND mg/kg 0.057 1 07/10/20 09:46 07/10/20 14:33 99-87-6 sec-Butylbenzene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 135-98-8 1 tert-Butylbenzene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 98-06-6 1 trans-1,2-Dichloroethene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 156-60-5 1 trans-1,3-Dichloropropene ND mg/kg 0.057 07/10/20 09:46 07/10/20 14:33 10061-02-6 Surrogates 1,2-Dichloroethane-d4 (S) 110 %. 75-125 07/10/20 09:46 07/10/20 14:33 17060-07-0 1 Toluene-d8 (S) 99 %. 75-125 1 07/10/20 09:46 07/10/20 14:33 2037-26-5 4-Bromofluorobenzene (S) 101 %. 75-125 1 07/10/20 09:46 07/10/20 14:33 460-00-4



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948005 Sample: SB-22 (2-4) Collected: 07/07/20 11:00 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 0.10 1 07/09/20 13:03 N2 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis 1,1,1,2-Tetrachloroethane ND 0.052 1 07/10/20 09:46 07/10/20 15:54 630-20-6 mg/kg 1,1,1-Trichloroethane ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 71-55-6 1,1,2,2-Tetrachloroethane ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 79-34-5 1,1,2-Trichloroethane ND 0.052 07/10/20 09:46 07/10/20 15:54 79-00-5 mg/kg 1 07/10/20 09:46 07/10/20 15:54 76-13-1 1,1,2-Trichlorotrifluoroethane ND mg/kg 0.21 1 1,1-Dichloroethane ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 75-34-3 1,1-Dichloroethene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 75-35-4 1 ND 0.052 07/10/20 09:46 07/10/20 15:54 563-58-6 1,1-Dichloropropene mg/kg 1 NΠ 0.052 07/10/20 09:46 07/10/20 15:54 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND mg/kg 0.21 07/10/20 09:46 07/10/20 15:54 96-18-4 1 ND 0.052 1,2,4-Trichlorobenzene mg/kg 1 07/10/20 09:46 07/10/20 15:54 120-82-1 ND 1,2,4-Trimethylbenzene mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.52 1 07/10/20 09:46 07/10/20 15:54 96-12-8 4M 1,2-Dibromoethane (EDB) ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 106-93-4 1 1,2-Dichlorobenzene ND 0.052 07/10/20 09:46 07/10/20 15:54 mg/kg 1 ND 0.052 1,2-Dichloroethane mg/kg 1 07/10/20 09:46 07/10/20 15:54 107-06-2 1,2-Dichloropropane ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 78-87-5 1,3,5-Trimethylbenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 108-67-8 1,3-Dichlorobenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 541-73-1 0.052 1,3-Dichloropropane NΠ mg/kg 1 07/10/20 09:46 07/10/20 15:54 142-28-9 0.052 07/10/20 09:46 07/10/20 15:54 106-46-7 1,4-Dichlorobenzene ND mg/kg 1 07/10/20 09:46 07/10/20 15:54 123-91-1 1,4-Dioxane (p-Dioxane) ND mg/kg 10.4 1 07/10/20 09:46 07/10/20 15:54 594-20-7 ND 0.21 2,2-Dichloropropane mg/kg 1 2-Butanone (MEK) ND mg/kg 0.26 07/10/20 09:46 07/10/20 15:54 78-93-3 1 2-Chlorotoluene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 95-49-8 ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 106-43-4 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.26 1 07/10/20 09:46 07/10/20 15:54 108-10-1 4M Acetone ND mg/kg 1.0 1 07/10/20 09:46 07/10/20 15:54 67-64-1 4M Allyl chloride mg/kg ND 0.21 07/10/20 09:46 07/10/20 15:54 107-05-1 1 ND 0.021 07/10/20 09:46 07/10/20 15:54 71-43-2 Benzene mg/kg 1 ND 0.052 07/10/20 09:46 07/10/20 15:54 108-86-1 Bromobenzene mg/kg 1 ND 0.052 07/10/20 09:46 07/10/20 15:54 74-97-5 Bromochloromethane mg/kg 1 ND Bromodichloromethane 0.052 07/10/20 09:46 07/10/20 15:54 75-27-4 mg/kg 1 Bromoform ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 15:54 75-25-2 Bromomethane ND mg/kg 0.52 07/10/20 09:46 07/10/20 15:54 74-83-9 1 Carbon tetrachloride ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 56-23-5 Chlorobenzene ND 0.052 07/10/20 09:46 07/10/20 15:54 108-90-7 mg/kg 1 ND 0.52 07/10/20 09:46 07/10/20 15:54 75-00-3 Chloroethane mg/kg 1 Chloroform ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 67-66-3 Chloromethane ND 0.21 07/10/20 09:46 07/10/20 15:54 74-87-3 mg/kg 1 Dibromochloromethane ND mg/kg 0.21 07/10/20 09:46 07/10/20 15:54 124-48-1



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

1,2-Dichloroethane-d4 (S)

4-Bromofluorobenzene (S)

Date: 07/17/2020 04:36 PM

Toluene-d8 (S)

Lab ID: 10523948005 Collected: 07/07/20 11:00 Sample: SB-22 (2-4) Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Dibromomethane ND 07/10/20 09:46 07/10/20 15:54 74-95-3 mg/kg 0.052 1 Dichlorodifluoromethane ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 15:54 75-71-8 Dichlorofluoromethane ND mg/kg 0.52 1 07/10/20 09:46 07/10/20 15:54 75-43-4 2M Diethyl ether (Ethyl ether) ND 0.21 07/10/20 09:46 07/10/20 15:54 60-29-7 mg/kg 1 Ethylbenzene ND 0.052 07/10/20 09:46 07/10/20 15:54 100-41-4 mg/kg 1 Hexachloro-1,3-butadiene ND mg/kg 0.26 07/10/20 09:46 07/10/20 15:54 87-68-3 1 Isopropylbenzene (Cumene) ND 0.052 07/10/20 09:46 07/10/20 15:54 98-82-8 mg/kg 1 ND mg/kg 0.052 Methyl-tert-butyl ether 07/10/20 09:46 07/10/20 15:54 1634-04-4 1 Methylene Chloride ND 0.21 07/10/20 09:46 07/10/20 15:54 75-09-2 mg/kg 1 Naphthalene ND mg/kg 0.21 07/10/20 09:46 07/10/20 15:54 91-20-3 1 Styrene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 100-42-5 0.052 Tetrachloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 15:54 127-18-4 Tetrahydrofuran ND mg/kg 2.1 07/10/20 09:46 07/10/20 15:54 109-99-9 1 Toluene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 108-88-3 1 Trichloroethene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 79-01-6 Trichlorofluoromethane ND mg/kg 0.21 1 07/10/20 09:46 07/10/20 15:54 75-69-4 2M Vinvl chloride ND mg/kg 0.021 1 07/10/20 09:46 07/10/20 15:54 75-01-4 Xylene (Total) ND mg/kg 0.16 07/10/20 09:46 07/10/20 15:54 1330-20-7 1 cis-1,2-Dichloroethene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 156-59-2 1 ND 0.052 cis-1,3-Dichloropropene mg/kg 1 07/10/20 09:46 07/10/20 15:54 10061-01-5 ND n-Butylbenzene mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 104-51-8 n-Propylbenzene ND mg/kg 07/10/20 09:46 07/10/20 15:54 103-65-1 0.052 1 p-Isopropyltoluene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 99-87-6 sec-Butylbenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 135-98-8 tert-Butylbenzene ND mg/kg 0.052 1 07/10/20 09:46 07/10/20 15:54 98-06-6 trans-1,2-Dichloroethene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 156-60-5 1 trans-1,3-Dichloropropene ND mg/kg 0.052 07/10/20 09:46 07/10/20 15:54 10061-02-6 Surrogates

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07/10/20 09:46 07/10/20 15:54 17060-07-0

07/10/20 09:46 07/10/20 15:54 2037-26-5

07/10/20 09:46 07/10/20 15:54 460-00-4

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Project: 2606-0017 Water Gremlin

Date: 07/17/2020 04:36 PM

Sample: Rinsate 070720	Lab ID: 105	23948006	Collected: 07/07/2	20 11:30	Received: 07	7/07/20 16:12 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270E MSSV 14 Dioxane By SIM	Analytical Metl	nod: EPA 82	270E by SIM Prepara	ation Me	thod: EPA Mod. 3	3510C		
•	Pace Analytica	l Services -	Minneapolis					
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/13/20 15:24	07/14/20 19:59	123-91-1	
Surrogates								
1,4-Dioxane-d8 (S)	28	%.	30-125	1	07/13/20 15:24	07/14/20 19:59	)	S0
8260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	l Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/09/20 14:19	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/09/20 14:19	107-05-1	
	ND	ug/L	1.0	1		07/09/20 14:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/09/20 14:19		
Bromochloromethane	ND	ug/L	1.0	1		07/09/20 14:19		
Bromodichloromethane	ND	ug/L	1.0	1		07/09/20 14:19		
3romoform	ND	ug/L	4.0	1		07/09/20 14:19		
Bromomethane	ND	ug/L	4.0	1		07/09/20 14:19		6M
2-Butanone (MEK)	ND	ug/L	5.0	1		07/09/20 14:19		Olvi
n-Butylbenzene	ND ND	ug/L ug/L	1.0	1		07/09/20 14:19		
sec-Butylbenzene	ND ND	ug/L	1.0	1		07/09/20 14:19		
	ND ND	•	1.0	1		07/09/20 14:19		
ert-Butylbenzene Carbon tetrachloride		ug/L		1		07/09/20 14:19		
	ND	ug/L	1.0					
Chlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19		
Chloroethane	ND	ug/L	1.0	1		07/09/20 14:19		
Chloroform	ND	ug/L	1.0	1		07/09/20 14:19		
Chloromethane	ND	ug/L	4.0	1		07/09/20 14:19		
2-Chlorotoluene	ND	ug/L	1.0	1		07/09/20 14:19		
1-Chlorotoluene	ND	ug/L	1.0	1		07/09/20 14:19		
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/09/20 14:19		
Dibromochloromethane	ND	ug/L	1.0	1		07/09/20 14:19	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/09/20 14:19	106-93-4	
Dibromomethane	ND	ug/L	4.0	1		07/09/20 14:19	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/09/20 14:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		07/09/20 14:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		07/09/20 14:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		07/09/20 14:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/09/20 14:19	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/09/20 14:19	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/09/20 14:19	75-43-4	
1,2-Dichloropropane	ND	ug/L	4.0	1		07/09/20 14:19		
1,3-Dichloropropane	ND	ug/L	1.0	1		07/09/20 14:19		
2,2-Dichloropropane	ND	ug/L	4.0	1		07/09/20 14:19		
1,1-Dichloropropene	ND	ug/L	1.0	1		07/09/20 14:19		
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/09/20 14:19		
rans-1,3-Dichloropropene	ND ND	ug/L	4.0	1		07/09/20 14:19		
Diethyl ether (Ethyl ether)	ND ND	ug/L ug/L	4.0	1		07/09/20 14:19		



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Sample: Rinsate 070720	Lab ID: 105	23948006	Collected: 07/07/2	20 11:30	Received: 0	7/07/20 16:12 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	l Services -	Minneapolis					
Ethylbenzene	ND	ug/L	1.0	1		07/09/20 14:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/09/20 14:19	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/09/20 14:19	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/09/20 14:19	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/09/20 14:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/09/20 14:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/09/20 14:19	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/09/20 14:19	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/09/20 14:19	103-65-1	
Styrene	ND	ug/L	1.0	1		07/09/20 14:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/09/20 14:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/09/20 14:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		07/09/20 14:19	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		07/09/20 14:19		
Toluene	ND	ug/L	1.0	1		07/09/20 14:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/09/20 14:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/09/20 14:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/09/20 14:19	79-00-5	
Trichloroethene	ND	ug/L	0.40	1		07/09/20 14:19		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/09/20 14:19		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/09/20 14:19		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/09/20 14:19		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/09/20 14:19		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/09/20 14:19		
Vinyl chloride	ND	ug/L	0.20	1		07/09/20 14:19		
Xylene (Total)	ND	ug/L	3.0	1		07/09/20 14:19		
m&p-Xylene	ND	ug/L	2.0	1		07/09/20 14:19		
o-Xylene	ND	ug/L	1.0	1		07/09/20 14:19		
Surrogates	140	ug/ L	1.0			3.700/20 14.10	55 41 5	
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		07/09/20 14:19	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		07/09/20 14:19		
4-Bromofluorobenzene (S)	101	%.	75-125	1		07/09/20 14:19		



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948007 Sample: SB-23 (2-4) Collected: 07/07/20 12:30 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 6.0 0.10 1 07/09/20 13:03 N2 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis 1,1,1,2-Tetrachloroethane ND 0.054 1 07/10/20 09:46 07/10/20 16:14 630-20-6 mg/kg 1,1,1-Trichloroethane ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 71-55-6 1,1,2,2-Tetrachloroethane ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 79-34-5 1,1,2-Trichloroethane ND 0.054 07/10/20 09:46 07/10/20 16:14 79-00-5 mg/kg 1 07/10/20 09:46 07/10/20 16:14 76-13-1 1,1,2-Trichlorotrifluoroethane ND mg/kg 0.22 1 1,1-Dichloroethane ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 75-34-3 1,1-Dichloroethene ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 75-35-4 1 ND 0.054 07/10/20 09:46 07/10/20 16:14 563-58-6 1,1-Dichloropropene mg/kg 1 NΠ 0.054 07/10/20 09:46 07/10/20 16:14 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND mg/kg 0.22 07/10/20 09:46 07/10/20 16:14 96-18-4 1 ND 1,2,4-Trichlorobenzene mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 120-82-1 ND 1,2,4-Trimethylbenzene mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.54 1 07/10/20 09:46 07/10/20 16:14 96-12-8 4M 1,2-Dibromoethane (EDB) ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 106-93-4 1 07/10/20 09:46 07/10/20 16:14 1,2-Dichlorobenzene ND 0.054 mg/kg 1 ND 0.054 1,2-Dichloroethane mg/kg 1 07/10/20 09:46 07/10/20 16:14 107-06-2 1,2-Dichloropropane ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 78-87-5 1,3,5-Trimethylbenzene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 108-67-8 1,3-Dichlorobenzene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 541-73-1 1,3-Dichloropropane NΠ mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 142-28-9 1,4-Dichlorobenzene ND 0.054 07/10/20 09:46 07/10/20 16:14 106-46-7 mg/kg 1 07/10/20 09:46 07/10/20 16:14 123-91-1 1,4-Dioxane (p-Dioxane) ND mg/kg 10.9 1 ND 0.22 07/10/20 09:46 07/10/20 16:14 594-20-7 2,2-Dichloropropane mg/kg 1 2-Butanone (MEK) ND mg/kg 0.27 07/10/20 09:46 07/10/20 16:14 78-93-3 1 2-Chlorotoluene ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 95-49-8 ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 106-43-4 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.27 1 07/10/20 09:46 07/10/20 16:14 108-10-1 4M Acetone ND mg/kg 1.1 1 07/10/20 09:46 07/10/20 16:14 67-64-1 4M Allyl chloride mg/kg ND 0.22 07/10/20 09:46 07/10/20 16:14 107-05-1 1 ND 0.022 07/10/20 09:46 07/10/20 16:14 71-43-2 Benzene mg/kg 1 ND 0.054 07/10/20 09:46 07/10/20 16:14 108-86-1 Bromobenzene mg/kg 1 ND 0.054 07/10/20 09:46 07/10/20 16:14 74-97-5 Bromochloromethane mg/kg 1 ND Bromodichloromethane 0.054 07/10/20 09:46 07/10/20 16:14 75-27-4 mg/kg 1 Bromoform ND mg/kg 0.22 1 07/10/20 09:46 07/10/20 16:14 75-25-2 Bromomethane ND mg/kg 0.54 07/10/20 09:46 07/10/20 16:14 74-83-9 1 Carbon tetrachloride ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 56-23-5 Chlorobenzene ND 0.054 07/10/20 09:46 07/10/20 16:14 108-90-7 mg/kg 1 ND 0.54 07/10/20 09:46 07/10/20 16:14 75-00-3 Chloroethane mg/kg 1 Chloroform ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 67-66-3 Chloromethane ND 0.22 07/10/20 09:46 07/10/20 16:14 74-87-3 mg/kg 1 Dibromochloromethane ND mg/kg 0.22 07/10/20 09:46 07/10/20 16:14 124-48-1



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

4-Bromofluorobenzene (S)

Date: 07/17/2020 04:36 PM

Lab ID: 10523948007 Collected: 07/07/20 12:30 Received: 07/07/20 16:12 Sample: SB-23 (2-4) Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Dibromomethane ND 07/10/20 09:46 07/10/20 16:14 74-95-3 mg/kg 0.054 1 Dichlorodifluoromethane ND mg/kg 0.22 07/10/20 09:46 07/10/20 16:14 75-71-8 1 Dichlorofluoromethane ND mg/kg 0.54 1 07/10/20 09:46 07/10/20 16:14 75-43-4 2M Diethyl ether (Ethyl ether) ND 0.22 07/10/20 09:46 07/10/20 16:14 60-29-7 mg/kg 1 Ethylbenzene ND 0.054 07/10/20 09:46 07/10/20 16:14 100-41-4 mg/kg 1 Hexachloro-1,3-butadiene ND mg/kg 0.27 07/10/20 09:46 07/10/20 16:14 87-68-3 1 Isopropylbenzene (Cumene) ND 0.054 07/10/20 09:46 07/10/20 16:14 98-82-8 mg/kg 1 ND mg/kg 0.054 Methyl-tert-butyl ether 07/10/20 09:46 07/10/20 16:14 1634-04-4 1 Methylene Chloride ND 0.22 07/10/20 09:46 07/10/20 16:14 75-09-2 mg/kg 1 Naphthalene ND mg/kg 0.22 07/10/20 09:46 07/10/20 16:14 91-20-3 1 0.054 Styrene ND mg/kg 1 07/10/20 09:46 07/10/20 16:14 100-42-5 0.054 Tetrachloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 16:14 127-18-4 Tetrahydrofuran ND mg/kg 2.2 07/10/20 09:46 07/10/20 16:14 109-99-9 1 Toluene ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 108-88-3 1 Trichloroethene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 79-01-6 Trichlorofluoromethane 07/10/20 09:46 07/10/20 16:14 75-69-4 ND mg/kg 0.22 1 2M Vinvl chloride ND mg/kg 0.022 1 07/10/20 09:46 07/10/20 16:14 75-01-4 Xylene (Total) ND mg/kg 0.16 07/10/20 09:46 07/10/20 16:14 1330-20-7 1 07/10/20 09:46 07/10/20 16:14 156-59-2 cis-1,2-Dichloroethene ND mg/kg 0.054 1 ND cis-1,3-Dichloropropene mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 10061-01-5 ND n-Butylbenzene mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 104-51-8 07/10/20 09:46 07/10/20 16:14 103-65-1 n-Propylbenzene ND mg/kg 0.054 1 p-Isopropyltoluene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 99-87-6 sec-Butylbenzene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 135-98-8 tert-Butylbenzene ND mg/kg 0.054 1 07/10/20 09:46 07/10/20 16:14 98-06-6 trans-1,2-Dichloroethene ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 156-60-5 1 trans-1,3-Dichloropropene ND mg/kg 0.054 07/10/20 09:46 07/10/20 16:14 10061-02-6 Surrogates 1,2-Dichloroethane-d4 (S) 112 %. 75-125 07/10/20 09:46 07/10/20 16:14 17060-07-0 1 100 Toluene-d8 (S) %. 75-125 1 07/10/20 09:46 07/10/20 16:14 2037-26-5

#### **REPORT OF LABORATORY ANALYSIS**

75-125

1

07/10/20 09:46 07/10/20 16:14 460-00-4

101

%.



#### ANALYTICAL RESULTS

Project: 2606-0017 Water Gremlin

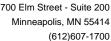
Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948008 Sample: MeOH Trip Blank Collected: 07/07/20 00:00 Received: 07/07/20 16:12 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B 8260D MSV 5030 Med Level Pace Analytical Services - Minneapolis ND 07/10/20 09:46 07/10/20 13:34 630-20-6 1,1,1,2-Tetrachloroethane mg/kg 0.050 1 1,1,1-Trichloroethane ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 71-55-6 1 1,1,2,2-Tetrachloroethane ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 79-34-5 0.050 1,1,2-Trichloroethane ND mg/kg 1 07/10/20 09:46 07/10/20 13:34 79-00-5 0.20 1,1,2-Trichlorotrifluoroethane ND mg/kg 1 07/10/20 09:46 07/10/20 13:34 76-13-1 1,1-Dichloroethane ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 75-34-3 1 ND 0.050 07/10/20 09:46 07/10/20 13:34 75-35-4 1.1-Dichloroethene mg/kg 1 0.050 NΠ 07/10/20 09:46 07/10/20 13:34 563-58-6 1,1-Dichloropropene mg/kg 1 ND 0.050 07/10/20 09:46 07/10/20 13:34 87-61-6 1,2,3-Trichlorobenzene mg/kg 1 1,2,3-Trichloropropane ND 0.20 07/10/20 09:46 07/10/20 13:34 96-18-4 mg/kg 1 1,2,4-Trichlorobenzene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 95-63-6 1,2-Dibromo-3-chloropropane ND mg/kg 0.50 07/10/20 09:46 07/10/20 13:34 96-12-8 4M 1 1,2-Dibromoethane (EDB) ND 0.050 07/10/20 09:46 07/10/20 13:34 106-93-4 mg/kg 1 1,2-Dichlorobenzene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 95-50-1 1,2-Dichloroethane ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 107-06-2 1.2-Dichloropropane ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 78-87-5 ND 07/10/20 09:46 07/10/20 13:34 108-67-8 1,3,5-Trimethylbenzene mg/kg 0.050 1 1,3-Dichlorobenzene ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 541-73-1 1 07/10/20 09:46 07/10/20 13:34 142-28-9 1,3-Dichloropropane ND mg/kg 0.050 1 ND 1,4-Dichlorobenzene mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 106-46-7 ND 1,4-Dioxane (p-Dioxane) mg/kg 10.0 1 07/10/20 09:46 07/10/20 13:34 123-91-1 2,2-Dichloropropane ND mg/kg 0.20 1 07/10/20 09:46 07/10/20 13:34 594-20-7 2-Butanone (MEK) ND mg/kg 0.25 07/10/20 09:46 07/10/20 13:34 78-93-3 1 2-Chlorotoluene ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 95-49-8 1 ND 0.050 07/10/20 09:46 07/10/20 13:34 106-43-4 4-Chlorotoluene mg/kg 1 4-Methyl-2-pentanone (MIBK) ND mg/kg 0.25 1 07/10/20 09:46 07/10/20 13:34 108-10-1 4M Acetone ND mg/kg 1.0 1 07/10/20 09:46 07/10/20 13:34 67-64-1 4M ND 0.20 07/10/20 09:46 07/10/20 13:34 107-05-1 Allyl chloride mg/kg 1 ND 0.020 Benzene mg/kg 07/10/20 09:46 07/10/20 13:34 71-43-2 1 ND 0.050 07/10/20 09:46 07/10/20 13:34 108-86-1 Bromobenzene mg/kg 1 ND 0.050 Bromochloromethane 07/10/20 09:46 07/10/20 13:34 74-97-5 mg/kg 1 Bromodichloromethane ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 75-27-4 Bromoform ND mg/kg 0.20 07/10/20 09:46 07/10/20 13:34 75-25-2 1 Bromomethane ND mg/kg 0.50 1 07/10/20 09:46 07/10/20 13:34 74-83-9 Carbon tetrachloride ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 56-23-5 ND 0.050 07/10/20 09:46 07/10/20 13:34 108-90-7 Chlorobenzene mg/kg 1 Chloroethane ND mg/kg 0.50 07/10/20 09:46 07/10/20 13:34 75-00-3 1 mg/kg Chloroform ND 0.050 07/10/20 09:46 07/10/20 13:34 67-66-3 1 mg/kg Chloromethane ND 0.20 07/10/20 09:46 07/10/20 13:34 74-87-3 1 Dibromochloromethane ND mg/kg 0.20 07/10/20 09:46 07/10/20 13:34 124-48-1 1 ND 07/10/20 09:46 07/10/20 13:34 74-95-3 Dibromomethane mg/kg 0.050 1 Dichlorodifluoromethane ND 0.20 07/10/20 09:46 07/10/20 13:34 75-71-8 mg/kg 1 Dichlorofluoromethane ND mg/kg 0.50 1 07/10/20 09:46 07/10/20 13:34 75-43-4 2M Diethyl ether (Ethyl ether) ND mg/kg 0.20 07/10/20 09:46 07/10/20 13:34 60-29-7

#### REPORT OF LABORATORY ANALYSIS

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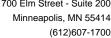


Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID: 10523948008 Collected: 07/07/20 00:00 Sample: MeOH Trip Blank Received: 07/07/20 16:12 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260D MSV 5030 Med Level Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis Ethylbenzene ND 07/10/20 09:46 07/10/20 13:34 100-41-4 mg/kg 0.050 Hexachloro-1,3-butadiene ND mg/kg 0.25 1 07/10/20 09:46 07/10/20 13:34 87-68-3 Isopropylbenzene (Cumene) ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 98-82-8 Methyl-tert-butyl ether ND 0.050 07/10/20 09:46 07/10/20 13:34 1634-04-4 mg/kg 1 Methylene Chloride ND 0.20 07/10/20 09:46 07/10/20 13:34 75-09-2 mg/kg Naphthalene ND mg/kg 0.20 07/10/20 09:46 07/10/20 13:34 91-20-3 1 Styrene ND 0.050 07/10/20 09:46 07/10/20 13:34 100-42-5 mg/kg 1 ND mg/kg 0.050 Tetrachloroethene 07/10/20 09:46 07/10/20 13:34 127-18-4 1 Tetrahydrofuran ND 2.0 07/10/20 09:46 07/10/20 13:34 109-99-9 mg/kg 1 Toluene ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 108-88-3 1 0.050 Trichloroethene ND mg/kg 1 07/10/20 09:46 07/10/20 13:34 79-01-6 Trichlorofluoromethane ND mg/kg 0.20 1 07/10/20 09:46 07/10/20 13:34 75-69-4 2M Vinyl chloride ND mg/kg 0.020 07/10/20 09:46 07/10/20 13:34 75-01-4 1 Xylene (Total) ND mg/kg 0.15 07/10/20 09:46 07/10/20 13:34 1330-20-7 1 cis-1,2-Dichloroethene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 156-59-2 0.050 cis-1,3-Dichloropropene ND mg/kg 1 07/10/20 09:46 07/10/20 13:34 10061-01-5 n-Butylbenzene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 104-51-8 ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 103-65-1 n-Propylbenzene 1 p-Isopropyltoluene ND mg/kg 0.050 07/10/20 09:46 07/10/20 13:34 99-87-6 1 ND sec-Butylbenzene mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 135-98-8 ND tert-Butylbenzene mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 98-06-6 trans-1,2-Dichloroethene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 156-60-5 trans-1,3-Dichloropropene ND mg/kg 0.050 1 07/10/20 09:46 07/10/20 13:34 10061-02-6 Surrogates 1,2-Dichloroethane-d4 (S) 114 %. 75-125 07/10/20 09:46 07/10/20 13:34 17060-07-0 1 Toluene-d8 (S) 99 75-125 07/10/20 09:46 07/10/20 13:34 2037-26-5 %. 1 75-125 4-Bromofluorobenzene (S) 100 07/10/20 09:46 07/10/20 13:34 460-00-4 %. 1





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

QC Batch: 685779 Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523948001, 10523948002, 10523948003, 10523948004, 10523948005, 10523948007

SAMPLE DUPLICATE: 3667708

10523948004 Dup Max RPD RPD Qualifiers Parameter Units Result Result 3.3 Percent Moisture % 3.1 6 30 N2

SAMPLE DUPLICATE: 3667709

Date: 07/17/2020 04:36 PM

		10523346001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Percent Moisture	<del></del> %	27.6	27.0		3	0 N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

QC Batch: 686036 Analysis Method: EPA 8260D

QC Batch Method: EPA 5035/5030B Analysis Description: 8260D MSV 5030 Med Level

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523948001, 10523948002, 10523948003, 10523948004, 10523948005, 10523948007, 10523948008

METHOD BLANK: 3668680 Matrix: Solid

Associated Lab Samples: 10523948001, 10523948002, 10523948003, 10523948004, 10523948005, 10523948007, 10523948008

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane		ND	0.050	07/10/20 13:14	
1,1,1-Trichloroethane	mg/kg	ND	0.050	07/10/20 13:14	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.050	07/10/20 13:14	
1,1,2-Trichloroethane	mg/kg	ND	0.050	07/10/20 13:14	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.20	07/10/20 13:14	
1,1-Dichloroethane	mg/kg	ND	0.050	07/10/20 13:14	
1,1-Dichloroethene	mg/kg	ND	0.050	07/10/20 13:14	
1,1-Dichloropropene	mg/kg	ND	0.050	07/10/20 13:14	
1,2,3-Trichlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,2,3-Trichloropropane	mg/kg	ND	0.20	07/10/20 13:14	
1,2,4-Trichlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,2,4-Trimethylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.50	07/10/20 13:14	4M
1,2-Dibromoethane (EDB)	mg/kg	ND	0.050	07/10/20 13:14	
1,2-Dichlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,2-Dichloroethane	mg/kg	ND	0.050	07/10/20 13:14	
1,2-Dichloropropane	mg/kg	ND	0.050	07/10/20 13:14	
1,3,5-Trimethylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,3-Dichlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,3-Dichloropropane	mg/kg	ND	0.050	07/10/20 13:14	
1,4-Dichlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	10.0	07/10/20 13:14	
2,2-Dichloropropane	mg/kg	ND	0.20	07/10/20 13:14	
2-Butanone (MEK)	mg/kg	ND	0.25	07/10/20 13:14	
2-Chlorotoluene	mg/kg	ND	0.050	07/10/20 13:14	
4-Chlorotoluene	mg/kg	ND	0.050	07/10/20 13:14	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.25	07/10/20 13:14	4M
Acetone	mg/kg	ND	1.0	07/10/20 13:14	4M
Allyl chloride	mg/kg	ND	0.20	07/10/20 13:14	
Benzene	mg/kg	ND	0.020	07/10/20 13:14	
Bromobenzene	mg/kg	ND	0.050	07/10/20 13:14	
Bromochloromethane	mg/kg	ND	0.050	07/10/20 13:14	
Bromodichloromethane	mg/kg	ND	0.050	07/10/20 13:14	
Bromoform	mg/kg	ND	0.20	07/10/20 13:14	
Bromomethane	mg/kg	ND	0.50	07/10/20 13:14	
Carbon tetrachloride	mg/kg	ND	0.050	07/10/20 13:14	
Chlorobenzene	mg/kg	ND	0.050	07/10/20 13:14	
Chloroethane	mg/kg	ND	0.50	07/10/20 13:14	
Chloroform	mg/kg	ND	0.050	07/10/20 13:14	
Chloromethane	mg/kg	ND	0.20	07/10/20 13:14	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

METHOD BLANK: 3668680 Matrix: Solid

Associated Lab Samples: 10523948001, 10523948002, 10523948003, 10523948004, 10523948005, 10523948007, 10523948008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	mg/kg	= =	0.050	07/10/20 13:14	
cis-1,3-Dichloropropene	mg/kg	ND	0.050	07/10/20 13:14	
Dibromochloromethane	mg/kg	ND	0.20	07/10/20 13:14	
Dibromomethane	mg/kg	ND	0.050	07/10/20 13:14	
Dichlorodifluoromethane	mg/kg	ND	0.20	07/10/20 13:14	
Dichlorofluoromethane	mg/kg	ND	0.50	07/10/20 13:14	2M
Diethyl ether (Ethyl ether)	mg/kg	ND	0.20	07/10/20 13:14	
Ethylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
Hexachloro-1,3-butadiene	mg/kg	ND	0.25	07/10/20 13:14	
Isopropylbenzene (Cumene)	mg/kg	ND	0.050	07/10/20 13:14	
Methyl-tert-butyl ether	mg/kg	ND	0.050	07/10/20 13:14	
Methylene Chloride	mg/kg	ND	0.20	07/10/20 13:14	
n-Butylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
n-Propylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
Naphthalene	mg/kg	ND	0.20	07/10/20 13:14	
p-Isopropyltoluene	mg/kg	ND	0.050	07/10/20 13:14	
sec-Butylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
Styrene	mg/kg	ND	0.050	07/10/20 13:14	
tert-Butylbenzene	mg/kg	ND	0.050	07/10/20 13:14	
Tetrachloroethene	mg/kg	ND	0.050	07/10/20 13:14	
Tetrahydrofuran	mg/kg	ND	2.0	07/10/20 13:14	
Toluene	mg/kg	ND	0.050	07/10/20 13:14	
trans-1,2-Dichloroethene	mg/kg	ND	0.050	07/10/20 13:14	
trans-1,3-Dichloropropene	mg/kg	ND	0.050	07/10/20 13:14	
Trichloroethene	mg/kg	ND	0.050	07/10/20 13:14	
Trichlorofluoromethane	mg/kg	ND	0.20	07/10/20 13:14	2M
Vinyl chloride	mg/kg	ND	0.020	07/10/20 13:14	
Xylene (Total)	mg/kg	ND	0.15	07/10/20 13:14	
1,2-Dichloroethane-d4 (S)	%.	114	75-125	07/10/20 13:14	
4-Bromofluorobenzene (S)	%.	102	75-125	07/10/20 13:14	
Toluene-d8 (S)	%.	105	75-125	07/10/20 13:14	

LABORATORY CONTROL SAMPLE:	3668681					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	1	0.99	99	64-125	
1,1,1-Trichloroethane	mg/kg	1	1.0	105	60-135	
1,1,2,2-Tetrachloroethane	mg/kg	1	0.96	96	61-125	
1,1,2-Trichloroethane	mg/kg	1	0.98	98	66-125	
1,1,2-Trichlorotrifluoroethane	mg/kg	1	0.86	86	51-136	
1,1-Dichloroethane	mg/kg	1	0.98	98	61-125	
1,1-Dichloroethene	mg/kg	1	0.86	86	45-136	
1,1-Dichloropropene	mg/kg	1	1.0	103	51-136	
1,2,3-Trichlorobenzene	mg/kg	1	0.98	98	63-125	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

LABORATORY CONTROL SAMPLE:	3668681	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifier
1,2,3-Trichloropropane	mg/kg		0.98	98	61-125	
1,2,4-Trichlorobenzene	mg/kg	1	0.99	99	61-125	
1,2,4-Trimethylbenzene	mg/kg	1	1.1	110	63-126	
1,2-Dibromo-3-chloropropane	mg/kg	2.5	2.3	92	58-125	
1,2-Dibromoethane (EDB)	mg/kg	1	0.98	98	64-125	
1,2-Dichlorobenzene	mg/kg	1	0.98	98	62-125	
1,2-Dichloroethane	mg/kg	1	0.89	89	56-125	
1,2-Dichloropropane	mg/kg	1	1.0	100	64-125	
1,3,5-Trimethylbenzene	mg/kg	1	1.1	109	64-125	
1,3-Dichlorobenzene	mg/kg	1	1.0	100	62-125	
1,3-Dichloropropane	mg/kg	1	0.97	97	63-125	
1,4-Dichlorobenzene	mg/kg	1	0.93	93	60-125	
1,4-Dioxane (p-Dioxane)		20	19.3	96	44-141	
	mg/kg	20 1	19.3	96 107	61-130	
2,2-Dichloropropane	mg/kg	1 5	4.8	96	47-129	
2-Butanone (MEK)	mg/kg	5 1			_	
2-Chlorotoluene	mg/kg		1.0	105	63-125	
4-Chlorotoluene	mg/kg	1	1.1	105	63-125	
4-Methyl-2-pentanone (MIBK)	mg/kg	5	4.7	94	56-125	
Acetone	mg/kg	5	5.0	101	49-132	
Allyl chloride	mg/kg	1	0.84	84	48-130	
Benzene	mg/kg	1	1.0	101	59-125	
Bromobenzene	mg/kg	1	0.94	94	61-125	
Bromochloromethane	mg/kg	1	0.98	98	57-125	
Bromodichloromethane	mg/kg	1	1.0	100	67-125	
Bromoform	mg/kg	1	0.94	94	61-125	
Bromomethane	mg/kg	1	0.78	78	44-136	
Carbon tetrachloride	mg/kg	1	1.0	104	58-134	
Chlorobenzene	mg/kg	1	0.97	97	60-125	
Chloroethane	mg/kg	1	0.81	81	30-150	
Chloroform	mg/kg	1	0.98	98	63-125	
Chloromethane	mg/kg	1	0.74	74	43-125	
cis-1,2-Dichloroethene	mg/kg	1	1.1	106	60-125	
cis-1,3-Dichloropropene	mg/kg	1	0.98	98	63-125	
Dibromochloromethane	mg/kg	1	1.0	102	61-125	
Dibromomethane	mg/kg	1	0.93	93	62-125	
Dichlorodifluoromethane	mg/kg	1	0.62	62	35-125	
Dichlorofluoromethane	mg/kg	1	0.95	95	49-128	
Diethyl ether (Ethyl ether)	mg/kg	1	0.74	74	42-127	
Ethylbenzene	mg/kg	1	1.0	101	62-125	
Hexachloro-1,3-butadiene	mg/kg	1	1.1	107	59-132	
sopropylbenzene (Cumene)	mg/kg	1	1.1	107	63-126	
Methyl-tert-butyl ether	mg/kg	1	0.93	93	58-125	
Methylene Chloride	mg/kg	1	0.88	88	50-125	
n-Butylbenzene	mg/kg	1	1.1	109	60-129	
n-Propylbenzene	mg/kg	1	1.1	106	63-126	
Naphthalene	mg/kg	1	1.0	101	57-125	
p-Isopropyltoluene	mg/kg	1	1.1	115	62-127	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

ABORATORY CONTROL SAMPLE:	3668681					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Butylbenzene	mg/kg		1.1	109	64-128	
ne	mg/kg	1	1.0	104	62-125	
utylbenzene	mg/kg	1	1.1	109	62-129	
chloroethene	mg/kg	1	1.0	105	56-133	
hydrofuran	mg/kg	10	11.8	118	58-126	
ne	mg/kg	1	1.0	104	59-125	
1,2-Dichloroethene	mg/kg	1	0.96	96	46-134	
1,3-Dichloropropene	mg/kg	1	1.0	103	66-125	
proethene	mg/kg	1	1.1	108	62-125	
rofluoromethane	mg/kg	1	0.86	86	30-150	
hloride	mg/kg	1	0.82	82	44-127	
e (Total)	mg/kg	3	3.0	101	65-125	
chloroethane-d4 (S)	%.			99	75-125	
nofluorobenzene (S)	%.			106	75-125	
e-d8 (S)	%.			104	75-125	

MATRIX SPIKE & MATRIX SI	PIKE DUPLIC	ATE: 3668	682		3668683							
			MS	MSD								
	10	523948004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	mg/kg	ND	1	1	1.4	1.3	129	132	55-150	4	30	
1,1,1-Trichloroethane	mg/kg	ND	1	1	1.4	1.4	131	141	48-150	1	30	
1,1,2,2-Tetrachloroethane	mg/kg	ND	1	1	1.4	1.3	125	123	47-150	8	30	
1,1,2-Trichloroethane	mg/kg	ND	1	1	1.4	1.3	125	130	50-150	2	30	
1,1,2- Trichlorotrifluoroethane	mg/kg	ND	1	1	1.4	1.5	132	145	43-150	3	30	
1,1-Dichloroethane	mg/kg	ND	1	1	1.3	1.3	120	127	36-150	0	30	
1,1-Dichloroethene	mg/kg	ND	1	1	1.4	1.5	126	144	43-150	7	30	
1,1-Dichloropropene	mg/kg	ND	1	1	1.4	1.4	126	133	38-150	1	30	
1,2,3-Trichlorobenzene	mg/kg	ND	1	1	1.5	1.3	134	130	48-150	9	30	
1,2,3-Trichloropropane	mg/kg	ND	1	1	1.5	1.3	136	130	48-150	11	30	
1,2,4-Trichlorobenzene	mg/kg	ND	1	1	1.4	1.3	130	128	46-150	7	30	
1,2,4-Trimethylbenzene	mg/kg	ND	1	1	1.5	1.4	143	138	53-150	10	30	L1
1,2-Dibromo-3- chloropropane	mg/kg	ND	2.7	2.6	3.5	3.1	129	124	57-150	11	30	5M
1,2-Dibromoethane (EDB)	mg/kg	ND	1	1	1.4	1.3	125	128	54-150	4	30	
1,2-Dichlorobenzene	mg/kg	ND	1	1	1.4	1.3	131	127	53-150	10	30	
1,2-Dichloroethane	mg/kg	ND	1	1	1.2	1.3	115	124	50-150	1	30	
1,2-Dichloropropane	mg/kg	ND	1	1	1.4	1.3	128	128	45-150	7	30	
1,3,5-Trimethylbenzene	mg/kg	ND	1	1	1.6	1.4	145	138	60-150	12	30	
1,3-Dichlorobenzene	mg/kg	ND	1	1	1.5	1.3	135	131	52-150	9	30	
1,3-Dichloropropane	mg/kg	ND	1	1	1.3	1.3	123	123	49-150	6	30	
1,4-Dichlorobenzene	mg/kg	ND	1	1	1.3	1.2	120	121	53-150	5	30	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	21.7	20.4	25.4	25.7	117	126	46-150	1	30	
2,2-Dichloropropane	mg/kg	ND	1	1	1.5	1.5	140	149	37-150	0	30	
2-Butanone (MEK)	mg/kg	ND	5.4	5.1	6.0	6.4	111	125	35-150	5	30	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

MATRIX SPIKE & MATRIX SI	PIKE DUPLI	CATE: 3668			3668683	}						
			MS	MSD								
Parameter	Units	0523948004 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
2-Chlorotoluene	mg/kg	ND	1	1	1.5	1.3	138	132	50-150	11	30	
1-Chlorotoluene	mg/kg	ND	1	1	1.4	1.4	133	133	52-150	6	30	
1-Methyl-2-pentanone MIBK)	mg/kg	ND	5.4	5.1	6.4	5.9	118	115	43-150	9	30	5M
Acetone	mg/kg	ND	5.4	5.1	6.4	6.3	117	124	30-150	1	30	5M
Allyl chloride	mg/kg	ND	1	1	1.2	1.3	111	126	30-150	6	30	
Benzene	mg/kg	ND	1	1	1.3	1.3	121	127	46-150	2	30	
Bromobenzene	mg/kg	ND	1	1	1.4	1.3	127	125	54-150	8	30	
Bromochloromethane	mg/kg	ND	1	1	1.3	1.3	124	128	45-150	3	30	
Bromodichloromethane	mg/kg	ND	1	1	1.4	1.4	131	134	52-150	4	30	
Bromoform	mg/kg	ND	1	1	1.4	1.4	129	134	51-150	2	30	
Bromomethane	mg/kg	ND	1	1	1.3	1.3	118	124	30-150	1		
Carbon tetrachloride	mg/kg	ND	1	1	1.5	1.4	135	139	42-150	3		
Chlorobenzene	mg/kg	ND	1	1	1.3	1.3	123	127	51-150	3		
Chloroethane	mg/kg	ND	1	1	1.2	1.3	107	123	30-150	7		
Chloroform	mg/kg	ND	1	1	1.3	1.3	119	124	50-150	2		
Chloromethane	mg/kg	ND	1	1	1.1	1.1	100	106	30-150	0		
is-1,2-Dichloroethene	mg/kg	ND	1	1	1.4	1.4	127	136	45-150	0		
is-1,3-Dichloropropene	mg/kg	ND	1	1	1.4	1.3	129	128	48-150	7		
Dibromochloromethane	mg/kg	ND	1	1	1.5	1.4	136	140	51-150	3		
Dibromomethane	mg/kg	ND	1	1	1.4	1.3	127	126	53-150	7		
Dichlorodifluoromethane	mg/kg	ND	1	1	0.99	0.97	91	96	30-125	1		
Dichlorofluoromethane		ND	1	1	1.4	1.4	133	136	41-150	4		ЗМ
	mg/kg		1	1			122	126				SIVI
Diethyl ether (Ethyl ether)	mg/kg	ND		-	1.3	1.3			35-138	3		
Ethylbenzene	mg/kg	ND	1	1	1.4	1.3	129	131	59-150	5		
Hexachloro-1,3-butadiene sopropylbenzene Cumene)	mg/kg mg/kg	ND ND	1	1	1.6 1.5	1.4 1.4	147 138	137 138	58-150 50-150	13 7		
Methyl-tert-butyl ether	mg/kg	ND	1	1	1.4	1.3	130	124	50-150	11	30	
Methylene Chloride	mg/kg	ND	1	1	1.3	1.3	111	120	37-150	1		
n-Butylbenzene	mg/kg	ND	1	1	1.6	1.4	148	138	48-150	13		
n-Propylbenzene	mg/kg	ND	1	1	1.5	1.3	138	132	54-150	10		
Naphthalene	mg/kg	ND	1	1	1.4	1.3	131	131	50-150	7		
n-Isopropyltoluene	mg/kg	ND	1	1	1.6	1.5	150	143	51-150	11	30	
ec-Butylbenzene	mg/kg	ND	1	1	1.5	1.4	142	134	52-150	12		
Styrene	mg/kg	ND	1	1	1.5	1.4	134	136	52-150	5		
ert-Butylbenzene		ND ND	1	1	1.6	1.4	144	138	54-150	11	30	
etrachloroethene	mg/kg mg/kg	ND	1	1	1.5	1.4	137	136	50-150	7		
etrachioroethene etrahydrofuran	mg/kg	ND ND	10.9	10.1	13.2	13.2	121	130	49-150	0		
oluene		ND			1.3	1.3	121	126	55-150			
	mg/kg		1	1						4		
rans-1,2-Dichloroethene	mg/kg	ND	1	1	1.4	1.4	132	137	43-150	3		
rans-1,3-Dichloropropene	mg/kg	ND	1	1	1.4	1.4	129	135	49-150	2		
richloroethene	mg/kg	ND	1	1	1.5	1.4	140	140	43-150	6		014
richlorofluoromethane	mg/kg	ND	1	1	1.5	1.4	135	135	30-150	6		ЗМ
/inyl chloride	mg/kg	ND	1	1	1.2	1.1	107	113	30-150	1		
Xylene (Total)	mg/kg	ND	3.2	3.1	4.2	4.1	130	133	60-150	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

MATRIX SPIKE & MATRIX SF	PIKE DUPL	ICATE: 3668	682		366868	3						
		10523948004	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec		RPD	RPD	Qual
			Oone.				70 IXCC	70 TCC				
1,2-Dichloroethane-d4 (S)	%.						100	103	75-125			
4-Bromofluorobenzene (S)	%.						105	103	75-125			
Toluene-d8 (S)	%.						100	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



## **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

QC Batch: 685773 Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D Analysis Description: 8260D MSV 465 W

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523948006

METHOD BLANK: 3667677 Matrix: Water

Associated Lab Samples: 10523948006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	07/09/20 11:48	- · <u></u>
1,1,1-Trichloroethane	ug/L	ND	1.0	07/09/20 11:48	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	07/09/20 11:48	
1,1,2-Trichloroethane	ug/L	ND	1.0	07/09/20 11:48	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	07/09/20 11:48	
1,1-Dichloroethane	ug/L	ND	1.0	07/09/20 11:48	
1,1-Dichloroethene	ug/L	ND	1.0	07/09/20 11:48	
1,1-Dichloropropene	ug/L	ND	1.0	07/09/20 11:48	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
1,2,3-Trichloropropane	ug/L	ND	4.0	07/09/20 11:48	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	07/09/20 11:48	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	07/09/20 11:48	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	07/09/20 11:48	
1,2-Dichlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
1,2-Dichloroethane	ug/L	ND	1.0	07/09/20 11:48	
1,2-Dichloropropane	ug/L	ND	4.0	07/09/20 11:48	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	07/09/20 11:48	
1,3-Dichlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
1,3-Dichloropropane	ug/L	ND	1.0	07/09/20 11:48	
1,4-Dichlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
2,2-Dichloropropane	ug/L	ND	4.0	07/09/20 11:48	
2-Butanone (MEK)	ug/L	ND	5.0	07/09/20 11:48	
2-Chlorotoluene	ug/L	ND	1.0	07/09/20 11:48	
4-Chlorotoluene	ug/L	ND	1.0	07/09/20 11:48	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	07/09/20 11:48	
Acetone	ug/L	ND	20.0	07/09/20 11:48	
Allyl chloride	ug/L	ND	4.0	07/09/20 11:48	
Benzene	ug/L	ND	1.0	07/09/20 11:48	
Bromobenzene	ug/L	ND	1.0	07/09/20 11:48	
Bromochloromethane	ug/L	ND	1.0	07/09/20 11:48	
Bromodichloromethane	ug/L	ND	1.0	07/09/20 11:48	
Bromoform	ug/L	ND	4.0	07/09/20 11:48	
Bromomethane	ug/L	ND	4.0	07/09/20 11:48	6M
Carbon tetrachloride	ug/L	ND	1.0	07/09/20 11:48	
Chlorobenzene	ug/L	ND	1.0	07/09/20 11:48	
Chloroethane	ug/L	ND	1.0	07/09/20 11:48	
Chloroform	ug/L	ND	1.0	07/09/20 11:48	
Chloromethane	ug/L	ND	4.0	07/09/20 11:48	
cis-1,2-Dichloroethene	ug/L	ND	1.0	07/09/20 11:48	

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## **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

METHOD BLANK: 3667677 Matrix: Water

Associated Lab Samples: 10523948006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	4.0	07/09/20 11:48	
Dibromochloromethane	ug/L	ND	1.0	07/09/20 11:48	
Dibromomethane	ug/L	ND	4.0	07/09/20 11:48	
Dichlorodifluoromethane	ug/L	ND	1.0	07/09/20 11:48	
Dichlorofluoromethane	ug/L	ND	1.0	07/09/20 11:48	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	07/09/20 11:48	
Ethylbenzene	ug/L	ND	1.0	07/09/20 11:48	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	07/09/20 11:48	
sopropylbenzene (Cumene)	ug/L	ND	1.0	07/09/20 11:48	
m&p-Xylene	ug/L	ND	2.0	07/09/20 11:48	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/09/20 11:48	
Methylene Chloride	ug/L	ND	4.0	07/09/20 11:48	
n-Butylbenzene	ug/L	ND	1.0	07/09/20 11:48	
n-Propylbenzene	ug/L	ND	1.0	07/09/20 11:48	
Naphthalene	ug/L	ND	4.0	07/09/20 11:48	
o-Xylene	ug/L	ND	1.0	07/09/20 11:48	
o-Isopropyltoluene	ug/L	ND	1.0	07/09/20 11:48	
sec-Butylbenzene	ug/L	ND	1.0	07/09/20 11:48	
Styrene	ug/L	ND	1.0	07/09/20 11:48	
tert-Butylbenzene	ug/L	ND	1.0	07/09/20 11:48	
Tetrachloroethene	ug/L	ND	1.0	07/09/20 11:48	
Tetrahydrofuran	ug/L	ND	10.0	07/09/20 11:48	
Toluene	ug/L	ND	1.0	07/09/20 11:48	
rans-1,2-Dichloroethene	ug/L	ND	1.0	07/09/20 11:48	
trans-1,3-Dichloropropene	ug/L	ND	4.0	07/09/20 11:48	
Trichloroethene	ug/L	ND	0.40	07/09/20 11:48	
Trichlorofluoromethane	ug/L	ND	1.0	07/09/20 11:48	
Vinyl chloride	ug/L	ND	0.20	07/09/20 11:48	
Xylene (Total)	ug/L	ND	3.0	07/09/20 11:48	
1,2-Dichloroethane-d4 (S)	%.	97	75-125	07/09/20 11:48	
4-Bromofluorobenzene (S)	%.	100	75-125	07/09/20 11:48	
Toluene-d8 (S)	%.	95	75-125	07/09/20 11:48	

LABORATORY CONTROL SAMPLE:	3667678					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L		18.1	90	75-128	
1,1,1-Trichloroethane	ug/L	20	18.9	95	75-128	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	69-129	
1,1,2-Trichloroethane	ug/L	20	19.0	95	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	74-125	
1,1-Dichloroethane	ug/L	20	20.6	103	75-125	
1,1-Dichloroethene	ug/L	20	18.5	93	65-125	
1,1-Dichloropropene	ug/L	20	19.9	99	69-131	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

LABORATORY CONTROL SAMPLE	: 3667678	Spike	LCS	LCS	% Rec
Parameter	Units	Conc.	Result	% Rec	Limits Qualifie
1,2,3-Trichlorobenzene	ug/L		16.9		
1,2,3-Trichloropropane	ug/L	20	18.2	91	75-125
1,2,4-Trichlorobenzene	ug/L	20	17.7	88	67-131
1,2,4-Trimethylbenzene	ug/L	20	19.0	95	75-125
1,2-Dibromo-3-chloropropane	ug/L	50	42.9	86	65-128
1,2-Dibromoethane (EDB)	ug/L	20	18.7	94	75-125
1,2-Dichlorobenzene	ug/L	20	18.4	92	75-125
1,2-Dichloroethane	ug/L	20	19.3	96	74-125
1,2-Dichloropropane	ug/L	20	19.6	98	68-125
1,3,5-Trimethylbenzene	ug/L	20	18.2	91	75-125
1,3-Dichlorobenzene	_	20	18.3	91	75-125 75-125
	ug/L				
,3-Dichloropropane	ug/L	20	19.2	96	75-125
,4-Dichlorobenzene	ug/L	20	19.0	95	75-125
2,2-Dichloropropane	ug/L	20	19.0	95	70-133
2-Butanone (MEK)	ug/L	100	89.8	90	62-142
2-Chlorotoluene	ug/L	20	18.8	94	75-125
I-Chlorotoluene	ug/L	20	18.2	91	75-125
I-Methyl-2-pentanone (MIBK)	ug/L	100	99.5	99	75-125
Acetone	ug/L	100	92.4	92	47-150
Allyl chloride	ug/L	20	19.8	99	65-125
Benzene	ug/L	20	19.6	98	75-125
Bromobenzene	ug/L	20	18.3	92	75-125
Bromochloromethane	ug/L	20	19.6	98	75-125
Bromodichloromethane	ug/L	20	18.9	94	75-128
Bromoform	ug/L	20	18.5	92	75-125
Bromomethane	ug/L	20	17.7	89	43-150 6M
Carbon tetrachloride	ug/L	20	18.1	90	75-127
Chlorobenzene	ug/L	20	18.4	92	75-125
Chloroethane	ug/L	20	19.3	97	72-130
Chloroform	ug/L	20	18.3	92	75-125
Chloromethane	ug/L	20	16.0	80	55-128
cis-1,2-Dichloroethene	ug/L	20	20.3	102	75-125
cis-1,3-Dichloropropene	ug/L	20	19.7	98	74-132
Dibromochloromethane	ug/L	20	18.4	92	75-125
Dibromomethane	ug/L	20	19.0	95	71-137
Dichlorodifluoromethane	_	20	17.5	93 87	69-126
	ug/L				
Dichlorofluoromethane	ug/L	20	19.3	96	75-125
Diethyl ether (Ethyl ether)	ug/L	20	20.0	100	72-125
thylbenzene	ug/L	20	19.6	98	75-125
Hexachloro-1,3-butadiene	ug/L	20	17.3	87	74-129
sopropylbenzene (Cumene)	ug/L	20	19.8	99	75-125
n&p-Xylene	ug/L	40	39.7	99	74-125
Methyl-tert-butyl ether	ug/L	20	19.5	98	69-125
Methylene Chloride	ug/L	20	20.1	101	72-125
n-Butylbenzene	ug/L	20	19.8	99	75-128
n-Propylbenzene	ug/L	20	19.4	97	75-125
Naphthalene	ug/L	20	17.9	89	70-125

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

RATORY CONTROL SAMPLE:	3667678					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
ene	ug/L		19.8	99	75-125	
propyltoluene	ug/L	20	18.6	93	75-125	
utylbenzene	ug/L	20	19.3	96	75-127	
ne	ug/L	20	19.5	98	75-125	
utylbenzene	ug/L	20	18.5	93	75-125	
chloroethene	ug/L	20	18.3	91	74-125	
nydrofuran	ug/L	200	208	104	73-132	
ne	ug/L	20	18.8	94	75-125	
1,2-Dichloroethene	ug/L	20	19.1	95	69-125	
1,3-Dichloropropene	ug/L	20	18.9	94	69-130	
oroethene	ug/L	20	18.3	92	75-127	
orofluoromethane	ug/L	20	18.2	91	71-132	
chloride	ug/L	20	16.5	82	65-128	
e (Total)	ug/L	60	59.5	99	75-125	
ichloroethane-d4 (S)	%.			101	75-125	
mofluorobenzene (S)	%.			98	75-125	
ne-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SP	PIKE DUPL	ICATE: 3669	403		3669404							
			MS	MSD								
		10523948006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	17.8	17.2	89	86	71-128	3	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	19.1	18.7	95	93	75-144	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.0	17.1	85	86	63-125	0	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.3	17.8	92	89	75-125	3	30	
1,1,2- Trichlorotrifluoroethane	ug/L	ND	20	20	20.6	20.1	103	100	69-141	3	30	
1,1-Dichloroethane	ug/L	ND	20	20	20.2	19.5	101	97	68-125	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.2	18.5	96	93	62-135	4	30	
1,1-Dichloropropene	ug/L	ND	20	20	20.4	19.8	102	99	61-147	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	17.3	17.9	86	90	59-145	4	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	17.5	17.1	87	86	69-125	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	17.9	18.3	90	92	59-144	2	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	18.5	19.1	93	95	56-139	3	30	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	39.0	40.8	78	82	64-125	5	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.0	17.6	90	88	71-125	2	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	17.6	18.0	88	90	74-125	2	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.6	18.2	93	91	64-125	2	30	
1,2-Dichloropropane	ug/L	ND	20	20	18.9	18.2	95	91	63-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	18.0	18.6	90	93	63-132	3	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	18.1	18.2	90	91	74-125	1	30	
1,3-Dichloropropane	ug/L	ND	20	20	18.5	17.7	93	89	75-125	4	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	18.4	18.7	92	93	73-125	1	30	
2,2-Dichloropropane	ug/L	ND	20	20	18.9	18.3	94	92	64-145	3	30	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

MATRIX SPIKE & MATRIX S	PIKE DUPI	LICATE: 3669	9403		3669404							
			MS	MSD								
Parameter	Units	10523948006 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qu
2-Butanone (MEK)	ug/L	ND	100	100	79.5	79.9	80	80	39-125	1	30	
2-Chlorotoluene	ug/L	ND	20	20	18.1	18.6	91	93	68-128	3	30	
4-Chlorotoluene	ug/L	ND	20	20	17.8	18.0	89	90	71-128	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.1	92.5	90	93	65-125	3		
Acetone	ug/L	ND	100	100	71.0	68.0	68	65	32-133	4	30	
Allyl chloride	ug/L	ND	20	20	20.5	18.5	102	93	61-125	10	30	
Benzene	ug/L	ND	20	20	19.2	18.4	96	92	63-125	4	30	
Bromobenzene	ug/L	ND	20	20	17.8	17.5	89	88	75-125	1	30	
Bromochloromethane	ug/L	ND	20	20	19.3	18.5	96	92	67-125	4	30	
Bromodichloromethane	ug/L	ND	20	20	18.4	18.0	92	90	67-139	2	30	
Bromoform	ug/L	ND	20	20	17.8	17.7	89	88	75-125	1	30	
Bromomethane	ug/L	ND	20	20	14.6	14.9	73	74	50-150	2	30	6M
Carbon tetrachloride	ug/L	ND	20	20	18.7	18.1	94	91	70-148	3	30	
Chlorobenzene	ug/L	ND	20	20	18.1	17.5	90	87	75-125	3	30	
Chloroethane	ug/L	ND	20	20	21.7	19.8	109	99	62-142	9	30	
Chloroform	ug/L	ND	20	20	18.1	17.5	90	87	67-125	3	30	
Chloromethane	ug/L	ND	20	20	17.1	16.1	86	80	43-140	6	30	
is-1,2-Dichloroethene	ug/L	ND	20	20	20.1	19.1	101	95	64-134	5	30	
is-1,3-Dichloropropene	ug/L	ND	20	20	19.0	17.7	95	89	68-129	7	30	
Dibromochloromethane	ug/L	ND	20	20	17.5	17.0	87	85	71-137	3	30	
Dibromomethane	ug/L	ND	20	20	18.2	17.8	91	89	66-130	2	30	
Dichlorodifluoromethane	ug/L	ND	20	20	20.1	19.1	100	96	61-144	5	30	
Dichlorofluoromethane	ug/L	ND	20	20	20.5	19.6	102	98	68-125	4	30	
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	19.5	18.4	97	92	57-127	6		
Ethylbenzene	ug/L	ND	20	20	19.2	19.0	96	95	66-128	1	30	
lexachloro-1,3-butadiene	ug/L	ND	20	20	21.0	18.6	105	93	52-150	12		
sopropylbenzene Cumene)	ug/L	ND	20	20	19.3	19.8	97	99	73-138	2	30	
n&p-Xylene	ug/L	ND	40	40	38.7	38.1	97	95	62-133	1	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	18.4	92	92	60-125	1	30	
Methylene Chloride	ug/L	ND	20	20	19.2	18.3	96	91	59-125	5	30	
n-Butylbenzene	ug/L	ND	20	20	20.9	20.6	104	103	68-146	1	30	
-Propylbenzene	ug/L	ND	20	20	19.3	20.1	97	101	72-132	4	30	
Naphthalene	ug/L	ND	20	20	17.3	18.8	86	94	55-135	8	30	
-Xylene	ug/L	ND	20	20	18.9	19.1	95	95	66-128	1	30	
-Isopropyltoluene	ug/L	ND	20	20	19.2	19.5	96	98	69-139	2	30	
ec-Butylbenzene	ug/L	ND	20	20	19.7	20.0	98	100	69-149	2	30	
Styrene	ug/L	ND	20	20	19.0	18.4	95	92	75-126	3	30	
ert-Butylbenzene	ug/L	ND	20	20	18.6	19.4	93	97	67-147	4	30	
etrachloroethene	ug/L	ND	20	20	18.6	18.2	93	91	70-141	2	30	
etrahydrofuran	ug/L	ND	200	200	200	190	100	95	64-128	5	30	
oluene	ug/L	ND	20	20	18.6	17.8	93	89	64-125	4	30	
rans-1,2-Dichloroethene	ug/L	ND	20	20	19.7	18.3	98	91	62-135	7	30	
rans-1,3-Dichloropropene	ug/L	ND	20	20	18.4	17.6	92	88	69-125	4	30	
richloroethene	ug/L	ND	20	20	18.6	18.1	93	91	69-141	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





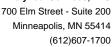
Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 3669	403 MS	MSD	3669404							
Б	11.2	10523948006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	0 1
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Trichlorofluoromethane	ug/L	ND	20	20	20.3	19.8	102	99	61-148	3	30	
Vinyl chloride	ug/L	ND	20	20	18.3	17.3	91	86	56-144	6	30	
Xylene (Total)	ug/L	ND	60	60	57.7	57.2	96	95	64-131	1	30	
1,2-Dichloroethane-d4 (S)	%.						99	101	75-125			
4-Bromofluorobenzene (S)	%.						98	99	75-125			
Toluene-d8 (S)	%.						97	96	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

QC Batch: 686473

QC Batch Method: EPA Mod. 3510C Analysis Method:

EPA 8270E by SIM

Analysis Description: Laboratory:

8270E Water 14 Dioxane by SIM

Pace Analytical Services - Minneapolis

10523948006 Associated Lab Samples:

METHOD BLANK: 3670888

Date: 07/17/2020 04:36 PM

Matrix: Water

Associated Lab Samples:

10523948006

Blank Reporting Parameter Limit Qualifiers Units Result Analyzed 1,4-Dioxane (SIM) ND 0.25 07/14/20 19:18 ug/L 1,4-Dioxane-d8 (S) 32 30-125 07/14/20 19:18 %.

LABORATORY CONTROL SAMPLE: 3670889

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S)	ug/L %.	10	11.3	113 37	32-128 30-125	

MATRIX SPIKE & MATRIX S	PIKE DUPL	ICATE: 3670	890		3670891							
			MS	MSD								
		10524992001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (SIM)	ug/L	0.25	10	10	12.2	13.0	120	128	32-130		30	
1,4-Dioxane-d8 (S)	%.						35	31	30-125			

MATRIX SPIKE & MATRIX S	SPIKE DUPLIC	CATE: 3670	892		3670893							
			MS	MSD								
	1	0524994001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (SIM)	ug/L	1.1	10	10	13.2	13.8	121	127	32-130	5	30	
1,4-Dioxane-d8 (S)	%.						19	17	30-125			1M

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **BATCH QUALIFIERS**

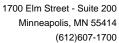
Batch: 685755

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

#### **ANALYTE QUALIFIERS**

Date: 07/17/2020 04:36 PM

1M	Surrogate recovery outside laboratory control limits due to emulsion.
2M	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. Analyte presence below reporting limits in associated samples. No impact to data.
ЗМ	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. The result may be biased high.
4M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. Instrument sensitivity verified with reporting limit check.
5M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. The result may be biased low.
6M	This analyte did not meet the secondary source verification criteria for the initial calibration. Analyte recovery exceeded the 130% upper control limit at 134%. Results may be biased high.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
S0	Surrogate recovery outside laboratory control limits.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10523948

Date: 07/17/2020 04:36 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523948001	SB-18 (2-4)	ASTM D2974	685779		
10523948002	SB-19 (8-10)	ASTM D2974	685779		
10523948003	SB-20 (1-3)	ASTM D2974	685779		
10523948004	SB-21 (3-5)	ASTM D2974	685779		
10523948005	SB-22 (2-4)	ASTM D2974	685779		
10523948007	SB-23 (2-4)	ASTM D2974	685779		
0523948006	Rinsate 070720	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10523948001	SB-18 (2-4)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948002	SB-19 (8-10)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948003	SB-20 (1-3)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948004	SB-21 (3-5)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948005	SB-22 (2-4)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948007	SB-23 (2-4)	EPA 5035/5030B	686036	EPA 8260D	687078
10523948008	MeOH Trip Blank	EPA 5035/5030B	686036	EPA 8260D	687078
10523948006	Rinsate 070720	EPA 8260D	685773		

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Face Analytical"

sction A		Section B	Section C	page:
uinb	formation:	Report To: 1	Involve Information: Attention:	
3	of HSS CLIMES	15/47	Company Name:	DECLINATION AGENCY
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ione	Fax: n/a	Project Name: 1. 14FC COLUMN	Pace Project Manager	Site Location 1 A N
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· j	3	PRINT Name of SAMPLER:	SAMPLER: VEIN J. SAWCO	
:	of 3	SIGNATURE of SAMPLER:	SAMPLER: (MM/DD/YY)	(C)
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# ace Analytical

# Document Name:

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020 Page 1 of 1

#### Pace Analytical Services -ENV-FRM-MIN4-0150 Rev.00 **Minneapolis** Sample Condition **Client Name:** Project #: WO#:10523948 **Upon Receipt** Due Date: 07/14/20 Courier: Ted Ex □USPS Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions **Tracking Number: Custody Seal on Cooler/Box Present?** Yes MO Seals Intact? Yes No Biological Tissue Frozen? Yes No A/A Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? Yes No ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Blue Type of Ice: None Did Samples Originate in West Virginia? ☐Yes ☐No Were All Container Temps Taken? ☐Yes □No ÆN/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **Average Corrected Temp** (no temp blank only): See Exceptions Correction Factor: True Cooler Temp Corrected w/temp blank: oС OC. ☐1 Container Date/Initials of Person Examining Contents: <u>PHC 7/7/2</u> USDA Regulated Soil: ( 'N/A, water sample Other:\_ Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Hawaii and Puerto Rico)? Yes No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Chain of Custody Present and Filled Out? **Z**Yes □No 1. Yes Chain of Custody Relinquished? □No 2. Yes Sampler Name and/or Signature on COC? □No □N/A 3. Samples Arrived within Hold Time? Wes □No 4. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ZN0 Short Hold Time Analysis (<72 hr)? □Yes ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other\_ **Rush Turn Around Time Requested?** □Yes **EN**o 6. Sufficient Volume? **Yes** □No 7. **V**Yes Correct Containers Used? ПNо 8. Yes -Pace Containers Used? 4 Yes Containers Intact? □No 9. Field Filtered Volume Received for Dissolved Tests? □Yes Пио Is sediment visible in the dissolved container? Yes No 11. If no, write ID/ Date/Time on Container Below: Is sufficient information available to reconcile the samples See Exception to the COC? Yes П □No Matrix: ☑Water ☑Soil ☐Oil ☐Other\_ All containers needing acid/base preservation have been 12. Sample # □Yes □No checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO<sub>3</sub> ∏H<sub>2</sub>SO<sub>4</sub> Zinc Acetate ☐ Yes □No compliance with EPA recommendation?

(HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception ☐ Yes Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. **⊿**Yes □No □N/A See Exception Headspace in VOA Vials (greater than 6mm)? Yes ØNo □N/A Trip Blank Present? **∠ye**s 14. □No □N/A Pace Trip Blank Lot # (if purchased): 060120 Trip Blank Custody Seals Present? □No □N/A

**CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time:

Comments/Resolution: **Project Manager Review:** Date:

7/8/2020 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

> Labeled by: \_\_\_\_\_CEG Page 38 of 38





July 16, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin Pace Project No.: 10524056

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 08, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Orsp

Project Manager

**Enclosures** 

cc: Aaron Benker, Wenck

Ben Holcomb, Wenck Associates Kelly Jaworski, Wenck Associates Inc







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929

CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01





# **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524056001	GP-49 (10-12)	Water	07/07/20 14:30	07/08/20 11:38
10524056002	GP-49 (17-20)	Water	07/07/20 15:40	07/08/20 11:38
10524056003	GP-49 (45-47)	Water	07/07/20 16:35	07/08/20 11:38
10524056004	GP-49 (57-59)	Water	07/07/20 17:05	07/08/20 11:38
10524056005	GP-49 (73-75)	Water	07/07/20 07:20	07/08/20 11:38
10524056006	Trip Blank	Water	07/07/20 00:00	07/08/20 11:38



# **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10524056001	GP-49 (10-12)	EPA 6010D	DCF	1
		EPA 8270E by SIM	ZT	2
		EPA 8260D	AEZ	72
10524056002	GP-49 (17-20)	EPA 6010D	DCF	1
		EPA 8270E by SIM	ZT	2
		EPA 8260D	AEZ	72
10524056003	GP-49 (45-47)	EPA 6010D	DCF	1
		EPA 8270E by SIM	ZT	2
		EPA 8260D	AEZ	72
0524056004	GP-49 (57-59)	EPA 6010D	DCF	1
		EPA 8270E by SIM	ZT	2
		EPA 8260D	AEZ	72
10524056005	GP-49 (73-75)	EPA 6010D	DCF	1
		EPA 8270E by SIM	ZT	2
		EPA 8260D	AEZ	72
10524056006	Trip Blank	EPA 8260D	AEZ	72

PASI-M = Pace Analytical Services - Minneapolis



Date: 07/16/2020 05:23 PM

# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Sample: GP-49 (10-12)	Lab ID: 10	524056001	Collected: 07/07/2	0 14:30	Received: 07	/08/20 11:38 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Me		010D Preparation Me - Minneapolis	thod: E	PA 3010A			
Lead, Dissolved	ND	ug/L	10.0	1	07/10/20 05:49	07/10/20 13:38	7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical Me Pace Analytic		270E by SIM Prepara - Minneapolis	tion Me	ethod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.28	1	07/08/20 18:12	07/12/20 22:33	123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	45	%.	30-125	1	07/08/20 18:12	07/12/20 22:33		
3260D VOC	Analytical Me							
Acetone	ND	ug/L	20.0	1		07/14/20 00:46	67-64-1	
Allyl chloride	ND ND	ug/L	4.0	1		07/14/20 00:46		
Benzene	ND ND	ug/L ug/L	1.0	1		07/14/20 00:46		
Bromobenzene	ND ND	•	1.0	1		07/14/20 00:46		
Bromochloromethane		ug/L						
	ND	ug/L	1.0	1		07/14/20 00:46		
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 00:46		48416
Bromoform	ND	ug/L	4.0	1		07/14/20 00:46		4M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 00:46		
2-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 00:46		
-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:46		
sec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:46		
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:46		
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 00:46	56-23-5	4M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46	108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 00:46	75-00-3	2M
Chloroform	ND	ug/L	1.0	1		07/14/20 00:46	67-66-3	
Chloromethane	ND	ug/L	4.0	1		07/14/20 00:46	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:46	95-49-8	
I-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:46	106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 00:46	96-12-8	4M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 00:46	124-48-1	4M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 00:46	106-93-4	
Dibromomethane	ND	ug/L	4.0	1		07/14/20 00:46	74-95-3	
I,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46		
I,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46		
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46		
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 00:46		
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 00:46		
1,2-Dichloroethane	ND ND	ug/L	1.0	1		07/14/20 00:46		
1.1-Dichloroethene	ND ND	ug/L ug/L	1.0	1		07/14/20 00:46		
cis-1,2-Dichloroethene	ND ND	ug/L ug/L	1.0	1		07/14/20 00:46		
rans-1,2-Dichloroethene	ND ND	•		1		07/14/20 00:46		
Dichlorofluoromethane		ug/L	1.0	1				
	ND	ug/L	1.0			07/14/20 00:46		
I,2-Dichloropropane I,3-Dichloropropane	ND ND	ug/L ug/L	4.0	1 1		07/14/20 00:46		
		110/1	1.0	1		07/14/20 00:46	1/17_78_G	

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: GP-49 (10-12)	Lab ID: 105	24056001	Collected: 07/07/2	20 14:30	Received: 0	7/08/20 11:38 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 00:46	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 00:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 00:46	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 00:46	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 00:46	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 00:46	87-68-3	4M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 00:46	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 00:46	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 00:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 00:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 00:46	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 00:46		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 00:46	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 00:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:46		4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:46		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 00:46		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 00:46	109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 00:46		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46		4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:46		4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:46		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:46		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 00:46		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 00:46		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 00:46		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 00:46		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:46		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:46		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 00:46		
Kylene (Total)	ND	ug/L	3.0	1		07/14/20 00:46		
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 00:46		
o-Xylene	ND	ug/L	1.0	1		07/14/20 00:46		
Surrogates	.,,,	39, <b>-</b>	1.0	•		3.7.1.20 00.40		
1,2-Dichloroethane-d4 (S)	102	%.	75-125	1		07/14/20 00:46	17060-07-0	
Foluene-d8 (S)	93	%.	75-125	1		07/14/20 00:46		
4-Bromofluorobenzene (S)	98	%.	75-125	1		07/14/20 00:46		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/16/2020 05:23 PM

Sample: GP-49 (17-20)	Lab ID: 105	24056002	Collected: 07/07/2	0 15:40	Received: 07	7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Met	nod: EPA 60	010D Preparation Me	thod: El	PA 3010A			
	Pace Analytica	al Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/10/20 05:49	07/10/20 13:53	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Metl Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.25	1	07/13/20 15:24	07/14/20 20:20	0 123-91-1	
1,4-Dioxane-d8 (S)	34	%.	30-125	1	07/13/20 15:24	07/14/20 20:20	0	
3260D VOC	Analytical Metl	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
Acetone	ND		•	1		07/14/20 01:0	2 67 64 4	
Acetone Allyl chloride	ND ND	ug/L ug/L	20.0 4.0	1 1		07/14/20 01:03 07/14/20 01:03		
Benzene	ND ND	-	1.0	1		07/14/20 01:0		
Bromobenzene	ND ND	ug/L ug/L	1.0	1		07/14/20 01:0	-	
Bromochloromethane	ND ND	ug/L ug/L	1.0	1		07/14/20 01:03		
Bromodichloromethane	ND ND	ug/L ug/L	1.0	1		07/14/20 01:03		
Bromoform	ND ND	ug/L	4.0	1		07/14/20 01:03		4M,L2
Bromomethane	ND ND	ug/L	4.0	1		07/14/20 01:03		41VI, LZ
2-Butanone (MEK)	ND ND	ug/L	5.0	1		07/14/20 01:03		
n-Butylbenzene	ND ND	ug/L	1.0	1		07/14/20 01:03		
sec-Butylbenzene	ND ND	ug/L	1.0	1		07/14/20 01:03		
ert-Butylbenzene	ND ND	ug/L	1.0	1		07/14/20 01:03		
Carbon tetrachloride	ND ND	ug/L	1.0	1		07/14/20 01:03		4M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 01:00		-1VI, LZ
Chloroethane	ND	ug/L	1.0	1		07/14/20 01:00		2M
Chloroform	ND	ug/L	1.0	1		07/14/20 01:00		2101
Chloromethane	ND	ug/L	4.0	1		07/14/20 01:03		
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:03		
1-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:03		
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 01:03		4M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 01:03		4M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 01:03		
Dibromomethane	ND	ug/L	4.0	1		07/14/20 01:03	3 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:03		
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:03	3 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:03	3 106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 01:03	3 75-71-8	
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:03	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:03	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:03	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:03	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:03	3 156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:03	3 75-43-4	
1,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:03	3 78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 01:03	3 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:03	3 594-20-7	



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: GP-49 (17-20)	Lab ID: 105	24056002	Collected: 07/07/2	0 15:40	Received: 0	)7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 01:03	3 563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:03	3 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:03	3 10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 01:03	8 60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 01:03	3 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 01:03	87-68-3	4M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 01:03	8 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 01:03	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 01:03	3 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 01:03		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 01:03		
Naphthalene	ND	ug/L	4.0	1		07/14/20 01:03		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 01:03	3 103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 01:03	3 100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:03		4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:03		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 01:03		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 01:03	3 109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 01:03		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:03		4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:03		4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:03		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:03		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 01:03		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:03		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 01:03		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 01:03		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:03		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:03		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 01:03		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 01:03		
m&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		07/14/20 01:03		
Surrogates	110	<i>49,</i> ∟	1.0	•		01711720 01.00		
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		07/14/20 01:03	3 17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		07/14/20 01:03		
4-Bromofluorobenzene (S)	99	%.	75-125	1		07/14/20 01:03		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/16/2020 05:23 PM

Sample: GP-49 (45-47)	Lab ID: 105	24056003	Collected: 07/07/2	0 16:35	Received: 07	7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	I Services -	- Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/10/20 05:49	07/10/20 13:55	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara - Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.26	1	07/08/20 18:12	07/12/20 23:14	123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	43	%.	30-125	1	07/08/20 18:12	07/12/20 23:14	1	
3260D VOC	Analytical Meth	nnd: EPA 83	2600					
,200D VOC	Pace Analytica							
•	•		·			07/4 //00 = :		
Acetone	ND	ug/L	20.0	1		07/14/20 01:20		
Allyl chloride	ND	ug/L	4.0	1		07/14/20 01:20		
Benzene	ND	ug/L	1.0	1		07/14/20 01:20		
Bromobenzene	ND	ug/L	1.0	1		07/14/20 01:20	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 01:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 01:20	75-27-4	
Bromoform	ND	ug/L	4.0	1		07/14/20 01:20	75-25-2	4M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 01:20	74-83-9	
-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 01:20	78-93-3	
-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:20	104-51-8	
ec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:20	135-98-8	
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:20	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 01:20	56-23-5	4M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		,
Chloroethane	ND	ug/L	1.0	1		07/14/20 01:20		2M
Chloroform	ND	ug/L	1.0	1		07/14/20 01:20		
Chloromethane	ND	ug/L	4.0	1		07/14/20 01:20		
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:20		
	ND ND	•		1				
4-Chlorotoluene		ug/L	1.0			07/14/20 01:20		484
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 01:20		4M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 01:20		4M
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 01:20		
Dibromomethane	ND	ug/L	4.0	1		07/14/20 01:20		
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 01:20		
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:20		
,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:20		
,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:20		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:20		
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:20	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:20	75-43-4	
1,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:20	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 01:20		
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:20		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: GP-49 (45-47)	Lab ID: 105	24056003	Collected: 07/07/2	20 16:35	Received: 0	)7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 01:20	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:20	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 01:20	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 01:20	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 01:20	87-68-3	4M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 01:20	98-82-8	
p-lsopropyltoluene	ND	ug/L	1.0	1		07/14/20 01:20	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 01:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 01:20		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 01:20	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 01:20		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 01:20	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 01:20		
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:20		4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:20		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 01:20		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 01:20		
Toluene	ND	ug/L	1.0	1		07/14/20 01:20		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:20		4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:20		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:20		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 01:20		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:20		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 01:20		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 01:20		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:20		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:20		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 01:20		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 01:20		
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 01:20		
o-Xylene	ND	ug/L	1.0	1		07/14/20 01:20		
Surrogates	110	49, L	1.0	•		01711720 01.20	. 30 11 0	
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		07/14/20 01:20	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		07/14/20 01:20		
4-Bromofluorobenzene (S)	101	%.	75-125	1		07/14/20 01:20		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/16/2020 05:23 PM

Sample: GP-49 (57-59)	Lab ID: 105	24056004	Collected: 07/07/2	0 17:05	Received: 07	7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	I Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/10/20 05:49	07/10/20 13:5	6 7439-92-1	
8270E MSSV 14 Dioxane By SIM	-		270E by SIM Prepara	ation Me	thod: EPA Mod. 3	3510C		
	Pace Analytica	il Services -	Minneapolis					
1,4-Dioxane (SIM)	ND	ug/L	0.28	1	07/08/20 18:12	07/12/20 23:3	5 123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	44	%.	30-125	1	07/08/20 18:12	07/12/20 23:3	5	
` ,				•	07700720 10.12	017 12720 20.0	O	
3260D VOC	Analytical Meth							
	Pace Analytica	I Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/14/20 01:3	7 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/14/20 01:3	7 107-05-1	
Benzene	ND	ug/L	1.0	1		07/14/20 01:3	7 71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 01:3	7 74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 01:3	7 75-27-4	
Bromoform	ND	ug/L	4.0	1		07/14/20 01:3	7 75-25-2	4M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 01:3	7 74-83-9	
P-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 01:3	7 78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 135-98-8	
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 01:3	7 56-23-5	4M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 01:3	7 75-00-3	2M
Chloroform	ND	ug/L	1.0	1		07/14/20 01:3	7 67-66-3	
Chloromethane	ND	ug/L	4.0	1		07/14/20 01:3	7 74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:3	7 95-49-8	
1-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:3	7 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 01:3	7 96-12-8	4M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 01:3	7 124-48-1	4M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 01:3	7 106-93-4	
Dibromomethane	ND	ug/L	4.0	1		07/14/20 01:3	7 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:3	7 106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 01:3	7 75-71-8	
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:3	7 75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:3	7 107-06-2	
,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:3	7 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:3	7 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:3	7 156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:3	7 75-43-4	
,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:3	7 78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 01:3	7 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:3	7 594-20-7	



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: GP-49 (57-59)	Lab ID: 105	24056004	Collected: 07/07/2	20 17:05	Received: 0	7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 01:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:37	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 01:37	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 01:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 01:37	87-68-3	4M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 01:37	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 01:37	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 01:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 01:37		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 01:37	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 01:37	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 01:37	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 01:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:37		4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:37		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 01:37		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 01:37		
Toluene	ND	ug/L	1.0	1		07/14/20 01:37		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:37		4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:37		4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:37		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:37		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 01:37		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:37		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 01:37		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 01:37		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:37		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:37		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 01:37		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 01:37		
n&p-Xylene	ND	ug/L	2.0	1		07/14/20 01:37		
o-Xylene	ND	ug/L	1.0	1		07/14/20 01:37		
Surrogates	110	<i>49,</i> ∟	1.0	•		01711720 01.07	30 11 0	
1,2-Dichloroethane-d4 (S)	101	%.	75-125	1		07/14/20 01:37	17060-07-0	
Toluene-d8 (S)	92	%.	75-125	1		07/14/20 01:37		
4-Bromofluorobenzene (S)	99	%.	75-125	1		07/14/20 01:37		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Date: 07/16/2020 05:23 PM

Sample: GP-49 (73-75)	Lab ID: 105	24056005	Collected: 07/07/2	20 07:20	Received: 07	7/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/10/20 05:49	07/10/20 13:58	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.28	1	07/08/20 18:12	07/12/20 23:56	123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	38	%.	30-125	1	07/08/20 18:12	07/12/20 23:56	3	
3260D VOC	Analytical Meth	nod: FPA 82	260D					
2002 100	Pace Analytica							
Acatona	•		·	4		07/44/20 04:5	1 67 64 4	
Acetone	ND	ug/L	20.0	1		07/14/20 01:54		
Allyl chloride	ND	ug/L	4.0	1		07/14/20 01:54		
Benzene	ND	ug/L	1.0	1		07/14/20 01:54	_	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 01:54		
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 01:54		
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 01:54		
Bromoform	ND	ug/L	4.0	1		07/14/20 01:54		4M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 01:54		
P-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 01:54	78-93-3	
-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:54	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:54	135-98-8	
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 01:54	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 01:54	56-23-5	4M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 01:54	108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 01:54	75-00-3	2M
Chloroform	ND	ug/L	1.0	1		07/14/20 01:54	67-66-3	
Chloromethane	ND	ug/L	4.0	1		07/14/20 01:54	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:54		
1-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 01:54		
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 01:54		4M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 01:54		4M
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 01:54		
Dibromomethane	ND	ug/L	4.0	1		07/14/20 01:54		
,2-Dichlorobenzene	ND ND	-	1.0	1		07/14/20 01:54		
		ug/L		•				
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:54		
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:54		
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 01:54		
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:54		
,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 01:54		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:54		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:54		
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 01:54		
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:54		
,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:54		
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 01:54		
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 01:54	594-20-7	



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: GP-49 (73-75)	Lab ID: 105	24056005	Collected: 07/07/2	0 07:20	Received: 0	7/08/20 11:38 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 01:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 01:54	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 01:54	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 01:54	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 01:54	87-68-3	4M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 01:54	98-82-8	
p-lsopropyltoluene	ND	ug/L	1.0	1		07/14/20 01:54	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 01:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 01:54		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 01:54	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 01:54		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 01:54	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 01:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:54		4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 01:54		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 01:54		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 01:54	109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 01:54		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:54		4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 01:54		4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:54		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 01:54		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 01:54		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 01:54		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 01:54		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 01:54		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:54		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 01:54		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 01:54		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 01:54		
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 01:54		
o-Xylene	ND	ug/L	1.0	1		07/14/20 01:54		
Surrogates	110	<i>49,</i> ∟	1.0	•		3771 720 01.07	30 11 0	
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		07/14/20 01:54	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		07/14/20 01:54		
4-Bromofluorobenzene (S)	98	%.	75-125	1		07/14/20 01:54		



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: Trip Blank	Lab ID: 105	24056006	Collected: 07/07/2	20 00:00	Received:	07/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/13/20 23:0	4 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/13/20 23:0		
Benzene	ND	ug/L	1.0	1		07/13/20 23:0		
Bromobenzene	ND	ug/L	1.0	1		07/13/20 23:0		
Bromochloromethane	ND	ug/L	1.0	1		07/13/20 23:0		
Bromodichloromethane	ND	ug/L	1.0	1		07/13/20 23:0		
Bromoform	ND	ug/L	4.0	1		07/13/20 23:0		4M,L2
Bromomethane	ND	ug/L	4.0	1		07/13/20 23:0		,
2-Butanone (MEK)	ND	ug/L	5.0	1		07/13/20 23:0		
n-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:0		
sec-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:0		
ert-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/13/20 23:0		4M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/13/20 23:0		,
Chloroethane	ND	ug/L	1.0	1		07/13/20 23:0		2M
Chloroform	ND	ug/L	1.0	1		07/13/20 23:0		
Chloromethane	ND	ug/L	4.0	1		07/13/20 23:0		
-Chlorotoluene	ND	ug/L	1.0	1		07/13/20 23:0		
-Chlorotoluene	ND	ug/L	1.0	1		07/13/20 23:0		
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/13/20 23:0		4M
Dibromochloromethane	ND	ug/L	1.0	1		07/13/20 23:0		4M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/13/20 23:0		7101
Dibromomethane	ND	ug/L	4.0	1		07/13/20 23:0		
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:0		
,3-Dichlorobenzene	ND ND	ug/L ug/L	1.0	1		07/13/20 23:0		
,,3-Dichlorobenzene	ND ND	ug/L ug/L	1.0	1		07/13/20 23:0		
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0	1		07/13/20 23:0		
1,1-Dichloroethane	ND ND	ug/L ug/L	1.0	1		07/13/20 23:0		
1,2-Dichloroethane	ND ND	ug/L ug/L	1.0	1		07/13/20 23:0		
,1-Dichloroethene	ND ND		1.0	1		07/13/20 23:0		
		ug/L		1		07/13/20 23:0		
cis-1,2-Dichloroethene rans-1,2-Dichloroethene	ND ND	ug/L	1.0 1.0	1		07/13/20 23:0		
Dichlorofluoromethane		ug/L		1		07/13/20 23:0		
	ND ND	ug/L	1.0 4.0					
,2-Dichloropropane		ug/L		1		07/13/20 23:0		
,3-Dichloropropane	ND	ug/L	1.0	1		07/13/20 23:0		
2,2-Dichloropropane	ND	ug/L	4.0	1		07/13/20 23:0		
,1-Dichloropropene	ND	ug/L	1.0	1		07/13/20 23:0		
sis-1,3-Dichloropropene	ND	ug/L	4.0	1			4 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	4.0	1			4 10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/13/20 23:0		
Ethylbenzene	ND	ug/L	1.0	1		07/13/20 23:0		48.
lexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/13/20 23:0		4M
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/13/20 23:0		
o-Isopropyltoluene	ND	ug/L	1.0	1		07/13/20 23:0		
Methylene Chloride	ND	ug/L	4.0	1		07/13/20 23:0		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/13/20 23:0	4 108-10-1	



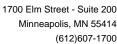
# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Sample: Trip Blank	Lab ID: 105	24056006	Collected: 07/07/2	20 00:00	Received: 07/08/20 11:38	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyze	d CAS No.	Qual
8260D VOC	Analytical Meth	nod: EPA 82	260D				
	Pace Analytica	l Services -	Minneapolis				
Methyl-tert-butyl ether	ND	ug/L	1.0	1	07/13/20 23	:04 1634-04-4	
Naphthalene	ND	ug/L	4.0	1	07/13/20 23	:04 91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1	07/13/20 23	:04 103-65-1	
Styrene	ND	ug/L	1.0	1	07/13/20 23	:04 100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1	07/13/20 23	:04 630-20-6	4M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	07/13/20 23	:04 79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1	07/13/20 23	:04 127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1	07/13/20 23	:04 109-99-9	
Toluene	ND	ug/L	1.0	1	07/13/20 23	:04 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	07/13/20 23	:04 87-61-6	4M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	07/13/20 23	:04 120-82-1	4M
1,1,1-Trichloroethane	ND	ug/L	1.0	1	07/13/20 23	:04 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1	07/13/20 23	:04 79-00-5	
Trichloroethene	ND	ug/L	0.40	1	07/13/20 23	:04 79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1	07/13/20 23	:04 75-69-4	
1,2,3-Trichloropropane	ND	ug/L	4.0	1	07/13/20 23	:04 96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1	07/13/20 23	:04 76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1	07/13/20 23	:04 95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1	07/13/20 23	:04 108-67-8	
Vinyl chloride	ND	ug/L	0.20	1	07/13/20 23	:04 75-01-4	
Xylene (Total)	ND	ug/L	3.0	1	07/13/20 23	:04 1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1	07/13/20 23	:04 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	07/13/20 23	:04 95-47-6	
Surrogates							
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1	07/13/20 23	:04 17060-07-0	
Toluene-d8 (S)	93	%.	75-125	1		:04 2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1	07/13/20 23	:04 460-00-4	





Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

QC Batch: 685809 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524056001, 10524056002, 10524056003, 10524056004, 10524056005

METHOD BLANK: 3667837 Matrix: Water

Associated Lab Samples: 10524056001, 10524056002, 10524056003, 10524056004, 10524056005

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/10/20 13:33

LABORATORY CONTROL SAMPLE: 3667839

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units ug/L Lead, Dissolved 1000 971 97 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3667840 3667841

MS MSD

10524056001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result **RPD** RPD Qual Result % Rec % Rec Limits Lead, Dissolved ND ug/L 1000 1000 982 973 98 97 75-125 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

QC Batch: 686485 Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D Analysis Description: 8260D MSV 465 W

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524056001, 10524056002, 10524056003, 10524056004, 10524056005, 10524056006

METHOD BLANK: 3670942 Matrix: Water

Associated Lab Samples: 10524056001, 10524056002, 10524056003, 10524056004, 10524056005, 10524056006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	07/13/20 22:47	4M
1,1,1-Trichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloropropene	ug/L	ND	1.0	07/13/20 22:47	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	4M
1,2,3-Trichloropropane	ug/L	ND	4.0	07/13/20 22:47	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	4M
1,2,4-Trimethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	07/13/20 22:47	4M
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichloropropane	ug/L	ND	4.0	07/13/20 22:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
1,3-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
1,3-Dichloropropane	ug/L	ND	1.0	07/13/20 22:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
2,2-Dichloropropane	ug/L	ND	4.0	07/13/20 22:47	
2-Butanone (MEK)	ug/L	ND	5.0	07/13/20 22:47	
2-Chlorotoluene	ug/L	ND	1.0	07/13/20 22:47	
4-Chlorotoluene	ug/L	ND	1.0	07/13/20 22:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	07/13/20 22:47	
Acetone	ug/L	ND	20.0	07/13/20 22:47	
Allyl chloride	ug/L	ND	4.0	07/13/20 22:47	
Benzene	ug/L	ND	1.0	07/13/20 22:47	
Bromobenzene	ug/L	ND	1.0	07/13/20 22:47	
Bromochloromethane	ug/L	ND	1.0	07/13/20 22:47	
Bromodichloromethane	ug/L	ND	1.0	07/13/20 22:47	
Bromoform	ug/L	ND	4.0	07/13/20 22:47	4M
Bromomethane	ug/L	ND	4.0	07/13/20 22:47	
Carbon tetrachloride	ug/L	ND	1.0	07/13/20 22:47	4M
Chlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
Chloroethane	ug/L	ND	1.0	07/13/20 22:47	2M
Chloroform	ug/L	ND	1.0	07/13/20 22:47	
Chloromethane	ug/L	ND	4.0	07/13/20 22:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

METHOD BLANK: 3670942 Matrix: Water

Associated Lab Samples: 10524056001, 10524056002, 10524056003, 10524056004, 10524056005, 10524056006

Demonstra	L be tre	Blank	Reporting	A b d	O !'
Parameter	Units	Result	Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	4.0	07/13/20 22:47	
Dibromochloromethane	ug/L	ND	1.0	07/13/20 22:47	4M
Dibromomethane	ug/L	ND	4.0	07/13/20 22:47	
Dichlorodifluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Dichlorofluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	07/13/20 22:47	
Ethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	07/13/20 22:47	4M
sopropylbenzene (Cumene)	ug/L	ND	1.0	07/13/20 22:47	
m&p-Xylene	ug/L	ND	2.0	07/13/20 22:47	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/13/20 22:47	
Methylene Chloride	ug/L	ND	4.0	07/13/20 22:47	
n-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
n-Propylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Naphthalene	ug/L	ND	4.0	07/13/20 22:47	
o-Xylene	ug/L	ND	1.0	07/13/20 22:47	
o-Isopropyltoluene	ug/L	ND	1.0	07/13/20 22:47	
sec-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Styrene	ug/L	ND	1.0	07/13/20 22:47	
ert-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Tetrachloroethene	ug/L	ND	1.0	07/13/20 22:47	
Tetrahydrofuran	ug/L	ND	10.0	07/13/20 22:47	
Toluene	ug/L	ND	1.0	07/13/20 22:47	
rans-1,2-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	
rans-1,3-Dichloropropene	ug/L	ND	4.0	07/13/20 22:47	
Trichloroethene	ug/L	ND	0.40	07/13/20 22:47	
Trichlorofluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Vinyl chloride	ug/L	ND	0.20	07/13/20 22:47	
Xylene (Total)	ug/L	ND	3.0	07/13/20 22:47	
1,2-Dichloroethane-d4 (S)	%.	98	75-125	07/13/20 22:47	
4-Bromofluorobenzene (S)	%.	99	75-125	07/13/20 22:47	
Toluene-d8 (S)	%.	94	75-125	07/13/20 22:47	

LABORATORY CONTROL SAMPLE:	3670943					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L		15.7	78	75-128	5M
1,1,1-Trichloroethane	ug/L	20	17.7	89	75-128	
1,1,2,2-Tetrachloroethane	ug/L	20	17.3	86	69-129	
1,1,2-Trichloroethane	ug/L	20	19.0	95	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.9	95	74-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	
1,1-Dichloroethene	ug/L	20	18.8	94	65-125	
1,1-Dichloropropene	ug/L	20	19.6	98	69-131	

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

LABORATORY CONTROL SAMPLE	:: 3670943	Spike	LCS	LCS	% Rec
Parameter	Units	Conc.	Result	% Rec	Limits Qualifiers
1,2,3-Trichlorobenzene	ug/L		15.3	77	75-125 5M
1,2,3-Trichloropropane	ug/L	20	17.5	87	75-125
1,2,4-Trichlorobenzene	ug/L	20	15.8	79	67-131 5M
1,2,4-Trimethylbenzene	ug/L	20	17.2	86	75-125
1,2-Dibromo-3-chloropropane	ug/L	50	35.4	71	65-128 5M
1,2-Dibromoethane (EDB)	ug/L	20	18.3	91	75-125
1,2-Dichlorobenzene	ug/L	20	17.2	86	75-125
1,2-Dichloroethane	ug/L	20	19.8	99	74-125
1,2-Dichloropropane	ug/L	20	19.2	96	68-125
1,3,5-Trimethylbenzene	ug/L	20	16.6	83	75-125
1,3-Dichlorobenzene	ug/L	20	16.4	82	75-125
1,3-Dichloropropane	ug/L	20	18.7	94	75-125
1,4-Dichlorobenzene	ug/L	20	17.6	88	75-125
2,2-Dichloropropane	ug/L	20	16.3	81	70-133
2-Butanone (MEK)	ug/L	100	10.3	108	62-142
2-Chlorotoluene	ug/L	20	17.3	87	75-125
4-Chlorotoluene	ug/L	20	16.8	84	75-125 75-125
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.0	98	75-125 75-125
Acetone	ug/L ug/L	100	116	116	47-150
Allyl chloride	-	20	19.2	96	65-125
•	ug/L				
Benzene	ug/L	20	19.8	99	75-125
Bromobenzene	ug/L	20	17.0	85	75-125
Bromochloromethane	ug/L	20	20.1	100	75-125
Bromodichloromethane	ug/L	20	17.1	85	75-128
Bromoform	ug/L	20	13.8	69	75-125 5M,L2
Bromomethane	ug/L	20	19.2	96	43-150
Carbon tetrachloride	ug/L	20	14.8	74	75-127 5M,L2
Chlorobenzene	ug/L	20	17.2	86	75-125
Chloroethane	ug/L	20	27.2	136	72-130 3M,L3
Chloroform	ug/L	20	18.4	92	75-125
Chloromethane	ug/L	20	20.2	101	55-128
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125
cis-1,3-Dichloropropene	ug/L	20	18.1	91	74-132
Dibromochloromethane	ug/L	20	15.2	76	75-125 5M
Dibromomethane	ug/L	20	18.3	91	71-137
Dichlorodifluoromethane	ug/L	20	22.0	110	69-126
Dichlorofluoromethane	ug/L	20	22.5	112	75-125
Diethyl ether (Ethyl ether)	ug/L	20	20.7	104	72-125
Ethylbenzene	ug/L	20	18.4	92	75-125
Hexachloro-1,3-butadiene	ug/L	20	14.7	74	74-129 5M
Isopropylbenzene (Cumene)	ug/L	20	18.2	91	75-125
m&p-Xylene	ug/L	40	36.1	90	74-125
Methyl-tert-butyl ether	ug/L	20	20.2	101	69-125
Methylene Chloride	ug/L	20	21.0	105	72-125
n-Butylbenzene	ug/L	20	17.4	87	75-128
n-Propylbenzene	ug/L	20	17.8	89	75-125
Naphthalene	ug/L	20	16.0	80	70-125

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Kylene	ug/L		18.3	91	75-125	
sopropyltoluene	ug/L	20	16.6	83	75-125	
c-Butylbenzene	ug/L	20	17.1	85	75-127	
rene	ug/L	20	18.4	92	75-125	
t-Butylbenzene	ug/L	20	17.0	85	75-125	
trachloroethene	ug/L	20	16.5	82	74-125	
trahydrofuran	ug/L	200	210	105	73-132	
uene	ug/L	20	17.5	87	75-125	
ns-1,2-Dichloroethene	ug/L	20	19.2	96	69-125	
ns-1,3-Dichloropropene	ug/L	20	17.1	85	69-130	
chloroethene	ug/L	20	18.1	91	75-127	
chlorofluoromethane	ug/L	20	21.5	108	71-132	
yl chloride	ug/L	20	20.0	100	65-128	
lene (Total)	ug/L	60	54.4	91	75-125	
2-Dichloroethane-d4 (S)	%.			102	75-125	
Bromofluorobenzene (S)	%.			97	75-125	
uene-d8 (S)	%.			94	75-125	

MATRIX SPIKE & MATRIX SF	PIKE DUPL	ICATE: 3670	944		3670945							
			MS	MSD								
		10524484004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	17.1	16.8	85	84	71-128	2	30	5M
1,1,1-Trichloroethane	ug/L	ND	20	20	20.8	20.2	104	101	75-144	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	17.4	91	87	63-125	4	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.9	19.2	99	96	75-125	3	30	
1,1,2- Trichlorotrifluoroethane	ug/L	ND	20	20	22.8	21.2	114	106	69-141	7	30	
1,1-Dichloroethane	ug/L	ND	20	20	23.4	22.8	117	114	68-125	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	21.8	20.8	109	104	62-135	5	30	
1,1-Dichloropropene	ug/L	ND	20	20	22.4	21.5	112	108	61-147	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	14.9	14.3	75	71	59-145	4	30	5M
1,2,3-Trichloropropane	ug/L	ND	20	20	18.2	17.7	91	88	69-125	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	15.7	14.8	78	74	59-144	6	30	5M
1,2,4-Trimethylbenzene	ug/L	ND	20	20	18.5	17.2	92	86	56-139	7	30	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	38.3	37.6	77	75	64-125	2	30	5M
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.4	18.3	92	91	71-125	1	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	18.1	16.7	90	84	74-125	8	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.5	20.1	103	100	64-125	2	30	
1,2-Dichloropropane	ug/L	ND	20	20	21.1	20.3	105	102	63-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	18.0	16.6	90	83	63-132	8	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	18.0	16.6	90	83	74-125	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	19.2	19.0	96	95	75-125	1	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	18.5	17.1	93	86	73-125	8	30	
2,2-Dichloropropane	ug/L	ND	20	20	18.6	18.2	93	91	64-145	2	30	

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# **REPORT OF LABORATORY ANALYSIS**

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Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

MATRIX SPIKE & MATRIX SF	PIKE DUPI	LICATE: 3670			3670945	i						
			MS	MSD								
Parameter	Units	10524484004 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
2-Butanone (MEK)	ug/L	ND	100	100	89.2	90.8	89	91	39-125	2	30	
2-Chlorotoluene	ug/L	ND	20	20	19.0	17.6	95	88	68-128	8		
4-Chlorotoluene	ug/L	ND	20	20	18.2	16.9	91	84	71-128	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.7	95.5	97	95	65-125	1		
Acetone	ug/L	ND	100	100	77.3	74.5	76	74	32-133	4	30	
Allyl chloride	ug/L	ND	20	20	21.4	21.4	107	107	61-125	0	30	
Benzene	ug/L	ND	20	20	21.8	21.2	109	106	63-125	3	30	
Bromobenzene	ug/L	ND	20	20	18.4	17.3	92	87	75-125	6	30	
Bromochloromethane	ug/L	ND	20	20	20.7	20.7	103	104	67-125	0	30	
Bromodichloromethane	ug/L	ND	20	20	19.1	18.6	96	93	67-139	3	30	
Bromoform	ug/L	ND	20	20	14.9	15.4	75	77	75-125	3	30	5M
Bromomethane	ug/L	ND	20	20	19.5	20.8	98	104	50-150	7	30	
Carbon tetrachloride	ug/L	ND	20	20	18.0	17.8	90	89	70-148	1	30	5M
Chlorobenzene	ug/L	ND	20	20	18.6	18.2	93	91	75-125	2	30	
Chloroethane	ug/L	ND	20	20	30.5	27.7	153	138	62-142	10	30	3M, N
Chloroform	ug/L	ND	20	20	20.1	19.3	100	97	67-125	4		- ,
Chloromethane	ug/L	ND	20	20	21.7	21.0	109	105	43-140	4	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.2	21.5	106	108	64-134	2	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.0	19.0	95	95	68-129	0		
Dibromochloromethane	ug/L	ND	20	20	16.1	16.1	81	81	71-137	0		5M
Dibromomethane	ug/L	ND	20	20	19.3	18.9	97	95	66-130	2		
Dichlorodifluoromethane	ug/L	ND	20	20	24.5	22.1	123	111	61-144	10		
Dichlorofluoromethane	ug/L	ND	20	20	24.1	22.5	120	113	68-125	7		
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	21.7	21.4	109	107	57-127	2		
Ethylbenzene	ug/L	ND	20	20	20.0	19.4	100	97	66-128	3		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	15.1	13.3	76	66	52-150	13		5M
sopropylbenzene (Cumene)	ug/L	ND	20	20	19.9	18.9	99	95	73-138	5		
n&p-Xylene	ug/L	ND	40	40	39.8	38.8	99	97	62-133	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.3	20.4	102	102	60-125	0	30	
Methylene Chloride	ug/L	ND	20	20	22.1	21.2	110	105	59-125	4	30	
n-Butylbenzene	ug/L	ND	20	20	18.4	17.2	92	86	68-146	7	30	
n-Propylbenzene	ug/L	ND	20	20	19.7	18.1	98	91	72-132	8	30	
Naphthalene	ug/L	ND	20	20	16.8	16.6	84	83	55-135	1	30	
o-Xylene	ug/L	ND	20	20	19.6	19.3	98	97	66-128	2	30	
o-Isopropyltoluene	ug/L	ND	20	20	18.2	16.9	91	85	69-139	7	30	
sec-Butylbenzene	ug/L	ND	20	20	18.7	17.5	94	88	69-149	7	30	
Styrene	ug/L	ND	20	20	19.4	18.9	97	94	75-126	3		
ert-Butylbenzene	ug/L	ND	20	20	18.5	17.3	93	86	67-147	7		
Tetrachloroethene	ug/L	ND	20	20	18.7	17.4	94	87	70-141	7		
Tetrahydrofuran	ug/L	ND	200	200	215	209	108	105	64-128	3		
Toluene	ug/L	ND	20	20	19.3	18.8	96	93	64-125	3		
rans-1,2-Dichloroethene	ug/L	ND	20	20	21.4	21.1	107	106	62-135	1		
rans-1,3-Dichloropropene	ug/L	ND	20	20	18.1	17.6	90	88	69-125	2		
Trichloroethene	ug/L	ND	20	20	20.1	19.3	100	96	69-141	4		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

MATRIX SPIKE & MATRIX SF		CATE: 3670 10524484004	MS Spike	MSD Spike	3670945 MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Trichlorofluoromethane	ug/L	ND	20	20	24.0	21.9	120	109	61-148	9	30	
Vinyl chloride	ug/L	ND	20	20	21.8	21.3	109	106	56-144	2	30	
Xylene (Total)	ug/L	ND	60	60	59.5	58.1	99	97	64-131	2	30	
1,2-Dichloroethane-d4 (S)	%.						98	101	75-125			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						94	94	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

QC Batch: 685522 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Qualifiers

Associated Lab Samples: 10524056001, 10524056003, 10524056004, 10524056005

METHOD BLANK: 3666265 Matrix: Water

Associated Lab Samples: 10524056001, 10524056003, 10524056004, 10524056005

Parameter Units Result Limit Analyzed

 1,4-Dioxane (SIM)
 ug/L
 ND
 0.25
 07/12/20 21:10

 1,4-Dioxane-d8 (S)
 %.
 25
 30-125
 07/12/20 21:10
 S0

LABORATORY CONTROL SAMPLE & LCSD: 3666266 3666267										
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,4-Dioxane (SIM)	ug/L	10	11.1	11.6	111	116	32-128	4	20	
1,4-Dioxane-d8 (S)	%.				32	30	30-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

EPA 8270E by SIM

Analysis Method:

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

QC Batch: 686473

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524056002

METHOD BLANK: 3670888 Matrix: Water

Associated Lab Samples: 10524056002

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1,4-Dioxane (SIM) ND 0.25 07/14/20 19:18 ug/L 1,4-Dioxane-d8 (S) 32 30-125 07/14/20 19:18 %.

LABORATORY CONTROL SAMPLE: 3670889 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 11.3 113 32-128 ug/L

1,4-Dioxane (SIM) ug/L 10 11.3 113 32-128 1,4-Dioxane-d8 (S) %. 37 30-125

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670890 3670891

MS MSD 10524992001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L 0.25 10 10 12.2 13.0 120 128 32-130 30 1,4-Dioxane-d8 (S) 35 30-125 %. 31

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670892 3670893

MS MSD 10524994001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec **RPD** RPD Qual Result Limits 1,4-Dioxane (SIM) 1.1 10 13.2 ug/L 10 13.8 121 127 32-130 5 1,4-Dioxane-d8 (S) %. 19 17 30-125 1M

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **BATCH QUALIFIERS**

Batch: 685755

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

#### **ANALYTE QUALIFIERS**

Date: 07/16/2020 05:23 PM

1M	Surrogate recovery outside laboratory control limits due to emulsion.
2M	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. Analyte presence below reporting limits in associated samples. No impact to data.
3M	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. The result may be biased high.
4M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. Instrument sensitivity verified with reporting limit check.
5M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. The result may be biased low.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
S0	Surrogate recovery outside laboratory control limits.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin

Pace Project No.: 10524056

Date: 07/16/2020 05:23 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524056001	GP-49 (10-12)	EPA 3010A	685809	EPA 6010D	686147
10524056002	GP-49 (17-20)	EPA 3010A	685809	EPA 6010D	686147
10524056003	GP-49 (45-47)	EPA 3010A	685809	EPA 6010D	686147
10524056004	GP-49 (57-59)	EPA 3010A	685809	EPA 6010D	686147
10524056005	GP-49 (73-75)	EPA 3010A	685809	EPA 6010D	686147
10524056001	GP-49 (10-12)	EPA Mod. 3510C	685522	EPA 8270E by SIM	685755
10524056002	GP-49 (17-20)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524056003	GP-49 (45-47)	EPA Mod. 3510C	685522	EPA 8270E by SIM	685755
10524056004	GP-49 (57-59)	EPA Mod. 3510C	685522	EPA 8270E by SIM	685755
10524056005	GP-49 (73-75)	EPA Mod. 3510C	685522	EPA 8270E by SIM	685755
10524056001	GP-49 (10-12)	EPA 8260D	686485		
10524056002	GP-49 (17-20)	EPA 8260D	686485		
10524056003	GP-49 (45-47)	EPA 8260D	686485		
10524056004	GP-49 (57-59)	EPA 8260D	686485		
10524056005	GP-49 (73-75)	EPA 8260D	686485		
10524056006	Trip Blank	EPA 8260D	686485		

SCE Analytical The

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Project No./ Lab I.D. Samples Intact (Y/N) DRINKING WATER ..o. 200100 4898 Pr.200100 4898 23 20010c 4898 Wy 2001004898 D3 200100 4898 SAMPLE CONDITIONS F-ALL-Q-020r#v.07, 15-F#b-2007 Custody Sealed Cooler (Y/N) OTHER ŏ Ice (Y/N) Received on MO#: 10524056 GROUND WATER Ø 2,7 Residual Chlorine (Y/N) O° ni qmaT Ĩ Š Page: RCRA REGULATORY AGENCY TIME Requested Analysis Filtered (Y/N) (MM/DD/YY): 07/08/2020 STATE: Site Location DATE NPDES UST Det Original 10524056 ACCEPTED BY / AFFILATION Company Name: OURDXOID - HI HAD ××× メメ メベス 30V Z lead Dissolved theaT sisylanA t ANOSINATOL TN/A Tolow Other Methanol Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> Preservatives HOBN HCI 2 HNO3 PRINT Name of SAMPLER: Day I CHAIN VOS<sup>Z</sup>H Reference: Pace Project Manager: Pace Profile #: 11:38 Section C TIME Address: Unpreserved ·9 ace Quote σ # OF CONTAINERS 0 6 T J SAMPLER NAME AND SIGNATURE 7/3/20 SIGNATURE of SAMPLER; SAMPLE TEMP AT COLLECTION DATE Selly Jamorski, TIME COMPOSITE END/GRAB DATE COLLECTED Water Gremin Wooderwan RELINQUISHED BY / AFFILIATION WT 6 1/1/12 1705 WY 6 7/8/12 720 TIME G 1/7/20 1430 NOT GA 171/20 1540 UT 6 7/1/20 1635 2606-0015 CODY TO: Aaren Bentser COMPOSITE **Holows** DATE Required Project Information: Report To: Sharpe (е=екАв с=сомР) SAMPLE TYPE urchase Order No.: 5 Project Number: MATRIX CODE Project Name: Section B Ben Valid Matrix Codes DRINGNATER DW WATER WASTE WASTE WESTER WESTER WESTER WESTER WESTER DILL OLD WITH WHITE WESTER WESTER STATESTER DT TISSUE TISSUE ż samples Sundamin Quenchican impany: Wench Associates Moneer Greek ADDITIONAL COMMENTS Fax: n/a equested Due Date/TAT: Stancland Plan, MN (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 73-75 GR-49/57-54 # Heres feed SAMPLE ID GP-49 (45-47 GP-49 (11-20 GR-49 (10-12) Required Client Information 1708 -011-219. いとしてい ection A equired Client Information: X Dissolved 8 Idress: 1800 Mapk Section D 1880 Page 28 of 30 유 F ω S 9 6



#### Document Name:

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt  ASS	العام المحا	٥	Pro	oject #:	WO#: 10524056
Courier: Fed Ex UPS SpeeDee Tracking Number:	Us	SPS .	Cli		PM: AKA Due Date: 07/15/20 CLIENT: WENCK
	 ] <sub>N</sub> .		L	. □v	No Biological Tissue Frozen? Yes No N/A
	]No 	_	ils Intacti		· · · · · · · · · · · · · · · · · · ·
Packing Material: Bubble Wrap Bubble Ba	ags _	Non <b>e</b>	Oth	er:	Temp Blank? XYes No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☒ T5(0489)		Type of l			Blue None Dry Melted
Did Samples Originate in West Virginia? ☐Yes No	We	re All Co	ntainer T	emps Tak	en? □Yes □No ☑N/A
Temp should be above freezing to 6°C Cooler Temp Rea	ad w/ten	np blank	:	20_	OC Average Corrected Temp
Correction Factor: Trve Cooler Temp Correcte	d w/tem	p blank	:	2.2	(no temp blank only): See Exceptions  OC 1 Container
USDA Regulated Soil: ( N/A, water sample/Other: Did samples originate in a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a f	aps)? [	Yes	□No	A, Did sa Hawa	nitials of Person Examining Contents:
					COMMENTS:
Chain of Custody Present and Filled Out?	Yes	□No		1.	***************************************
Chain of Custody Relinquished?	Yes	□No		2.	
Sampler Name and/or Signature on COC? Samples Arrived within Hold Time?	Yes	No □No	∐N/A	3. 4.	
Short Hold Time Analysis (<72 hr)?	∐Yes	MNo		5.	ecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome
Rush Turn Around Time Requested?	∐Yes	⊠No		6.	
Sufficient Volume?	Yes	□No		7.	
Correct Containers Used?	Yes	□No		8.	
-Pace Containers Used?	Yes	—□No-			
Containers Intact?	Yes	□No		9.	
Field Filtered Volume Received for Dissolved Tests?	Yes	No	□N/A	<del> </del>	sediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No		11. If no,	write ID/ Date/Time on Container Below: See Exception
Matrix: Mater Soil Oil Other  All containers needing acid/base preservation have been			Thu.	12. Samp	nle #
checked?	∐Yes	∐No	<b>X</b> N/A	12. Janip	ne #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	M∕A		☑ NaOH   ☐ HNO₃   ☐ H₂SO₄   ☐ Zinc Acetate
Exceptions VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	Yes	□No	□n/a	Positive f Chlorine Res. Chlo	? No pH Paper Lot#
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	☐Yes <b>X</b> Yes	□No	N/A N/A	13.	See Exception
Trip Blank Present?	Yes	No	□N/A	14. 2	World Inp blanks 760964
Trip Blank Custody Seals Present?	Yes	□No	`	<sub>l</sub> Pac	te Trip Blank Lot # (if purchased): 20009
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:	<u> </u>		-	Date/T	Field Data Required? Yes No ime:
			-		
Project Manager Review:	MA)	Oya	ρ		Date: 7/9/2020
Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers).	complian	ce sampl	ls, a copy o	of this form	will be sent to the North Carolina DEHNR Certification Office ( i.e. out o

Labeled by:

Page 29 of 30



# Document Name: **Headspace Exception**

Document No.: ENV-FRM-MIN4-0140 Rev.00

Document Revised: 26Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
GP-49 (45-47)	1	)	4	6	Y
GP-49 (57-59)	0	3	3	6	$\langle$
GP-49 (73-75)	1	2	$\sim$	6	<b>&gt;</b>
					·
	5			_	





July 21, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 01, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National Mt. Juliet
- Pace Analytical Services Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

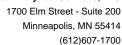
ann Asp

**Enclosures** 

cc: Aaron Benker, Wenck

Ben Holcomb, Wenck Associates, Inc. Kelly Jaworski, Wenck Associates Inc







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064

Connecticut Certification #: PH-0256 EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909 Minnesota Certification #: 027-053-137

Maryland Certification #: 322

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: WN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

## **Pace Analytical Services National**

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487 Georgia DW Certification #: 923 Georgia Certification: NELAP Idaho Certification #: TN00003 Illinois Certification #: 200008 Indiana Certification #: C-TN-01 Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: Al30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002

Maine Certification #: 1N0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

**Pace Analytical Services National** 

New Jersey Certification #: TN002 New Mexico DW Certification New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41 North Carolina Drinking Water Certification #: 21704 North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140 Ohio VAP Certification #: CL0069 Oklahoma Certification #: 9915 Oregon Certification #: TN200002 Pennsylvania Certification #: 68-02979 Rhode Island Certification #: LAO00356 South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02 AIHA-LAP/LLC EMLAP Certification #:100789



## **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10523520001	GP-44 (24-27)	Water	07/01/20 08:00	07/01/20 18:55
10523520002	GP-44 (37-40)	Water	07/01/20 08:40	07/01/20 18:55
10523520003	GP-45 (0-1')	Solid	07/01/20 09:50	07/01/20 18:55
10523520004	GP-45 (11-12')	Solid	07/01/20 10:30	07/01/20 18:55
10523520005	GP-45 (11-14)	Water	07/01/20 12:00	07/01/20 18:55
10523520006	GP-45 (29-32)	Water	07/01/20 12:45	07/01/20 18:55
10523520007	GP-45 (37-40)	Water	07/01/20 13:20	07/01/20 18:55
10523520008	GP-46 (0-1)	Solid	07/01/20 15:15	07/01/20 18:55
10523520009	GP-46 (9-10)	Solid	07/01/20 15:40	07/01/20 18:55
10523520010	GP-46 (9-12)	Water	07/01/20 16:30	07/01/20 18:55
10523520011	RINSATE-070120	Water	07/01/20 15:00	07/01/20 18:55
10523520012	DUP070120	Water	07/01/20 00:00	07/01/20 18:55
10523520013	GP-46 (17-20)	Water	07/01/20 17:05	07/01/20 18:55
10523520014	GP-46 (30-33)	Water	07/01/20 17:40	07/01/20 18:55
10523520015	RINSATE-070120-B	Water	07/01/20 17:55	07/01/20 18:55
10523520016	GP-46 (38-40)	Water	07/01/20 18:30	07/01/20 18:55
10523520017	TRIP BLANK	Water	07/01/20 00:00	07/01/20 18:55
10523520018	TRIP BLANK	Solid	07/01/20 00:00	07/01/20 18:55



## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

10523520001   GP-44 (24-27)	Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10523520002	10523520001	GP-44 (24-27)	EPA 6010D	IP	1	PASI-M
10523520002         PR-44 (37-40)         EPA 6010D         IP         1         PASI-MI           10523520003         PR-45 (0-1*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520003         PR-46 (0-1*)         EPA 8260D         JAH         70         PASI-MI           10523520004         PR-45 (11-12*)         EPA 8260D         ADM         71         PASI-MI           10523520005         PR-45 (11-14*)         EPA 8260D         ADM         71         PASI-MI           10523520006         PR-45 (11-14*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520007         PR-45 (29-32*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520007         PR-45 (29-32*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520007         PR-45 (37-40*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520007         PR-46 (0-1*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520008         PR-46 (0-1*)         EPA 8270E by SIM         ZT         2         PASI-MI           10523520008         PR-46 (0-1*)         EPA 8260D         JM			EPA 8270E by SIM	ZT	2	PASI-M
PASS			EPA 8260D	JAH	70	PAN
PASS	10523520002	GP-44 (37-40)	EPA 6010D	IP	1	PASI-M
10523520003         GP-45 (0-1*)         EPA 6010D         IP         1         PASI-M           10523520004         GP-45 (11-12*)         EPA 8260D         ADM         71         PAN           10523520005         GP-45 (11-14*)         EPA 8260D         KDW         1         PAN           10523520005         GP-45 (11-14*)         EPA 8010D         IP         1         PASI-M           10523520006         GP-45 (29-32*)         EPA 8270E by SIM         ZT         2         PASI-M           10523520007         GP-45 (37-49*)         EPA 8010D         IP         1         PASI-M           10523520007         GP-45 (37-49*)         EPA 8010D         IP         1         PASI-M           10523520007         GP-46 (0-1*)         EPA 8010D         IP         1         PASI-M           10523520008         GP-46 (0-1*)         EPA 8010D         IP         1         PASI-M           10523520008         GP-46 (0-1*)         EPA 8020D         JAH         70         PASI-M           10523520009         GP-46 (9-10*)         EPA 8020D         JAH         71         PASI-M           10523520010         GP-46 (9-12*)         EPA 8020D         JAH         70         PASI-M			EPA 8270E by SIM	ZT	2	PASI-M
10523520004   6P-45 (11-12')   EPA 8260D   ADM   71   PASI-M			EPA 8260D	JAH	70	PAN
10523520004         GP-45 (11-12')         EPA 8260D         ADM         7₁         PAN           10523520005         GP-45 (11-14)         EPA 6010D         IP         1         PASI-M           10523520006         GP-45 (11-14)         EPA 8270E by SIM         ZT         2         PASI-M           10523520006         GP-45 (29-32)         EPA 8270E by SIM         ZT         2         PASI-M           10523520007         GP-45 (37-40)         EPA 8270E by SIM         ZT         2         PASI-M           10523520007         GP-45 (37-40)         PAN         PAN         PAN         PAN         PAN           105235200007         GP-46 (-17)         PAN         PAN         PAN         PAN         PAN           105235200008         GP-46 (-1)         EPA 8270E by SIM         ZT         2         PASI-M           105235200009         GP-46 (9-10)         PAN         PAN         PAN         PAN           10523520010         GP-46 (9-10)         PAN         PAN         PAN         PAN         PAN           10523520011         GP-46 (9-12)         EPA 8270E by SIM         ZT         2         PASI-M           10523520011         RINSATE-070120         EPA 8270E by SIM <t< td=""><td>10523520003</td><td>GP-45 (0-1')</td><td>EPA 6010D</td><td>IP</td><td>1</td><td>PASI-M</td></t<>	10523520003	GP-45 (0-1')	EPA 6010D	IP	1	PASI-M
SM 2540G			ASTM D2974	JDL	1	PASI-M
10523520005       GP-45 (11-14)       EPA 6010D       IP       1       PASI-NI         EPA 8270E by SIM       ZT       2       PASI-NI         10523520006       GP-45 (29-32)       EPA 8260D       JAH       70       PAN         10523520007       GP-45 (29-32)       EPA 8270E by SIM       ZT       2       PASI-NI         10523520007       GP-45 (37-40)       EPA 8270E by SIM       ZT       2       PASI-NI         10523520008       GP-46 (9-1)       EPA 8270E by SIM       ZT       2       PASI-NI         10523520009       GP-46 (9-1)       EPA 8270E by SIM       ZT       2       PASI-NI         10523520009       GP-46 (9-10)       EPA 8260D       JAH       70       PAN         10523520010       GP-46 (9-10)       EPA 8260D       JAH       70       PAN         10523520010       GP-46 (9-10)       EPA 8260D       ADM       71       PAN         10523520010       GP-46 (9-12)       EPA 8270E by SIM       ZT       2       PASI-NI         10523520011       RINSATE-070120       EPA 8270E by SIM       ZT       2       PASI-NI         10523520012       DUP070120       EPA 8270E by SIM       ZT       2       PASI-NI <td>10523520004</td> <td>GP-45 (11-12')</td> <td>EPA 8260D</td> <td>ADM</td> <td>71</td> <td>PAN</td>	10523520004	GP-45 (11-12')	EPA 8260D	ADM	71	PAN
PASI			SM 2540G	KDW	1	PAN
PAS	10523520005	GP-45 (11-14)	EPA 6010D	IP	1	PASI-M
10523520006			EPA 8270E by SIM	ZT	2	PASI-M
PAS			EPA 8260D	JAH	70	PAN
PASS	10523520006	GP-45 (29-32)	EPA 6010D	IP	1	PASI-M
10523520007			EPA 8270E by SIM	ZT	2	PASI-M
PASI-Marcon			EPA 8260D	JAH	70	PAN
PAR 8260D   JAH   70   PAN	10523520007	GP-45 (37-40)	EPA 6010D	IP	1	PASI-M
10523520008 GP-46 (0-1) EPA 6010D IP 1 PASI-M PASI-M 10523520009 GP-46 (9-10) EPA 8260D ADM 71 PAN 10523520009 GP-46 (9-12) EPA 8270E by SIM ZT 2 PASI-M 10523520011 RINSATE-070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520013 GP-46 (30-33) EPA 6010D IP 1 PASI-M 10523520014 GP-46 (30-33)			EPA 8270E by SIM	ZT	2	PASI-M
ASTM D2974 JDL 1 PASI-M 10523520009 GP-46 (9-10) EPA 8260D ADM 71 PAN 10523520010 GP-46 (9-12) EPA 6010D IP 1 PASI-M 10523520011 RINSATE-070120 EPA 8270E by SIM ZT 2 PASI-M 10523520011 RINSATE-070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8270E by SIM ZT 2 PASI-M 10523520012 DUP070120 EPA 8260D JAH 70 PAN 10523520012 DUP070120 EPA 6010D IP 1 PASI-M 10523520013 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520014 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520015 EPA 8270E by SIM ZT 2 PASI-M 10523520016 EPA 8260D JAH 70 PAN 10523520017 GP-46 (17-20) EPA 6010D IP 1 PASI-M 10523520018 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520018 GP-46 (17-20) EPA 8270E by SIM ZT 2 PASI-M 10523520018 GP-46 (30-33) EPA 6010D IP 1 PASI-M 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M 10523520014 PASI-M 105235			EPA 8260D	JAH	70	PAN
10523520009	10523520008	GP-46 (0-1)	EPA 6010D	IP	1	PASI-M
SM 2540G   KDW   1			ASTM D2974	JDL	1	PASI-M
10523520010 GP-46 (9-12) EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520011 RINSATE-070120 EPA 8260D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520012 DUP070120 EPA 8260D JAH 70 PAN 10523520012 DUP070120 EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520012 PASI-M EPA 8260D JAH 70 PAN 10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M PASI-	10523520009	GP-46 (9-10)	EPA 8260D	ADM	71	PAN
EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520011 RINSATE-070120 EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520012 DUP070120 EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520012 DUP070120 EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M PAN 10523520014 GP-46 (30-33)			SM 2540G	KDW	1	PAN
PAN	10523520010	GP-46 (9-12)	EPA 6010D	IP	1	PASI-M
10523520011       RINSATE-070120       EPA 6010D       IP       1       PASI-M         EPA 8270E by SIM       ZT       2       PASI-M         EPA 8260D       JAH       70       PAN         10523520012       DUP070120       EPA 6010D       IP       1       PASI-M         EPA 8270E by SIM       ZT       2       PASI-M         EPA 8260D       JAH       70       PAN         10523520013       GP-46 (17-20)       EPA 6010D       IP       1       PASI-M         EPA 8270E by SIM       ZT       2       PASI-M         EPA 8260D       JAH       70       PAN         10523520014       GP-46 (30-33)       EPA 6010D       IP       1       PASI-M			EPA 8270E by SIM	ZT	2	PASI-M
EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN  10523520012 DUP070120 EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN  10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN  10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M			EPA 8260D	JAH	70	PAN
EPA 8260D JAH 70 PAN  10523520012 DUP070120 EPA 6010D IP 1 PASI-M  EPA 8270E by SIM ZT 2 PASI-M  EPA 8260D JAH 70 PAN  10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M  EPA 8270E by SIM ZT 2 PASI-M  EPA 8270E by SIM ZT 2 PASI-M  EPA 8270E by SIM ZT 2 PASI-M  EPA 8260D JAH 70 PAN  10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M	10523520011	RINSATE-070120	EPA 6010D	IP	1	PASI-M
10523520012       DUP070120       EPA 6010D       IP       1       PASI-M         EPA 8270E by SIM       ZT       2       PASI-M         EPA 8260D       JAH       70       PAN         10523520013       GP-46 (17-20)       EPA 6010D       IP       1       PASI-M         EPA 8270E by SIM       ZT       2       PASI-M         EPA 8260D       JAH       70       PAN         10523520014       GP-46 (30-33)       EPA 6010D       IP       1       PASI-M			EPA 8270E by SIM	ZT	2	PASI-M
EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M			EPA 8260D	JAH	70	PAN
EPA 8260D JAH 70 PAN  10523520013 GP-46 (17-20) EPA 6010D IP 1 PASI-M  EPA 8270E by SIM ZT 2 PASI-M  EPA 8260D JAH 70 PAN  10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M	10523520012	DUP070120	EPA 6010D	IP	1	PASI-M
10523520013         GP-46 (17-20)         EPA 6010D         IP         1         PASI-M           EPA 8270E by SIM         ZT         2         PASI-M           EPA 8260D         JAH         70         PAN           10523520014         GP-46 (30-33)         EPA 6010D         IP         1         PASI-M			EPA 8270E by SIM	ZT	2	PASI-M
EPA 8270E by SIM ZT 2 PASI-M EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M			EPA 8260D	JAH	70	PAN
EPA 8260D JAH 70 PAN 10523520014 GP-46 (30-33) EPA 6010D IP 1 PASI-M	10523520013	GP-46 (17-20)	EPA 6010D	IP	1	PASI-M
<b>10523520014 GP-46 (30-33)</b> EPA 6010D IP 1 PASI-M			EPA 8270E by SIM	ZT	2	PASI-M
			EPA 8260D	JAH	70	PAN
EPA 8270E by SIM ZT 2 PASI-M	10523520014	GP-46 (30-33)	EPA 6010D	IP	1	PASI-M
			EPA 8270E by SIM	ZT	2	PASI-M





## **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260D	JAH	70	PAN
10523520015	RINSATE-070120-B	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523520016	GP-46 (38-40)	EPA 6010D	IP	1	PASI-M
		EPA 8270E by SIM	ZT	2	PASI-M
		EPA 8260D	JAH	70	PAN
10523520017	TRIP BLANK	EPA 8260D	JAH	70	PAN
10523520018	TRIP BLANK	EPA 8260D	ADM	71	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-44 (24-27)	Lab ID: 1	0523520001	Collected: 07/01	/20 08:00	Received: 07	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical M	ethod: EPA 60	010D Preparation I	/lethod: E	PA 3010A			
	Pace Analyti	ical Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:1:	2 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical M	ethod: EPA 82	270E by SIM Prepa	ration Me	ethod: EPA Mod.	3510C		
	-	ical Services -						
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/02/20 13:08	07/10/20 14:5	2 123-91-1	
Surrogates							_	
1,4-Dioxane-d8 (S)	46	%.	30-12	1	07/02/20 13:08	07/10/20 14:52	2	
VOA (GC/MS) 8260D	Analytical M	ethod: EPA 82	260D Preparation I	/lethod: 8	260D			
	Pace Nation	al - Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/09/20 02:10	07/09/20 02:10	) 67-64-1	
Allyl chloride	ND	ug/L	5.00			07/09/20 02:10		
Benzene	ND	ug/L	1.00			07/09/20 02:10		
Bromobenzene	ND	ug/L	1.00			07/09/20 02:10	_	
3romochloromethane	ND	ug/L	1.00		07/09/20 02:10			
Bromodichloromethane	ND	ug/L	1.00		07/09/20 02:10			
Bromoform	ND	ug/L	1.00			07/09/20 02:10		
Bromomethane	ND	ug/L	5.00		07/09/20 02:10			
n-Butylbenzene	ND	ug/L	1.00		07/09/20 02:10			
sec-Butylbenzene	ND	ug/L	1.00		07/09/20 02:10			
ert-Butylbenzene	ND	ug/L	1.00		07/09/20 02:10			
Carbon tetrachloride	ND	ug/L	1.00			07/09/20 02:10		
Chlorobenzene	ND	ug/L	1.00			07/09/20 02:10		
Dibromochloromethane	ND	ug/L	1.00		07/09/20 02:10			
Chloroethane	ND	ug/L	5.00		07/09/20 02:10			
Chloroform	ND	ug/L	5.00		07/09/20 02:10			
Chloromethane	ND	ug/L	2.50			07/09/20 02:10		
2-Chlorotoluene	ND	ug/L	1.00		07/09/20 02:10			
4-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 02:10			CC
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 02:10			
Dibromomethane	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00		07/09/20 02:10	07/09/20 02:10	75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00		07/09/20 02:10	07/09/20 02:10	75-43-4	
1,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.00		07/09/20 02:10	07/09/20 02:10	0 107-06-2	
1,1-Dichloroethene	ND	ug/L	1.00		07/09/20 02:10	07/09/20 02:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 02:10			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	78-87-5	
1,1-Dichloropropene	ND	ug/L	1.00		07/09/20 02:10			
1,3-Dichloropropane	ND	ug/L	1.00		07/09/20 02:10			
cis-1,3-Dichloropropene	ND	ug/L	1.00		07/09/20 02:10			



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-44 (24-27)	Lab ID: 105	23520001	Collected: 07/01/2	20 08:00	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 02:10		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 02:10	07/09/20 02:10	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 02:10		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 02:10	07/09/20 02:10	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 02:10	07/09/20 02:10	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 02:10	07/09/20 02:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 02:10		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 02:10		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 02:10			
Tetrachloroethene	ND	ug/L	1.00	1		07/09/20 02:10		
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 02:10		CC
Toluene	ND	ug/L	1.00	1		07/09/20 02:10		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 02:10		
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 02:10		
I,1,1-Trichloroethane	ND	ug/L	1.00	1		07/09/20 02:10		
1,1,2-Trichloroethane	ND	ug/L	1.00	1		07/09/20 02:10		
Frichloroethene	ND	ug/L	1.00	1		07/09/20 02:10		
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 02:10		
I,2,3-Trichloropropane	ND	ug/L	2.50	1		07/09/20 02:10		
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 02:10		
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 02:10		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 02:10		
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 02:10		
Surrogates	140	ug/ L	3.00	•	31,00,20 02.10	5.705/20 02.10	1000 20 1	
Toluene-d8 (S)	112	%	80.0-120	1	07/09/20 02:10	07/09/20 02:10	2037-26-5	
4-Bromofluorobenzene (S)	108	%	77.0-126	1		07/09/20 02:10		
1,2-Dichloroethane-d4 (S)	104	%	70.0-130	1	07/09/20 02:10			



Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Sample: GP-44 (37-40)	Lab ID: 105	23520002	Collected: 07/01/2	0 08:40	Received: 07	//01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
010D MET ICP, Lab Filtered	Analytical Met	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	al Services -	Minneapolis					
ead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:21	7439-92-1	
270E MSSV 14 Dioxane By SIM			270E by SIM Prepara	ation Me	thod: EPA Mod. 3	3510C		
	Pace Analytica	al Services -	Minneapolis					
,4-Dioxane (SIM) Surrogates	3.2	ug/L	0.29	1	07/02/20 13:08	07/10/20 15:12	2 123-91-1	
,4-Dioxane-d8 (S)	45	%.	30-125	1	07/02/20 13:08	07/10/20 15:12	2	
/OA (GC/MS) 8260D	Analytical Met	hod: EPA 82	260D Preparation Me	thod: 82	260D			
,	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/09/20 02:29	07/09/20 02:20	67-64-1	
Allyl chloride	ND ND	ug/L ug/L	5.00	1	07/09/20 02:29			
•		-						
Benzene	ND	ug/L	1.00	1	07/09/20 02:29 07/09/20 02:29			
Bromobenzene	ND	ug/L	1.00	1				
romochloromethane	ND	ug/L	1.00	1	07/09/20 02:29			
romodichloromethane	ND	ug/L	1.00	1	07/09/20 02:29			
romoform	ND	ug/L	1.00	1	07/09/20 02:29			
romomethane	ND	ug/L	5.00	1	07/09/20 02:29			
-Butylbenzene	ND	ug/L	1.00	1	07/09/20 02:29			
ec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 02:29			
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 02:29			
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 02:29			
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29			
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/09/20 02:29	07/09/20 02:29	75-00-3	
Chloroform	ND	ug/L	5.00	1	07/09/20 02:29	07/09/20 02:29	67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 02:29	07/09/20 02:29	74-87-3	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	95-49-8	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 02:29	07/09/20 02:29	96-12-8	CC
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	106-93-4	
ibromomethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	106-46-7	
) Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 02:29	07/09/20 02:29	75-71-8	
ichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 02:29			
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 02:29			
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 02:29			
,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 02:29			
is-1,2-Dichloroethene	ND ND	ug/L	1.00	1	07/09/20 02:29			
rans-1,2-Dichloroethene	ND ND	ug/L	1.00	1	07/09/20 02:29			
,2-Dichloropropane	ND ND	ug/L ug/L	1.00	1	07/09/20 02:29			
• •		•						
,1-Dichloropropene	ND	ug/L	1.00	1	07/09/20 02:29			
,3-Dichloropropane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	142-28-9	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-44 (37-40)	Lab ID: 105	23520002	Collected: 07/01/2	0 08:40	Received: 07	7/01/20 18:55 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	594-20-7	
Ethylbenzene .	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 02:29		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 02:29	07/09/20 02:29	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 02:29		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 02:29	07/09/20 02:29	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 02:29	07/09/20 02:29	91-20-3	CC
- n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 02:29		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 02:29		CC
Foluene	1.04	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	120-82-1	
I,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	79-00-5	
Frichloroethene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	79-01-6	
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 02:29		
,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 02:29	07/09/20 02:29	96-18-4	
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 02:29	07/09/20 02:29	95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 02:29		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 02:29		
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 02:29		
Surrogates		3			•		-	
Toluene-d8 (S)	112	%	80.0-120	1	07/09/20 02:29	07/09/20 02:29	2037-26-5	
1-Bromofluorobenzene (S)	106	%	77.0-126	1	07/09/20 02:29	07/09/20 02:29	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70.0-130	1	07/09/20 02:29	07/09/20 02:29	17060-07-0	



N2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Percent Moisture

Date: 07/21/2020 11:45 AM

Sample: GP-45 (0-1') Lab ID: 10523520003 Collected: 07/01/20 09:50 Received: 07/01/20 18:55 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 6010D Preparation Method: EPA 3050B 6010D MET ICP Pace Analytical Services - Minneapolis 17.8 mg/kg 0.53 07/06/20 10:37 07/07/20 13:55 7439-92-1 Lead Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis

0.10

1

07/07/20 14:08

13.3



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (11-12') Lab ID: 10523520004 Collected: 07/01/20 10:30 Received: 07/01/20 18:55 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 07/01/20 10:30 07/15/20 04:34 67-64-1 Acetone mg/kg 1.86 Allyl chloride ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 107-05-1 Benzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 71-43-2 ND 0.0372 07/01/20 10:30 07/15/20 04:34 108-86-1 Bromobenzene mg/kg 25 0.0372 Bromochloromethane ND mg/kg 25 07/01/20 10:30 07/15/20 04:34 74-97-5 Bromodichloromethane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 75-27-4 Bromoform ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 75-25-2 mg/kg **Bromomethane** NΠ 0.186 25 07/01/20 10:30 07/15/20 04:34 74-83-9 mg/kg ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 98-06-6 Carbon tetrachloride ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 56-23-5 Chlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 108-90-7 Dibromochloromethane ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 124-48-1 mg/kg Chloroethane ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 75-00-3 Chloroform ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 67-66-3 Chloromethane ND mg/kg 0.0931 25 07/01/20 10:30 07/15/20 04:34 74-87-3 2-Chlorotoluene ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 95-49-8 mg/kg 07/01/20 10:30 07/15/20 04:34 106-43-4 4-Chlorotoluene ND mg/kg 0.0372 25 1,2-Dibromoethane (EDB) ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 96-12-8 ND 25 07/01/20 10:30 07/15/20 04:34 74-95-3 Dibromomethane mg/kg 0.0372 1,2-Dichlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 106-46-7 Dichlorodifluoromethane ND 25 07/01/20 10:30 07/15/20 04:34 75-71-8 mg/kg 0.186 Dichlorofluoromethane ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 75-43-4 1,1-Dichloroethane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 75-34-3 ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 107-06-2 1.2-Dichloroethane mg/kg ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 75-35-4 1.1-Dichloroethene mg/kg NΠ 0.0372 25 07/01/20 10:30 07/15/20 04:34 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 07/01/20 10:30 07/15/20 04:34 156-60-5 0.0372 trans-1,2-Dichloroethene mg/kg ND 25 07/01/20 10:30 07/15/20 04:34 78-87-5 1,2-Dichloropropane mg/kg 0.0372 1,3-Dichloropropane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 142-28-9 2,2-Dichloropropane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 594-20-7 1,1-Dichloropropene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 563-58-6 ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 10061-02-6 ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 100-41-4 Ethylbenzene mg/kg Diethyl ether (Ethyl ether) ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 98-82-8 ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.372 25 07/01/20 10:30 07/15/20 04:34 78-93-3 Methylene Chloride ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 75-09-2



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

**Total Solids** 

Date: 07/21/2020 11:45 AM

Lab ID: 10523520004 Collected: 07/01/20 10:30 Received: 07/01/20 18:55 Sample: GP-45 (11-12') Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.372 25 07/01/20 10:30 07/15/20 04:34 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 1634-04-4 Naphthalene ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 91-20-3 n-Propylbenzene ND 0.0372 07/01/20 10:30 07/15/20 04:34 103-65-1 mg/kg 25 ND 0.0372 07/01/20 10:30 07/15/20 04:34 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0372 25 07/01/20 10:30 07/15/20 04:34 79-34-5 mg/kg ND 07/01/20 10:30 07/15/20 04:34 127-18-4 Tetrachloroethene 0.0372 25 mg/kg ND 0.186 25 07/01/20 10:30 07/15/20 04:34 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 71-55-6 1,1,2-Trichloroethane ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 79-00-5 Trichloroethene ND mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 79-01-6 Trichlorofluoromethane ND mg/kg 0.186 25 07/01/20 10:30 07/15/20 04:34 75-69-4 07/01/20 10:30 07/15/20 04:34 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0372 25 ND 1,2,3-Trichloropropane mg/kg 0.0931 25 07/01/20 10:30 07/15/20 04:34 96-18-4 ND Vinyl chloride mg/kg 0.0372 25 07/01/20 10:30 07/15/20 04:34 75-01-4 ND 25 07/01/20 10:30 07/15/20 04:34 1330-20-7 Xylene (Total) mg/kg 0.112 1,4-Dioxane (p-Dioxane) ND mg/kg 3.72 25 07/01/20 10:30 07/15/20 04:34 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 104 % 70.0-130 25 07/01/20 10:30 07/15/20 04:34 17060-07-0 75.0-131 07/01/20 10:30 07/15/20 04:34 2037-26-5 Toluene-d8 (S) 93.1 % 25 97.5 % 67.0-138 25 07/01/20 10:30 07/15/20 04:34 460-00-4 4-Bromofluorobenzene (S) Total Solids 2540 G-2011 Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet

### **REPORT OF LABORATORY ANALYSIS**

07/10/20 11:04 07/10/20 11:14

81.9

%



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (11-14)	Lab ID:	10523520005	Collected: 07/0	1/20 12:00	Received: 0	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	010D Preparation	Method: E	PA 3010A			
	Pace Anal	ytical Services -	Minneapolis					
ead, Dissolved	NE	ug/L	10.	0 1	07/07/20 04:24	07/07/20 16:23	3 7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical	Method: EPA 82	270E by SIM Prep	aration Me	ethod: EPA Mod.	3510C		
,	-	ytical Services -						
I,4-Dioxane (SIM)	NE	ug/L	0.2	5 1	07/02/20 13:08	07/10/20 15:33	3 123-91-1	
Surrogates								
,4-Dioxane-d8 (S)	37	7 %.	30-12	5 1	07/02/20 13:08	07/10/20 15:33	3	
/OA (GC/MS) 8260D	Analytical	Method: EPA 82	260D Preparation	Method: 8	260D			
,	Pace Natio	onal - Mt. Juliet						
Acetone	NE	) ug/L	50.	0 1	07/09/20 02:49	07/09/20 02:49	9 67-64-1	
Allyl chloride	NE	J	5.0			07/09/20 02:49		
Benzene	NE	J	1.0			07/09/20 02:49		
Bromobenzene	NE	ū	1.0			07/09/20 02:49		
Bromochloromethane	NE		1.0			07/09/20 02:49		
Bromodichloromethane	NE	_	1.0			07/09/20 02:49		
romoform	NE	J	1.0			07/09/20 02:49		
romomethane	NE	J	5.0		07/09/20 02:49	07/09/20 02:49	74-83-9	
-Butylbenzene	NE	ū	1.0			07/09/20 02:49		
ec-Butylbenzene	NE	J	1.0	0 1		07/09/20 02:49		
ert-Butylbenzene	NE	_	1.0	0 1	07/09/20 02:49	07/09/20 02:49	98-06-6	
Carbon tetrachloride	NE	ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	9 56-23-5	
Chlorobenzene	NE	ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	108-90-7	
Dibromochloromethane	NE	ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	124-48-1	
Chloroethane	NE		5.0	0 1	07/09/20 02:49	07/09/20 02:49	75-00-3	
Chloroform	NE	ug/L	5.0	0 1	07/09/20 02:49	07/09/20 02:49	9 67-66-3	
Chloromethane	NE	ug/L	2.5	0 1	07/09/20 02:49	07/09/20 02:49	74-87-3	
-Chlorotoluene	NE	) ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	95-49-8	
-Chlorotoluene	NE	) ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	9 106-43-4	
,2-Dibromo-3-chloropropane	NE	) ug/L	5.0	0 1	07/09/20 02:49	07/09/20 02:49	96-12-8	CC
,2-Dibromoethane (EDB)	NE	) ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	9 106-93-4	
Dibromomethane	NE	J	1.0			07/09/20 02:49		
,2-Dichlorobenzene	NE	) ug/L	1.0	0 1		07/09/20 02:49		
,3-Dichlorobenzene	NE	) ug/L	1.0	0 1		07/09/20 02:49		
,4-Dichlorobenzene	NE	ū	1.0			07/09/20 02:49		
ichlorodifluoromethane	NE	J	5.0			07/09/20 02:49		
ichlorofluoromethane	NE	J	5.0			07/09/20 02:49		
,1-Dichloroethane	NE	J	1.0			07/09/20 02:49		
,2-Dichloroethane	NE	J	1.0			07/09/20 02:49		
,1-Dichloroethene	NE	ū	1.0			07/09/20 02:49		
is-1,2-Dichloroethene	NE	J	1.0			07/09/20 02:49		
rans-1,2-Dichloroethene	NE	J	1.0			07/09/20 02:49		
,2-Dichloropropane	NE	ū	1.0			07/09/20 02:49		
,1-Dichloropropene	NE	J	1.0			07/09/20 02:49		
,3-Dichloropropane	NE	) ug/L	1.0	0 1	07/09/20 02:49	07/09/20 02:49	142-28-9	

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (11-14)	Lab ID: 105	23520005	Collected: 07/01/2	0 12:00	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 8	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 02:49	07/09/20 02:49	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 02:49	07/09/20 02:49	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 02:49	07/09/20 02:49	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 02:49	07/09/20 02:49	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 02:49	07/09/20 02:49	109-99-9	CC
Toluene	1.41	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	120-82-1	
,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 02:49	07/09/20 02:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 02:49	07/09/20 02:49	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	95-63-6	
,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/09/20 02:49	07/09/20 02:49	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/09/20 02:49	07/09/20 02:49	1330-20-7	
Surrogates		-						
Toluene-d8 (S)	107	%	80.0-120	1	07/09/20 02:49	07/09/20 02:49	2037-26-5	
4-Bromofluorobenzene (S)	106	%	77.0-126	1	07/09/20 02:49	07/09/20 02:49	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70.0-130	1	07/09/20 02:49	07/09/20 02:49	17060-07-0	



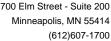
Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Pace Project No.: 10523520								
Sample: GP-45 (29-32)	Lab ID: 1052	3520006	Collected: 07/01/2	0 12:45	Received: 07	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: El	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:2	6 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	270E by SIM Prepara	ition Me	thod: EPA Mod. 3	3510C		
·	Pace Analytical	Services -	Minneapolis					
1,4-Dioxane (SIM)	ND	ug/L	0.29	1	07/02/20 13:08	07/10/20 15:5	4 123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	41	%.	30-125	1	07/02/20 13:08	07/10/20 15:5	4	
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D			
, , , , , , , , , , , , , , , , , , , ,	Pace National -		·					
Acatono	ND	ua/l	50.0	1	07/09/20 03:09	07/00/20 02:0	0 67 64 1	
Acetone	ND ND	ug/L	50.0 5.00	1 1	07/09/20 03:09 07/09/20 03:09			
Allyl chloride	ND	ug/L	5.00					
Benzene	ND	ug/L	1.00	1	07/09/20 03:09			
Bromobenzene	ND	ug/L	1.00	1	07/09/20 03:09			
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 03:09			
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 03:09			
Bromoform	ND	ug/L	1.00	1	07/09/20 03:09			
Bromomethane	ND	ug/L	5.00	1	07/09/20 03:09			
n-Butylbenzene	ND	ug/L	1.00	1	07/09/20 03:09			
sec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 03:09			
tert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 03:09			
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 03:09			
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:0	9 75-00-3	
Chloroform	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:0	9 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 03:09	07/09/20 03:0	9 74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 95-49-8	
4-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:0	9 96-12-8	CC
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:0	9 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:0	9 75-71-8	
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 03:09			
1,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 03:09			
1,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 03:09			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 03:09			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 03:09			
trans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 03:09			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 03:09			
1,1-Dichloropropane	ND ND	ug/L ug/L	1.00	1	07/09/20 03:09			
	ND ND	ug/L ug/L	1.00	1	07/09/20 03:09			
1,3-Dichloropropane								

## **REPORT OF LABORATORY ANALYSIS**

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (29-32)	Lab ID: 105	23520006	Collected: 07/01/2	0 12:45	Received: 07	/01/20 18:55 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 03:09	07/09/20 03:09	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 03:09	07/09/20 03:09	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:09	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:09	109-99-9	CC
Toluene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 03:09	07/09/20 03:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 03:09	07/09/20 03:09	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/09/20 03:09	07/09/20 03:09	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/09/20 03:09	07/09/20 03:09	1330-20-7	
Surrogates		-						
Toluene-d8 (S)	109	%	80.0-120	1	07/09/20 03:09	07/09/20 03:09	2037-26-5	
4-Bromofluorobenzene (S)	103	%	77.0-126	1	07/09/20 03:09	07/09/20 03:09	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70.0-130	1	07/09/20 03:09	07/09/20 03:09	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (37-40)	Lab ID:	10523520007	Collected: 07/0	1/20 13:20	Received: 0	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limi	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	010D Preparation	Method: E	PA 3010A			
	Pace Analy	tical Services -	Minneapolis					
Lead, Dissolved	NE	ug/L	10.	0 1	07/07/20 04:24	07/07/20 16:29	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical	Method: EPA 82	270E by SIM Prep	aration Me	ethod: EPA Mod.	3510C		
	-	tical Services -						
1,4-Dioxane (SIM)	0.27	<b>7</b> ug/L	0.2	3 1	07/02/20 13:08	07/10/20 16:15	5 123-91-1	
Surrogates				_			_	
1,4-Dioxane-d8 (S)	52	2 %.	30-12	5 1	07/02/20 13:08	07/10/20 16:15	5	
VOA (GC/MS) 8260D	Analytical I	Method: EPA 82	260D Preparation	Method: 8	260D			
,	Pace Natio	nal - Mt. Juliet						
Acetone	NE	) ug/L	50.	0 1	07/09/20 03·20	07/09/20 03:29	67-64-1	
Allyl chloride	NE	ŭ	5.0			07/09/20 03:29		
Benzene	NE	J	1.0			07/09/20 03:29		
Bromobenzene	NE	Ū	1.0			07/09/20 03:29		
Bromochloromethane	NE		1.0			07/09/20 03:29		
Bromodichloromethane	NE	_	1.0			07/09/20 03:29		
romoform	NE	J	1.0			07/09/20 03:29		
romomethane	NE	J	5.0			07/09/20 03:29		
-Butylbenzene	NE	Ū	1.0			07/09/20 03:29		
ec-Butylbenzene	NE	ŭ	1.0			07/09/20 03:29		
ert-Butylbenzene	NE	_	1.0			07/09/20 03:29		
Carbon tetrachloride	NE	J	1.0			07/09/20 03:29		
Chlorobenzene	NE	J	1.0			07/09/20 03:29		
Dibromochloromethane	NE	Ū	1.0			07/09/20 03:29		
Chloroethane	NE		5.0			07/09/20 03:29		
Chloroform	NE	_	5.0			07/09/20 03:29		
Chloromethane	NE	J	2.5			07/09/20 03:29		
2-Chlorotoluene	NE	J	1.0			07/09/20 03:29		
-Chlorotoluene	NE	ŭ	1.0	0 1		07/09/20 03:29		
,2-Dibromo-3-chloropropane	NE	_	5.0	0 1		07/09/20 03:29		CC
,2-Dibromoethane (EDB)	NE	_	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 106-93-4	
Dibromomethane	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	74-95-3	
,2-Dichlorobenzene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	95-50-1	
,3-Dichlorobenzene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 541-73-1	
,4-Dichlorobenzene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	106-46-7	
Dichlorodifluoromethane	NE	ug/L	5.0	0 1	07/09/20 03:29	07/09/20 03:29	75-71-8	
ichlorofluoromethane	NE	ug/L	5.0	0 1	07/09/20 03:29	07/09/20 03:29	75-43-4	
,1-Dichloroethane	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	75-34-3	
,2-Dichloroethane	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 107-06-2	
,1-Dichloroethene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	75-35-4	
sis-1,2-Dichloroethene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 156-59-2	
rans-1,2-Dichloroethene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 156-60-5	
,2-Dichloropropane	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	78-87-5	
,1-Dichloropropene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 563-58-6	
,3-Dichloropropane	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 142-28-9	
sis-1,3-Dichloropropene	NE	ug/L	1.0	0 1	07/09/20 03:29	07/09/20 03:29	9 10061-01-5	

## **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-45 (37-40)	Lab ID: 105	23520007	Collected: 07/01/2	0 13:20	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	594-20-7	
Ethylbenzene .	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 03:29		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 03:29	07/09/20 03:29	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1	07/09/20 03:29	07/09/20 03:29	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 03:29	07/09/20 03:29	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	1634-04-4	
Naphthalene	ND	ug/L	5.00	1		07/09/20 03:29		CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 03:29		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 03:29		CC
Foluene	1.16	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	79-00-5	
Frichloroethene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 03:29		
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 03:29	07/09/20 03:29	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 03:29	07/09/20 03:29	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 03:29		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 03:29		
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 03:29		
Surrogates		3			•		-	
Toluene-d8 (S)	109	%	80.0-120	1	07/09/20 03:29	07/09/20 03:29	2037-26-5	
1-Bromofluorobenzene (S)	108	%	77.0-126	1	07/09/20 03:29	07/09/20 03:29	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70.0-130	1	07/09/20 03:29	07/09/20 03:29	17060-07-0	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (0-1) Lab ID: 10523520008 Collected: 07/01/20 15:15 Received: 07/01/20 18:55 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 6010D Preparation Method: EPA 3050B 6010D MET ICP Pace Analytical Services - Minneapolis 5.7 mg/kg 0.52 07/06/20 10:37 07/07/20 13:58 7439-92-1 Lead Analytical Method: ASTM D2974 Dry Weight / %M by ASTM D2974 Pace Analytical Services - Minneapolis Percent Moisture 10.0 0.10 1 07/07/20 14:08 N2

Matrix: Solid

CAS No.

Analyzed

07/01/20 15:40 07/15/20 04:56 96-12-8

07/01/20 15:40 07/15/20 04:56 74-95-3

07/01/20 15:40 07/15/20 04:56 95-50-1

07/01/20 15:40 07/15/20 04:56 541-73-1

07/01/20 15:40 07/15/20 04:56 75-34-3

07/01/20 15:40 07/15/20 04:56 75-35-4

07/01/20 15:40 07/15/20 04:56 156-59-2

07/01/20 15:40 07/15/20 04:56 156-60-5

07/01/20 15:40 07/15/20 04:56 78-87-5

07/01/20 15:40 07/15/20 04:56 142-28-9

07/01/20 15:40 07/15/20 04:56 594-20-7

07/01/20 15:40 07/15/20 04:56 563-58-6

07/01/20 15:40 07/15/20 04:56 100-41-4

07/01/20 15:40 07/15/20 04:56 60-29-7

07/01/20 15:40 07/15/20 04:56 87-68-3

07/01/20 15:40 07/15/20 04:56 98-82-8

07/01/20 15:40 07/15/20 04:56 99-87-6

07/01/20 15:40 07/15/20 04:56 78-93-3

07/01/20 15:40 07/15/20 04:56 75-09-2

07/01/20 15:40 07/15/20 04:56 10061-01-5

07/01/20 15:40 07/15/20 04:56 10061-02-6

07/01/20 15:40 07/15/20 04:56 107-06-2

106-46-7

75-71-8

75-43-4

07/01/20 15:40 07/15/20 04:56

07/01/20 15:40 07/15/20 04:56

07/01/20 15:40 07/15/20 04:56

(612)607-1700

Qual



#### **ANALYTICAL RESULTS**

Report Limit

Collected: 07/01/20 15:40 Received: 07/01/20 18:55

Prepared

DF

Lab ID: 10523520009

Results

ND

NΠ

ND

mg/kg

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Units

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

1,2-Dibromo-3-chloropropane

Dibromomethane

1,2-Dichlorobenzene

1.3-Dichlorobenzene

1,4-Dichlorobenzene

Dichlorodifluoromethane

Dichlorofluoromethane

1,1-Dichloroethane

1.2-Dichloroethane

1.1-Dichloroethene

cis-1,2-Dichloroethene

1,2-Dichloropropane

1,3-Dichloropropane

2,2-Dichloropropane

1,1-Dichloropropene

Ethylbenzene

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

Diethyl ether (Ethyl ether)

Hexachloro-1,3-butadiene

Date: 07/21/2020 11:45 AM

p-Isopropyltoluene

2-Butanone (MEK)

Methylene Chloride

Isopropylbenzene (Cumene)

trans-1,2-Dichloroethene

**Parameters** 

Sample: GP-46 (9-10)

VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 25 07/01/20 15:40 07/15/20 04:56 67-64-1 Acetone mg/kg 1.77 Allyl chloride ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 107-05-1 Benzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 71-43-2 ND 0.0354 07/01/20 15:40 07/15/20 04:56 108-86-1 Bromobenzene mg/kg 25 0.0354 Bromochloromethane ND mg/kg 25 07/01/20 15:40 07/15/20 04:56 74-97-5 Bromodichloromethane ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 75-27-4 Bromoform ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 75-25-2 mg/kg **Bromomethane** NΠ 0.177 25 07/01/20 15:40 07/15/20 04:56 74-83-9 mg/kg ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 98-06-6 Carbon tetrachloride ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 56-23-5 Chlorobenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 108-90-7 Dibromochloromethane ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 124-48-1 mg/kg Chloroethane ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 75-00-3 Chloroform ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 67-66-3 Chloromethane ND mg/kg 0.0885 25 07/01/20 15:40 07/15/20 04:56 74-87-3 2-Chlorotoluene ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 95-49-8 mg/kg 07/01/20 15:40 07/15/20 04:56 106-43-4 4-Chlorotoluene ND mg/kg 0.0354 25 1,2-Dibromoethane (EDB) ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 106-93-4

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#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

**Total Solids** 

Date: 07/21/2020 11:45 AM

Collected: 07/01/20 15:40 Received: 07/01/20 18:55 Sample: GP-46 (9-10) Lab ID: 10523520009 Matrix: Solid Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions. **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.354 25 07/01/20 15:40 07/15/20 04:56 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 1634-04-4 Naphthalene ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 91-20-3 ND 0.0354 07/01/20 15:40 07/15/20 04:56 103-65-1 n-Propylbenzene mg/kg 25 ND 0.0354 07/01/20 15:40 07/15/20 04:56 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0354 25 07/01/20 15:40 07/15/20 04:56 79-34-5 mg/kg ND 0.0354 Tetrachloroethene 25 07/01/20 15:40 07/15/20 04:56 127-18-4 mg/kg ND 25 07/01/20 15:40 07/15/20 04:56 109-99-9 Tetrahydrofuran mg/kg 0.177 Toluene ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 71-55-6 0.0354 1,1,2-Trichloroethane ND mg/kg 25 07/01/20 15:40 07/15/20 04:56 79-00-5 Trichloroethene ND mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 79-01-6 Trichlorofluoromethane ND mg/kg 0.177 25 07/01/20 15:40 07/15/20 04:56 75-69-4 07/01/20 15:40 07/15/20 04:56 76-13-1 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0354 25 ND 1,2,3-Trichloropropane mg/kg 0.0885 25 07/01/20 15:40 07/15/20 04:56 96-18-4 ND Vinyl chloride mg/kg 0.0354 25 07/01/20 15:40 07/15/20 04:56 75-01-4 ND 0.106 25 07/01/20 15:40 07/15/20 04:56 1330-20-7 Xylene (Total) mg/kg 1,4-Dioxane (p-Dioxane) ND mg/kg 3.54 25 07/01/20 15:40 07/15/20 04:56 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 105 % 70.0-130 25 07/01/20 15:40 07/15/20 04:56 17060-07-0 75.0-131 07/01/20 15:40 07/15/20 04:56 2037-26-5 Toluene-d8 (S) 96.5 % 25 98.8 % 67.0-138 25 07/01/20 15:40 07/15/20 04:56 460-00-4 4-Bromofluorobenzene (S) Total Solids 2540 G-2011 Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet

### **REPORT OF LABORATORY ANALYSIS**

07/10/20 11:04 07/10/20 11:14

83.0

%



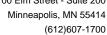
## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (9-12)	Lab ID: 1	10523520010	Collected: 07/01/2	20 16:30	Received: 07	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical N	Method: EPA 60	010D Preparation Mo	ethod: El	PA 3010A			
	Pace Analy	tical Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:32	2 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical N	Method: EPA 82	270E by SIM Prepar	ation Me	thod: EPA Mod.	3510C		
•	-	tical Services -						
1,4-Dioxane (SIM)	0.94	ug/L	0.24	1	07/02/20 13:08	07/10/20 16:3	5 123-91-1	
Surrogates							_	
1,4-Dioxane-d8 (S)	30	%.	30-125	1	07/02/20 13:08	07/10/20 16:3	5	
VOA (GC/MS) 8260D	Analytical N	/lethod: EPA 82	260D Preparation Me	ethod: 82	260D			
, ,	Pace Natio	nal - Mt. Juliet						
Acetone	ND	ug/L	100	2	07/09/20 03:40	07/09/20 03:49	67-64-1	
Allyl chloride	ND	J	10.0	2		07/09/20 03:49		
Benzene	ND	-	2.00	2		07/09/20 03:49		
Bromobenzene	ND	0	2.00	2		07/09/20 03:49		
Bromochloromethane	ND		2.00	2		07/09/20 03:49		
Bromodichloromethane	ND		2.00	2		07/09/20 03:49		
Bromoform	ND	0	2.00	2		07/09/20 03:49		
Bromomethane	ND	0	10.0	2		07/09/20 03:49		
n-Butylbenzene	ND	ū	2.00	2		07/09/20 03:49		
sec-Butylbenzene	ND	J	2.00	2		07/09/20 03:49		
tert-Butylbenzene	ND		2.00	2		07/09/20 03:49		
Carbon tetrachloride	ND	0	2.00	2		07/09/20 03:49		
Chlorobenzene	ND	0	2.00	2		07/09/20 03:49		
Dibromochloromethane	ND	ū	2.00	2		07/09/20 03:49		
Chloroethane	ND		10.0	2	07/09/20 03:49	07/09/20 03:49	75-00-3	
Chloroform	ND		10.0	2	07/09/20 03:49	07/09/20 03:49	9 67-66-3	
Chloromethane	ND	ug/L	5.00	2	07/09/20 03:49	07/09/20 03:49	74-87-3	
2-Chlorotoluene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	95-49-8	
4-Chlorotoluene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2	07/09/20 03:49	07/09/20 03:49	96-12-8	CC
1,2-Dibromoethane (EDB)	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	9 106-93-4	
Dibromomethane	ND	ug/L	2.00	2		07/09/20 03:49		
1,2-Dichlorobenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	9 541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	9 106-46-7	
Dichlorodifluoromethane	ND	ug/L	10.0	2	07/09/20 03:49	07/09/20 03:49	75-71-8	
Dichlorofluoromethane	ND	ug/L	10.0	2		07/09/20 03:49		
1,1-Dichloroethane	ND	ug/L	2.00	2		07/09/20 03:49		
1,2-Dichloroethane	ND	J	2.00	2		07/09/20 03:49		
1,1-Dichloroethene	ND	ū	2.00	2		07/09/20 03:49		
cis-1,2-Dichloroethene	ND	J	2.00	2		07/09/20 03:49		
trans-1,2-Dichloroethene	ND	J	2.00	2		07/09/20 03:49		
1,2-Dichloropropane	ND	J	2.00	2		07/09/20 03:49		
1,1-Dichloropropene	ND	J	2.00	2		07/09/20 03:49		
1,3-Dichloropropane	ND	ū	2.00	2		07/09/20 03:49		
cis-1,3-Dichloropropene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	9 10061-01-5	





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (9-12)	Lab ID: 105	23520010	Collected: 07/01/2	20 16:30	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	10061-02-6	
2,2-Dichloropropane	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	594-20-7	
Ethylbenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	2.00	2		07/09/20 03:49		
sopropylbenzene (Cumene)	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	98-82-8	
o-Isopropyltoluene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	99-87-6	
2-Butanone (MEK)	ND	ug/L	20.0	2	07/09/20 03:49	07/09/20 03:49	78-93-3	CC
Methylene Chloride	ND	ug/L	10.0	2		07/09/20 03:49		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	20.0	2	07/09/20 03:49	07/09/20 03:49	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	1634-04-4	
Naphthalene	ND	ug/L	10.0	2	07/09/20 03:49	07/09/20 03:49	91-20-3	CC
- n-Propylbenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	103-65-1	
Styrene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	2.00	2		07/09/20 03:49		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	76-13-1	
Tetrachloroethene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	2		07/09/20 03:49		CC
Toluene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	79-00-5	
Frichloroethene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	79-01-6	
Frichlorofluoromethane	ND	ug/L	10.0	2		07/09/20 03:49		
1,2,3-Trichloropropane	ND	ug/L	5.00	2		07/09/20 03:49		
1,2,4-Trimethylbenzene	ND	ug/L	2.00	2	07/09/20 03:49	07/09/20 03:49	95-63-6	
I,3,5-Trimethylbenzene	ND	ug/L	2.00	2		07/09/20 03:49		
/inyl chloride	ND	ug/L	2.00	2		07/09/20 03:49		
(ylene (Total)	ND	ug/L	6.00	2		07/09/20 03:49		
Surrogates		3					-	
Toluene-d8 (S)	110	%	80.0-120	2	07/09/20 03:49	07/09/20 03:49	2037-26-5	
1-Bromofluorobenzene (S)	106	%	77.0-126	2	07/09/20 03:49	07/09/20 03:49	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70.0-130	2	07/09/20 03:49	07/09/20 03:49	17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Sample: RINSATE-070120	Lab ID: 105	23520011	Collected: 07/01/2	0 15:00	Received: 07	//01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:3	5 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.36	1	07/02/20 13:08	07/10/20 16:56	6 123-91-1	
1,4-Dioxane-d8 (S)	51	%.	30-125	1	07/02/20 13:08	07/10/20 16:56	6	
/OA (GC/MS) 8260D	•		260D Preparation Me	thod: 8	260D			
	Pace National	- IVIT. JUIIET						
Acetone	ND	ug/L	50.0	1	07/09/20 04:09			
Allyl chloride	ND	ug/L	5.00	1	07/09/20 04:09			
Benzene	ND	ug/L	1.00	1	07/09/20 04:09		-	
Bromobenzene	ND	ug/L	1.00	1	07/09/20 04:09			
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 04:09			
romodichloromethane	ND	ug/L	1.00	1	07/09/20 04:09			
romoform	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 75-25-2	
romomethane	ND	ug/L	5.00	1	07/09/20 04:09	07/09/20 04:09	9 74-83-9	
-Butylbenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 104-51-8	
ec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 135-98-8	
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 98-06-6	
arbon tetrachloride	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 56-23-5	
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/09/20 04:09	07/09/20 04:09	9 75-00-3	
Chloroform	ND	ug/L	5.00	1	07/09/20 04:09	07/09/20 04:09	9 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 04:09	07/09/20 04:09	9 74-87-3	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	95-49-8	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 04:09	07/09/20 04:09	9 96-12-8	CC
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 04:09			
ichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 04:09	07/09/20 04:09	9 75-43-4	
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	9 75-34-3	
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 04:09			
,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 04:09			
is-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 04:09			
rans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 04:09			
,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 04:09			
,1-Dichloropropene	ND	ug/L	1.00	1	07/09/20 04:09			
,3-Dichloropropane	ND	ug/L	1.00	1	07/09/20 04:09			
is-1,3-Dichloropropene	ND ND	ug/L ug/L	1.00	1	07/09/20 04:09			



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: RINSATE-070120	Lab ID: 105	23520011	Collected: 07/01/2	20 15:00	Received: 07	7/01/20 18:55 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 04:09		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 04:09	07/09/20 04:09	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 04:09		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 04:09	07/09/20 04:09	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	1634-04-4	
Naphthalene	ND	ug/L	5.00	1		07/09/20 04:09		CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 04:09	07/09/20 04:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 04:09		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 04:09		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/09/20 04:09		
Tetrachloroethene	ND	ug/L	1.00	1		07/09/20 04:09		
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 04:09		CC
Toluene	ND	ug/L	1.00	1		07/09/20 04:09		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 04:09		
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 04:09		
I,1,1-Trichloroethane	ND	ug/L	1.00	1		07/09/20 04:09		
I,1,2-Trichloroethane	ND	ug/L	1.00	1		07/09/20 04:09		
Frichloroethene	ND	ug/L	1.00	1		07/09/20 04:09		
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 04:09		
1,2,3-Trichloropropane	ND	ug/L	2.50	1		07/09/20 04:09		
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 04:09		
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 04:09		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 04:09		
(ylene (Total)	ND ND	ug/L	3.00	1		07/09/20 04:09		
Surrogates	ND	ug, L	3.00	•	31,00,20 04.00	01,00,20 04.00	.500 20 1	
Foluene-d8 (S)	109	%	80.0-120	1	07/09/20 04:09	07/09/20 04:09	2037-26-5	
I-Bromofluorobenzene (S)	108	%	77.0-126	1		07/09/20 04:09		
1,2-Dichloroethane-d4 (S)	109	%	70.0-130	1		07/09/20 04:09		



Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Sample: DUP070120	Lab ID: 105	23520012	Collected: 07/01/2	20 00:00	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	10D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
_ead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:38	7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		70E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/02/20 13:08	07/10/20 17:17	123-91-1	
Surrogates I,4-Dioxane-d8 (S)	47	%.	30-125	1	07/02/20 13:08	07/10/20 17:17	,	
/OA (GC/MS) 8260D	Analytical Meth		60D Preparation Me	ethod: 82	260D			
Acetone	ND	ug/L	50.0	1	07/09/20 04:29	07/09/20 04:29	67-64-1	
Allyl chloride	ND	ug/L	5.00	1		07/09/20 04:29		
Benzene	ND	ug/L	1.00	1	07/09/20 04:29			
Bromobenzene	ND	ug/L	1.00	1	07/09/20 04:29			
Bromochloromethane	ND	ug/L	1.00	1		07/09/20 04:29		
romodichloromethane	ND ND	ug/L	1.00	1	07/09/20 04:29			
romoform	ND ND	-	1.00	1		07/09/20 04:29		
		ug/L						
romomethane	ND	ug/L	5.00	1	07/09/20 04:29			
-Butylbenzene	ND	ug/L	1.00	1	07/09/20 04:29			
ec-Butylbenzene	ND	ug/L	1.00	1		07/09/20 04:29		
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 04:29			
Carbon tetrachloride	ND	ug/L	1.00	1		07/09/20 04:29		
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 04:29			
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 04:29			
Chloroethane	ND	ug/L	5.00	1		07/09/20 04:29		
Chloroform	ND	ug/L	5.00	1	07/09/20 04:29	07/09/20 04:29	67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 04:29	07/09/20 04:29	74-87-3	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	95-49-8	
-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 04:29	07/09/20 04:29	96-12-8	CC
,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:29	07/09/20 04:29	541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.00	1		07/09/20 04:29		
Pichlorodifluoromethane	ND	ug/L	5.00	1		07/09/20 04:29		
ichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 04:29			
,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 04:29			
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 04:29			
,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 04:29			
is-1,2-Dichloroethene	ND ND	ug/L	1.00	1	07/09/20 04:29			
	ND ND	ug/L	1.00	1	07/09/20 04:29			
·	IND	ug/L	1.00					
rans-1,2-Dichloroethene		ua/l	1 00	1	07/00/20 0 <i>1</i> ·20	$07/09/20 04 \cdot 20$	78-87 5	
rans-1,2-Dichloroethene ,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 04:29		
rans-1,2-Dichloroethene ,2-Dichloropropane ,1-Dichloropropene ,3-Dichloropropane		ug/L ug/L ug/L	1.00 1.00 1.00	1 1 1	07/09/20 04:29 07/09/20 04:29 07/09/20 04:29	07/09/20 04:29	563-58-6	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: DUP070120	Lab ID: 10	523520012	Collected: 07	/01/20 00:	00 Received	07/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Lir	nit DF	Prepare	d Analyze	d CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Me	thod: EPA 82	260D Preparatio	n Method:	8260D			
	Pace Nationa	I - Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 10061-02-6	
2,2-Dichloropropane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 594-20-7	
Ethylbenzene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 98-82-8	
o-Isopropyltoluene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 99-87-6	
2-Butanone (MEK)	ND	ug/L	1	0.0 1		1:29 07/09/20 04		CC
Methylene Chloride	ND	ug/L	5	.00 1		4:29 07/09/20 04		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1	0.0 1	07/09/20 04	1:29 07/09/20 04	:29 108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 1634-04-4	
Naphthalene	ND	ug/L	5	.00 1	07/09/20 04	1:29 07/09/20 04	:29 91-20-3	CC
n-Propylbenzene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 103-65-1	
Styrene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 76-13-1	
Tetrachloroethene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 127-18-4	
Tetrahydrofuran	ND	ug/L	5	.00 1	07/09/20 04	1:29 07/09/20 04	:29 109-99-9	CC
Toluene	1.23	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 120-82-1	
I,1,1-Trichloroethane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 79-00-5	
Frichloroethene	ND	ug/L	1	.00 1	07/09/20 04	1:29 07/09/20 04	:29 79-01-6	
richlorofluoromethane	ND	ug/L	5	.00 1	07/09/20 04	1:29 07/09/20 04	:29 75-69-4	
,2,3-Trichloropropane	ND	ug/L	2	.50 1		1:29 07/09/20 04		
I,2,4-Trimethylbenzene	ND	ug/L	1	.00 1		1:29 07/09/20 04		
1,3,5-Trimethylbenzene	ND	ug/L	1	.00 1		1:29 07/09/20 04		
/inyl chloride	ND	ug/L	1	.00 1		1:29 07/09/20 04		
(ylene (Total)	ND	ug/L		.00 1		1:29 07/09/20 04		
Surrogates		J	_					
Toluene-d8 (S)	114	%	80.0-	120 1	07/09/20 04	4:29 07/09/20 04	:29 2037-26-5	
I-Bromofluorobenzene (S)	112	%	77.0-	126 1	07/09/20 04	1:29 07/09/20 04	:29 460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70.0-	130 1	07/09/20 04	1:29 07/09/20 04	:29 17060-07-0	



Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Analytical Method: EPA 6010D Preparation Method: EPA 3010A   Pace Analytical Services - Minneapolis	Sample: GP-46 (17-20)	Lab ID: 105	23520013	Collected: 07/01/2	20 17:05	Received: 07	7/01/20 18:55 I	Matrix: Water	
Lead, Dissolved ND ugl. 10.0 1 07/07/20 04:24 07/07/20 16:41 7439-92-1 1270E MSSV 14 Dioxane By SIM Pace Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis Preparation Method: EPA 8270E by SIM Preparation Method	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Page	6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis    ND ug/L 0.24 1 07/02/20 13:08 07/10/20 17:38 123-91-1    Surrogates		Pace Analytica	l Services -	Minneapolis					
A-Dioxane (SIM)   ND   ug/L   0.24   1   07/02/20 13:08   07/10/20 17:38   123-91-1	Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:41	7439-92-1	
A-Dioxane (SIM)	8270E MSSV 14 Dioxane By SIM				ation Me	thod: EPA Mod.	3510C		
A-Dioxano-d8 (S)		Pace Analytica	I Services -	Minneapolis					
A-Dioxane-d8 (\$)	1,4-Dioxane (SIM)	ND	ug/L	0.24	1	07/02/20 13:08	07/10/20 17:38	123-91-1	
Analytical Method: EPA 8260D   Preparation Method: 8260D   Pace National - Mt. Juliet   Acetone   ND   ug/L   5.0.0   1   07/09/20 04:49   07/09/20 04:49   107-05-1   Renzene   ND   ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   107-05-1   Renzene   ND   ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   17-43-2   Renzene   ND   ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   17-43-2   Renzene   ND   ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   17-43-2   Renzene   ND   ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   17-43-2   Renzendichloromethane   ND   ug/L   1.00   1   07/09/20 04:49   0	_	41	%.	30-125	1	07/02/20 13:08	07/10/20 17:38	3	
Note	, ,								
No.	VOA (GC/NIS) 02000			2000 Fieparation Me	ziiiou. 8,	2000			
ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 107-05-1 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 17-43-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 17-43-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 17-43-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 17-43-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 74-97-5 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 75-25-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 75-25-2 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 74-83-9 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 104-51-8 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 104-51-8 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 lenzenee ND ug/L 1.00 1 07/09/20 04:49 07/09/20		Pace National	- IVIL. JUIIET						
Parameter   ND	Acetone	ND	ug/L	50.0	1	07/09/20 04:49	07/09/20 04:49	67-64-1	
Stromochioromethane   ND	Allyl chloride	ND	ug/L	5.00	1	07/09/20 04:49	07/09/20 04:49	107-05-1	
Stromochloromethane   ND	Benzene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	71-43-2	
Stromochloromethane   ND	Bromobenzene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	108-86-1	
Stromodichloromethane   ND	Bromochloromethane	ND	-	1.00	1	07/09/20 04:49	07/09/20 04:49	74-97-5	
Stomoform   ND			•			07/09/20 04:49	07/09/20 04:49	75-27-4	
Semonmethane   ND   Ug/L   S.00   1   07/09/20 04:49   07/09/20 04:49   104-51-8    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   104-51-8    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   135-98-8    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   35-98-8    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   35-98-8    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   36-23-5    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   36-23-5    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   36-23-5    -Butylbenzene   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   36-23-5    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-23-5    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   37-00-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L   5.00   1   07/09/20 04:49   07/09/20 04:49   36-66-3    -Butylbenzene   ND   Ug/L			-						
Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 104-51-8 ec-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 er-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 er-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 er-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 er-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 136-93-5 100 100 100 100 100 100 100 100 100 10			-						
ee-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 135-98-8 ent-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 98-06-6 carbon tetrachloride ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 98-06-6 carbon tetrachloride ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 obtromochloromethane ND ug/L 5.00 1 07/09/20 04:49 07/09/20 04:49 108-90-7 obtromochloromethane ND ug/L 5.00 1 07/09/20 04:49 07/09/20 04:49 67-66-3 obtromochloromethane ND ug/L 5.00 1 07/09/20 04:49 07/09/20 04:49 67-66-3 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 67-66-3 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 95-48-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-43-4 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-43-4 obtromochloromethane (EDB) ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane (EDB) ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-62-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-63-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-63-8 obtromochloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 156-63-8 obtromochloromethane ND ug/L 1.00 1 07/			-						
ert-Butylbenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 98-06-6 carbon tetrachloride ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 18-06-6 carbon tetrachloride ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 18-08-05-6 carbon tetrachloride ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 18-08-05-7 cblorobenzene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 18-08-05-7 cbloromochloromethane ND ug/L 5.00 1 07/09/20 04:49 07/09/20 04:49 18-08-05-8 cbloroform ND ug/L 5.00 1 07/09/20 04:49 07/09/20 04:49 75-00-3 cbloroform ND ug/L 2.50 1 07/09/20 04:49 07/09/20 04:49 75-00-3 cbloroform ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 75-00-3 cbloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 95-49-8 cbloromethane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 95-49-8 cbloromochane (EDB) ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-12-8 CC 05-100-100-100-100-100-100-100-100-100-1	•		-						
Carbon tetrachloride         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         56-23-5           Chlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         108-90-7           Dibromochloromethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         124-48-1           Chloroform         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-00-3           Chloromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         76-66-3           Chlorotoluene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         76-66-3           Chlorotoluene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         76-66-3           Chlorotoluene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         96-42-8         CC           C-Dibromoethane (EDB)         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         96-12-8         CC<	•		•						
Chlorobenzene   ND	-		-						
Dibromochloromethane   ND   Ug/L   1.00   1   07/09/20 04:49   07/09/20 04:49   75-00-3   07/007/007/007/007/007/007/007/00 04:49   75-00-3   07/007/007/007/007/007/007/007/007/007/			-						
Chloroethane   ND			-						
Chloroform   ND   ug/L   2.50   1   07/09/20 04:49   07			-						
Chloromethane ND ug/L 2.50 1 07/09/20 04:49 07/09/20 04:49 95-49-8 PC-Chlorotoluene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 95-49-8 PC-Chlorotoluene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 106-43-4 PC-Chlorotoluene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 96-12-8 CC 1,2-Dibromo-3-chloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:			•						
Chlorotoluene   ND			-						
Chlorotoluene			-						
ND	-Chlorotoluene	ND	ug/L	1.00	1				
ND	I-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	106-43-4	
Dibromomethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         74-95-3           1,2-Dichlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         95-50-1           1,3-Dichlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         541-73-1           1,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         106-46-7           Dichlorodifluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-71-8           Dichlorofluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-43-4           1,1-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-34-3           1,2-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49         07/09/20 04:49 <td>,2-Dibromo-3-chloropropane</td> <td>ND</td> <td>ug/L</td> <td>5.00</td> <td>1</td> <td>07/09/20 04:49</td> <td>07/09/20 04:49</td> <td>96-12-8</td> <td>CC</td>	,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 04:49	07/09/20 04:49	96-12-8	CC
3-Dichlorobenzene   ND	,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	106-93-4	
3-Dichlorobenzene   ND	Dibromomethane	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	74-95-3	
,4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         106-46-7           Dichlorodifluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-71-8           Dichlorofluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-43-4           ,1-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-34-3           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         107-06-2           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           vis-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-59-2           rans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-60-5           ,2-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         78-87-	,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	95-50-1	
y.4-Dichlorobenzene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         106-46-7           Dichlorodifluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-71-8           Dichlorofluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-43-4           1,1-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-34-3           1,2-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         107-06-2           1,1-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           cis-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-59-2           rans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-60-5           ,2-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         78	,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	541-73-1	
Dichlorodifluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-71-8           Dichlorofluoromethane         ND         ug/L         5.00         1         07/09/20 04:49         07/09/20 04:49         75-43-4           ,1-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-34-3           ,2-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         107-06-2           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           vis-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           rans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-60-5           ,2-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         78-87-5           ,1-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         563-58-6	,4-Dichlorobenzene	ND		1.00	1	07/09/20 04:49	07/09/20 04:49	106-46-7	
Dichlorofluoromethane         ND         ug/L         5.00         1         07/09/20 04:49 07/09/20 04:49 07/09/20 04:49 75-34-3           ,1-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49	Dichlorodifluoromethane	ND	•	5.00	1	07/09/20 04:49	07/09/20 04:49	75-71-8	
number of the control of the	Dichlorofluoromethane	ND		5.00	1	07/09/20 04:49	07/09/20 04:49	75-43-4	
,2-Dichloroethane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         107-06-2           ,1-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           is-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-59-2           rans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-60-5           ,2-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         78-87-5           ,1-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         563-58-6           ,3-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         142-28-9			-						
ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         75-35-4           is-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-59-2           rans-1,2-Dichloroethene         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         156-60-5           ,2-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         78-87-5           ,1-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         563-58-6           ,3-Dichloropropane         ND         ug/L         1.00         1         07/09/20 04:49         07/09/20 04:49         142-28-9	•		-						
is-1,2-Dichloroethene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 156-59-2 rans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 156-60-5   ,2-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 78-87-5   ,1-Dichloropropene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 563-58-6   ,3-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 142-28-9	-								
rans-1,2-Dichloroethene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 156-60-5 1,2-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 78-87-5 1,1-Dichloropropene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 563-58-6 1,3-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 142-28-9	,		•						
I,2-Dichloropropane     ND     ug/L     1.00     1     07/09/20 04:49     07/09/20 04:49     78-87-5       I,1-Dichloropropene     ND     ug/L     1.00     1     07/09/20 04:49     07/09/20 04:49     563-58-6       I,3-Dichloropropane     ND     ug/L     1.00     1     07/09/20 04:49     07/09/20 04:49     142-28-9	•								
,1-Dichloropropene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 563-58-6 ,3-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 142-28-9	·		-						
,3-Dichloropropane ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 142-28-9			-						
			-						
sis-1,3-Dichloropropene ND ug/L 1.00 1 07/09/20 04:49 07/09/20 04:49 10061-01-5	1,3-Dichloropropane cis-1,3-Dichloropropene	ND ND	ug/L ug/L		1 1				

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (17-20)	Lab ID: 105	23520013	Collected: 07/01/2	20 17:05	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
, ,	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1		07/09/20 04:49		
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1		07/09/20 04:49		
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 04:49	07/09/20 04:49	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 04:49		
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 04:49	07/09/20 04:49	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 04:49		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 04:49	07/09/20 04:49	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1		07/09/20 04:49		
Naphthalene	ND	ug/L	5.00	1		07/09/20 04:49		CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 04:49			
Styrene	ND	ug/L	1.00	1		07/09/20 04:49		
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 04:49		
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 04:49		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 04:49			
Tetrachloroethene	ND	ug/L	1.00	1		07/09/20 04:49		
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 04:49		CC
Foluene	ND	ug/L	1.00	1		07/09/20 04:49		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 04:49		
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 04:49		
1,1,1-Trichloroethane	ND	ug/L	1.00	1		07/09/20 04:49		
1,1,2-Trichloroethane	ND	ug/L	1.00	1		07/09/20 04:49		
Frichloroethene	ND	ug/L	1.00	1		07/09/20 04:49		
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 04:49		
I,2,3-Trichloropropane	ND	ug/L	2.50	1		07/09/20 04:49		
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 04:49		
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 04:49		
/inyl chloride	ND ND	ug/L	1.00	1		07/09/20 04:49		
(ylene (Total)	ND ND	ug/L	3.00	1		07/09/20 04:49		
Surrogates	ND	ug/ L	3.00		01,00,20 04.49	01/00/20 04.43	1000-20-7	
Foluene-d8 (S)	110	%	80.0-120	1	07/09/20 04:49	07/09/20 04:49	2037-26-5	
4-Bromofluorobenzene (S)	107	%	77.0-126	1		07/09/20 04:49		
1,2-Dichloroethane-d4 (S)	106	%	70.0-130	1	07/09/20 04:49			



Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Pace Project No.: 10523520								
Sample: GP-46 (30-33)	Lab ID: 1052	23520014	Collected: 07/01/2	0 17:40	Received: 07	7/01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical Meth	od: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/07/20 04:24	07/07/20 16:4	4 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	270E by SIM Prepara	ation Me	thod: EPA Mod.	3510C		
	Pace Analytical	Services -	Minneapolis					
1,4-Dioxane (SIM)	1.4	ug/L	0.24	1	07/02/20 13:08	07/10/20 17:5	8 123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	43	%.	30-125	1	07/02/20 13:08	07/10/20 17:5	8	
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	thod: 82	260D			
10/1 (00/mo) 02002	Pace National		iooz i iopaialionini					
Acetone	ND	ug/L	50.0	1	07/09/20 05:08	07/09/20 05:0	8 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/09/20 05:08			
Benzene	ND	ug/L	1.00	1	07/09/20 05:08			
Bromobenzene	ND ND	•	1.00	1	07/09/20 05:08			
		ug/L						
Bromochloromethane	ND	ug/L	1.00	1	07/09/20 05:08			
Bromodichloromethane	ND	ug/L	1.00	1	07/09/20 05:08			
Bromoform	ND	ug/L	1.00	1	07/09/20 05:08			
Bromomethane	ND	ug/L	5.00	1	07/09/20 05:08			
n-Butylbenzene	ND	ug/L	1.00	1	07/09/20 05:08			
sec-Butylbenzene	ND	ug/L	1.00	1	07/09/20 05:08			
ert-Butylbenzene	ND	ug/L	1.00	1	07/09/20 05:08			
Carbon tetrachloride	ND	ug/L	1.00	1	07/09/20 05:08			
Chlorobenzene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 108-90-7	
Dibromochloromethane	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 124-48-1	
Chloroethane	ND	ug/L	5.00	1	07/09/20 05:08	07/09/20 05:0	8 75-00-3	
Chloroform	ND	ug/L	5.00	1	07/09/20 05:08	07/09/20 05:0	8 67-66-3	
Chloromethane	ND	ug/L	2.50	1	07/09/20 05:08	07/09/20 05:0	8 74-87-3	
2-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 95-49-8	
4-Chlorotoluene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/09/20 05:08	07/09/20 05:0	8 96-12-8	CC
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 106-93-4	
Dibromomethane	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:08			
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:08			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/09/20 05:08			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 05:08			
1,1-Dichloroethane	ND	ug/L	1.00	1	07/09/20 05:08			
,2-Dichloroethane	ND	ug/L	1.00	1	07/09/20 05:08			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/09/20 05:08			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 05:08			
trans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/09/20 05:08			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 05:08			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/09/20 05:08			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/09/20 05:08			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:0	8 10061-01-5	

## **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (30-33)	Lab ID: 105	23520014	Collected: 07/01/2	20 17:40	Received: 07	7/01/20 18:55 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	ethod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1		07/09/20 05:08		
2-Butanone (MEK)	ND	ug/L	10.0	1		07/09/20 05:08		CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 05:08		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 05:08	07/09/20 05:08	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 05:08	07/09/20 05:08	91-20-3	CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 05:08	07/09/20 05:08	100-42-5	
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 05:08		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 05:08		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1		07/09/20 05:08		
Tetrachloroethene	ND	ug/L	1.00	1		07/09/20 05:08		
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 05:08		CC
Toluene	1.15	ug/L	1.00	1		07/09/20 05:08		
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 05:08		
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1		07/09/20 05:08		
I,1,1-Trichloroethane	ND	ug/L	1.00	1		07/09/20 05:08		
I,1,2-Trichloroethane	ND	ug/L	1.00	1		07/09/20 05:08		
Frichloroethene	ND	ug/L	1.00	1		07/09/20 05:08		
Trichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 05:08		
1,2,3-Trichloropropane	ND	ug/L	2.50	1		07/09/20 05:08		
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 05:08		
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 05:08		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 05:08		
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 05:08		
Surrogates	110	ug/ L	3.00	•	31,00,20 00.00	0.700/20 00.00	1300 20 1	
Toluene-d8 (S)	111	%	80.0-120	1	07/09/20 05:08	07/09/20 05:08	2037-26-5	
4-Bromofluorobenzene (S)	108	%	77.0-126	1		07/09/20 05:08		
1,2-Dichloroethane-d4 (S)	112	%	70.0-130	1	07/09/20 05:08			



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/21/2020 11:45 AM

Parameters         Results         Units         Report Limit         DF           6010D MET ICP, Lab Filtered         Analytical Method: EPA 6010D         Preparation Method: Pace Analytical Services - Minneapolis           Lead, Dissolved         ND         ug/L         10.0         1           8270E MSSV 14 Dioxane By SIM         Analytical Method: EPA 8270E by SIM Preparation Method: Services - Minneapolis         ND         ug/L         0.25         1           1,4-Dioxane (SIM)         ND         ug/L         0.25         1           Surrogates         1,4-Dioxane-d8 (S)         41         %.         30-125         1           VOA (GC/MS) 8260D         Analytical Method: EPA 8260D         Preparation Method: Pace National - Mt. Juliet           Acetone         ND         ug/L         50.0         1           Allyl chloride         ND         ug/L         50.0         1           Benzene         ND         ug/L         1.00         1           Bromobenzene         ND         ug/L         1.00         1           Bromobenzene         ND         ug/L         1.00         1           Bromodichloromethane         ND         ug/L         1.00         1           Bromodichloromethane         ND	EPA 3010A  07/07/20 04:24 07/07/20 16:47 7439-92-1  Method: EPA Mod. 3510C  07/02/20 13:08 07/10/20 18:19 123-91-1  07/02/20 13:08 07/10/20 18:19  : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1  07/09/20 05:28 07/09/20 05:28 107-05-1  07/09/20 05:28 07/09/20 05:28 71-43-2  07/09/20 05:28 07/09/20 05:28 108-86-1  07/09/20 05:28 07/09/20 05:28 74-97-5  07/09/20 05:28 07/09/20 05:28 75-27-4  07/09/20 05:28 07/09/20 05:28 75-25-2  07/09/20 05:28 07/09/20 05:28 74-83-9  07/09/20 05:28 07/09/20 05:28 104-51-8  07/09/20 05:28 07/09/20 05:28 135-98-8
Pace Analytical Services - Minneapolis	07/07/20 04:24 07/07/20 16:47 7439-92-1  Method: EPA Mod. 3510C  07/02/20 13:08 07/10/20 18:19 123-91-1  07/02/20 13:08 07/10/20 18:19  : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1  07/09/20 05:28 07/09/20 05:28 107-05-1  07/09/20 05:28 07/09/20 05:28 71-43-2  07/09/20 05:28 07/09/20 05:28 108-86-1  07/09/20 05:28 07/09/20 05:28 74-97-5  07/09/20 05:28 07/09/20 05:28 75-27-4  07/09/20 05:28 07/09/20 05:28 75-25-2  07/09/20 05:28 07/09/20 05:28 74-83-9  07/09/20 05:28 07/09/20 05:28 104-51-8  07/09/20 05:28 07/09/20 05:28 135-98-8
Acedon	Method: EPA Mod. 3510C  07/02/20 13:08 07/10/20 18:19 123-91-1  07/02/20 13:08 07/10/20 18:19  : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1  07/09/20 05:28 07/09/20 05:28 107-05-1  07/09/20 05:28 07/09/20 05:28 71-43-2  07/09/20 05:28 07/09/20 05:28 108-86-1  07/09/20 05:28 07/09/20 05:28 74-97-5  07/09/20 05:28 07/09/20 05:28 75-27-4  07/09/20 05:28 07/09/20 05:28 75-25-2  07/09/20 05:28 07/09/20 05:28 74-83-9  07/09/20 05:28 07/09/20 05:28 104-51-8  07/09/20 05:28 07/09/20 05:28 135-98-8
Analytical Method: EPA 8270E by SIM   Preparation Method: Pace Analytical Services - Minneapolis     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: Pace National - Mt. Juliet     Analytical Method: EPA 8260D   Preparation Method: Pace National - Mt. Juliet     Analytical Method: Pace National - Mt.	Method: EPA Mod. 3510C  07/02/20 13:08 07/10/20 18:19 123-91-1  07/02/20 13:08 07/10/20 18:19  : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1  07/09/20 05:28 07/09/20 05:28 107-05-1  07/09/20 05:28 07/09/20 05:28 71-43-2  07/09/20 05:28 07/09/20 05:28 108-86-1  07/09/20 05:28 07/09/20 05:28 74-97-5  07/09/20 05:28 07/09/20 05:28 75-27-4  07/09/20 05:28 07/09/20 05:28 75-25-2  07/09/20 05:28 07/09/20 05:28 74-83-9  07/09/20 05:28 07/09/20 05:28 104-51-8  07/09/20 05:28 07/09/20 05:28 135-98-8
Pace Analytical Services - Minneapolis	07/02/20 13:08 07/10/20 18:19 123-91-1 07/02/20 13:08 07/10/20 18:19 : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1 07/09/20 05:28 07/09/20 05:28 107-05-1 07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
A-Dioxane-d8 (S)	07/02/20 13:08 07/10/20 18:19 : 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1 07/09/20 05:28 07/09/20 05:28 107-05-1 07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
A-Dioxane-d8 (S)	: 8260D  07/09/20 05:28 07/09/20 05:28 67-64-1 07/09/20 05:28 07/09/20 05:28 107-05-1 07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
Pace National - Mt. Juliet	07/09/20 05:28 07/09/20 05:28 67-64-1 07/09/20 05:28 07/09/20 05:28 107-05-1 07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
ND	07/09/20 05:28 07/09/20 05:28 107-05-1 07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
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Senzene   ND	07/09/20 05:28 07/09/20 05:28 71-43-2 07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
Bromobenzene         ND         ug/L         1.00         1           Bromochloromethane         ND         ug/L         1.00         1           Bromodichloromethane         ND         ug/L         1.00         1           Bromoform         ND         ug/L         1.00         1           Bromomethane         ND	07/09/20 05:28 07/09/20 05:28 108-86-1 07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
Stromochloromethane   ND	07/09/20 05:28 07/09/20 05:28 74-97-5 07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
Stromodichloromethane   ND	07/09/20 05:28 07/09/20 05:28 75-27-4 07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
ND	07/09/20 05:28 07/09/20 05:28 75-25-2 07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
ND	07/09/20 05:28 07/09/20 05:28 74-83-9 07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
ND	07/09/20 05:28 07/09/20 05:28 104-51-8 07/09/20 05:28 07/09/20 05:28 135-98-8
ND	07/09/20 05:28 07/09/20 05:28 135-98-8
Sert-Butylbenzene   ND   ug/L   1.00   1	
darbon tetrachloride         ND         ug/L         1.00         1           chlorobenzene         ND         ug/L         1.00         1           chlorobenzene         ND         ug/L         1.00         1           chlorobenzene         ND         ug/L         5.00         1           chloroform         ND         ug/L         5.00         1           chloromethane         ND         ug/L         2.50         1           chlorotoluene         ND         ug/L         1.00         1           c-Chlorotoluene         ND         ug/L         1.00         1           c-Chloro	07/00/00 05:00 07/00/00 05:00 00 00 0
chlorobenzene         ND         ug/L         1.00         1           bibromochloromethane         ND         ug/L         1.00         1           chloroethane         ND         ug/L         5.00         1           chloroform         ND         ug/L         5.00         1           chloromethane         ND         ug/L         2.50         1           chlorotoluene         ND         ug/L         1.00         1           c-Chlorotoluene         ND         ug/L         1.00         1           c-Chlor	07/09/20 05:28 07/09/20 05:28 98-06-6
bibromochloromethane         ND         ug/L         1.00         1           chlorofethane         ND         ug/L         5.00         1           chloroform         ND         ug/L         5.00         1           chloromethane         ND         ug/L         2.50         1           chlorotoluene         ND         ug/L         1.00         1           c-Chlorotoluene         ND         ug/L         1.00         1           c-Ch	07/09/20 05:28 07/09/20 05:28 56-23-5
chloroethane         ND         ug/L         5.00         1           chloroform         ND         ug/L         5.00         1           chloroform         ND         ug/L         2.50         1           chloromethane         ND         ug/L         1.00         1           c-Chlorotoluene         ND         ug/L         1.00         1           c-Chlorotoluene         ND         ug/L         5.00         1           c-Chloromo-3-chloropropane         ND         ug/L         5.00         1           c-Dibromoethane (EDB)         ND         ug/L         1.00         1           pibromomethane         ND         ug/L         1.00         1           c-Dichlorobenzene         ND         ug/L         1.00         1           c-Dichlorobenzene         ND         ug/L         1.00         1           c-Dichlorodifluoromethane         ND         ug/L         1.00         1	07/09/20 05:28 07/09/20 05:28 108-90-7
Chloroform         ND         ug/L         5.00         1           Chloromethane         ND         ug/L         2.50         1           Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         5.00         1           -2-Dibromo-3-chloropropane         ND         ug/L         1.00         1           -2-Dibromoethane (EDB)         ND         ug/L         1.00         1           Dibromomethane         ND         ug/L         1.00         1           -2-Dichlorobenzene         ND         ug/L         1.00         1           -3-Dichlorobenzene         ND         ug/L         1.00         1           -4-Dichlorobenzene         ND         ug/L         1.00         1           -6-Dichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 124-48-1
Chloromethane         ND         ug/L         2.50         1           -Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         1.00         1           -2-Dibromo-3-chloropropane         ND         ug/L         5.00         1           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1           Dibromomethane         ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           bichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 75-00-3
C-Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         1.00         1           -2-Dibromo-3-chloropropane         ND         ug/L         5.00         1           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1           pibromomethane         ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           bichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 67-66-3
Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         1.00         1           -Chlorotoluene         ND         ug/L         5.00         1           ,2-Dibromo-3-chloropropane         ND         ug/L         1.00         1           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1           pibromomethane         ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           pichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 74-87-3
-Chlorotoluene         ND         ug/L         1.00         1           ,2-Dibromo-3-chloropropane         ND         ug/L         5.00         1           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1           ibiromomethane         ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           bichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 95-49-8
,2-Dibromo-3-chloropropane         ND         ug/L         5.00         1           ,2-Dibromoethane (EDB)         ND         ug/L         1.00         1           bibromomethane         ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           pichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 106-43-4
,2-Dibromoethane (EDB)       ND       ug/L       1.00       1         ,2-Dibromomethane       ND       ug/L       1.00       1         ,2-Dichlorobenzene       ND       ug/L       1.00       1         ,3-Dichlorobenzene       ND       ug/L       1.00       1         ,4-Dichlorobenzene       ND       ug/L       1.00       1         pichlorodifluoromethane       ND       ug/L       5.00       1	07/09/20 05:28 07/09/20 05:28 96-12-8 CC
ND         ug/L         1.00         1           ,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           vichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 106-93-4
,2-Dichlorobenzene         ND         ug/L         1.00         1           ,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           pichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 74-95-3
,3-Dichlorobenzene         ND         ug/L         1.00         1           ,4-Dichlorobenzene         ND         ug/L         1.00         1           pichlorodifluoromethane         ND         ug/L         5.00         1	07/09/20 05:28 07/09/20 05:28 95-50-1
,4-Dichlorobenzene ND ug/L 1.00 1 Dichlorodifluoromethane ND ug/L 5.00 1	07/09/20 05:28 07/09/20 05:28 541-73-1
Dichlorodifluoromethane ND ug/L 5.00 1	07/09/20 05:28 07/09/20 05:28 106-46-7
	07/09/20 05:28 07/09/20 05:28 75-71-8
vichlorofluoromethane ND ug/L 5.00 1	07/09/20 05:28 07/09/20 05:28 75-43-4
,1-Dichloroethane ND ug/L 1.00 1	07/09/20 05:28 07/09/20 05:28 75-34-3
•	
,2-Dichloroethane ND ug/L 1.00 1	07/09/20 05:28 07/09/20 05:28 107-06-2 07/09/20 05:28 07/09/20 05:28 75-35-4
,1-Dichloroethene ND ug/L 1.00 1	U//U9/ZU U3:Z0 U//U9/ZU U3:Z8 / 5-35-4
is-1,2-Dichloroethene ND ug/L 1.00 1	
rans-1,2-Dichloroethene ND ug/L 1.00 1	07/09/20 05:28 07/09/20 05:28 156-59-2
,2-Dichloropropane ND ug/L 1.00 1	07/09/20 05:28 07/09/20 05:28 156-59-2 07/09/20 05:28 07/09/20 05:28 156-60-5
,1-Dichloropropene ND ug/L 1.00 1	07/09/20 05:28 07/09/20 05:28 156-59-2 07/09/20 05:28 07/09/20 05:28 156-60-5 07/09/20 05:28 07/09/20 05:28 78-87-5
1,3-Dichloropropane         ND         ug/L         1.00         1           sis-1,3-Dichloropropene         ND         ug/L         1.00         1	07/09/20 05:28 07/09/20 05:28 156-59-2 07/09/20 05:28 07/09/20 05:28 156-60-5



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: RINSATE-070120-B	Lab ID: 10523520015		Collected: 07/01/20 17:55		Received: 07	/01/20 18:55 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	260D Preparation Me	thod: 82	260D			
	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	87-68-3	
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	98-82-8	
o-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	99-87-6	
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 05:28	07/09/20 05:28	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 05:28		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 05:28	07/09/20 05:28	108-10-1	CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/09/20 05:28	07/09/20 05:28	91-20-3	CC
- n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	103-65-1	
Styrene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	100-42-5	
,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	630-20-6	
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1		07/09/20 05:28		
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1		07/09/20 05:28		CC
Foluene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	120-82-1	
I,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	79-00-5	
Frichloroethene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	79-01-6	
Frichlorofluoromethane	ND	ug/L	5.00	1		07/09/20 05:28		
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 05:28	07/09/20 05:28	96-18-4	
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 05:28	07/09/20 05:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1		07/09/20 05:28		
/inyl chloride	ND	ug/L	1.00	1		07/09/20 05:28		
(ylene (Total)	ND	ug/L	3.00	1		07/09/20 05:28		
Surrogates		3			= •		-	
Toluene-d8 (S)	111	%	80.0-120	1	07/09/20 05:28	07/09/20 05:28	2037-26-5	
1-Bromofluorobenzene (S)	104	%	77.0-126	1	07/09/20 05:28	07/09/20 05:28	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70.0-130	1	07/09/20 05:28	07/09/20 05:28	17060-07-0	



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (38-40)	Lab ID:	10523520016	Collected: 07/0	1/20 18:30	Received: 07	7/01/20 18:55	Matrix: Water			
Parameters	Results	Units	Report Lim	t DF	Prepared	Analyzed	CAS No.	Qua		
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	010D Preparation	Method: E	EPA 3010A					
	Pace Analy	tical Services -	Minneapolis							
Lead, Dissolved	NE	ug/L	10	.0 1	07/07/20 04:24	07/07/20 16:50	6 7439-92-1			
8270E MSSV 14 Dioxane By SIM	Analytical	Method: FPA 82	770F by SIM Prei	paration Me	ethod: FPA Mod	3510C				
ozroz moov 14 bioxane by omi	Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
1,4-Dioxane (SIM)	NE	ug/L	0.2	24 1	07/02/20 13:08	07/10/20 18:40	0 123-91-1			
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	40	%.	30-12	25 1	07/02/20 13:08	07/10/20 18:40	0			
VOA (GC/MS) 8260D	Analytical	Method: FPA 82	260D Preparation	Method: 8	260D					
VOA (CO/MO) 02002	Analytical Method: EPA 8260D Preparation Method: 8260D Pace National - Mt. Juliet									
Acetone	NE	ug/L	50	.0 1	07/00/20 05:49	07/09/20 05:4	9 67 64 1			
	NE	ū				07/09/20 05:4				
Allyl chloride		0	5.0							
Benzene	NE	0	1.0			07/09/20 05:4				
Bromobenzene	NE	0	1.0			07/09/20 05:48				
Bromochloromethane	NE	0	1.0			07/09/20 05:4				
Bromodichloromethane	NE	0	1.0			07/09/20 05:4				
Bromoform	NE	0	1.0			07/09/20 05:48				
Bromomethane	NE	0	5.0	00 1	07/09/20 05:48	07/09/20 05:4	8 74-83-9			
n-Butylbenzene	NE	) ug/L	1.0	00 1		07/09/20 05:4				
sec-Butylbenzene	NE	) ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 135-98-8			
ert-Butylbenzene	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 98-06-6			
Carbon tetrachloride	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 56-23-5			
Chlorobenzene	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 108-90-7			
Dibromochloromethane	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 124-48-1			
Chloroethane	NE	_	5.0	00 1	07/09/20 05:48	07/09/20 05:48	8 75-00-3			
Chloroform	NE	_	5.0	00 1	07/09/20 05:48	07/09/20 05:48	8 67-66-3			
Chloromethane	NE	•	2.5	50 1	07/09/20 05:48	07/09/20 05:48	8 74-87-3			
2-Chlorotoluene	NE	•	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 95-49-8			
4-Chlorotoluene	NE	_	1.0	00 1		07/09/20 05:48				
1,2-Dibromo-3-chloropropane	NE	_	5.0			07/09/20 05:48		CC		
1,2-Dibromoethane (EDB)	NE	_	1.0			07/09/20 05:4		00		
Dibromomethane	NE	0	1.0			07/09/20 05:4				
1.2-Dichlorobenzene	NE	J	1.0			07/09/20 05:4				
1,3-Dichlorobenzene	NE	_	1.0			07/09/20 05:4				
1,4-Dichlorobenzene	NE	U	1.0			07/09/20 05:48				
Dichlorodifluoromethane		_								
	NE	J	5.0			07/09/20 05:48				
Dichlorofluoromethane	NE	ū	5.0			07/09/20 05:48				
I,1-Dichloroethane	NE	J	1.0			07/09/20 05:4				
1,2-Dichloroethane	NE	ū	1.0			07/09/20 05:48				
1,1-Dichloroethene	NE	ū	1.0			07/09/20 05:4				
cis-1,2-Dichloroethene	NE	J	1.0			07/09/20 05:48				
trans-1,2-Dichloroethene	NE	ug/L	1.0	00 1		07/09/20 05:48				
1,2-Dichloropropane	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 78-87-5			
1,1-Dichloropropene	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 563-58-6			
1,3-Dichloropropane	NE	ug/L	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 142-28-9			
cis-1,3-Dichloropropene	NE	_	1.0	00 1	07/09/20 05:48	07/09/20 05:48	8 10061-01-5			



## **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: GP-46 (38-40)	Lab ID: 10523520016 Collected: 07/01/20 18:30 Received: 07/01/20 18:55 Matrix: Wa					Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Meth	od: EPA 82	260D Preparation Me	ethod: 82	260D			
,	Pace National	- Mt. Juliet						
trans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/09/20 05:48	07/09/20 05:48	10061-02-6	
2,2-Dichloropropane	ND	ug/L	1.00	1	07/09/20 05:48	07/09/20 05:48	594-20-7	
Ethylbenzene	ND	ug/L	1.00	1	07/09/20 05:48	07/09/20 05:48	100-41-4	
Diethyl ether (Ethyl ether)	ND	ug/L	1.00	1	07/09/20 05:48	07/09/20 05:48	60-29-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.00	1	07/09/20 05:48			
sopropylbenzene (Cumene)	ND	ug/L	1.00	1	07/09/20 05:48	07/09/20 05:48	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.00	1	07/09/20 05:48			
2-Butanone (MEK)	ND	ug/L	10.0	1	07/09/20 05:48	07/09/20 05:48	78-93-3	CC
Methylene Chloride	ND	ug/L	5.00	1		07/09/20 05:48		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1	07/09/20 05:48			CC
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/09/20 05:48			
Naphthalene	ND	ug/L	5.00	1	07/09/20 05:48			CC
n-Propylbenzene	ND	ug/L	1.00	1	07/09/20 05:48			
Styrene	ND	ug/L	1.00	1	07/09/20 05:48			
I,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 05:48			
,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/09/20 05:48			
,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/09/20 05:48			
etrachloroethene	ND	ug/L	1.00	1	07/09/20 05:48			
Tetrahydrofuran	ND	ug/L	5.00	1	07/09/20 05:48			CC
Toluene	ND	ug/L	1.00	1	07/09/20 05:48			
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:48			
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/09/20 05:48			
I,1,1-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:48			
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/09/20 05:48			
Frichloroethene	ND	ug/L	1.00	1		07/09/20 05:48		
Frichlorofluoromethane	ND	ug/L	5.00	1	07/09/20 05:48			
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/09/20 05:48			
,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 05:48			
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/09/20 05:48			
/inyl chloride	ND	ug/L	1.00	1	07/09/20 05:48			
Kylene (Total)	ND ND	ug/L ug/L	3.00	1	07/09/20 05:48			
Surrogates	IND	ug/L	3.00		01/03/20 03.40	01/03/20 03.40	1000-20-7	
Foluene-d8 (S)	112	%	80.0-120	1	07/09/20 05:48	07/09/20 05:48	2037-26-5	
4-Bromofluorobenzene (S)	106	%	77.0-126	1	07/09/20 05:48			
1,2-Dichloroethane-d4 (S)	111	%	70.0-130	1	07/09/20 05:48			



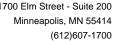
# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: TRIP BLANK	Lab ID: 105	23520017	Collected: 07/01/2	20 00:00	Received: 07	//01/20 18:55	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
VOA (GC/MS) 8260D	Analytical Met	nod: EPA 82	260D Preparation M	ethod: 82	260D			
	Pace National	- Mt. Juliet						
Acetone	ND	ug/L	50.0	1	07/17/20 14:27	07/17/20 14:2	7 67-64-1	
Allyl chloride	ND	ug/L	5.00	1	07/17/20 14:27			
Benzene	ND	ug/L	1.00	1	07/17/20 14:27			
Bromobenzene	ND	ug/L	1.00	1	07/17/20 14:27			
Bromochloromethane	ND	ug/L	1.00	1	07/17/20 14:27			
Bromodichloromethane	ND	ug/L	1.00	1	07/17/20 14:27			
Bromoform	ND	ug/L	1.00	1	07/17/20 14:27			
Bromomethane	ND	ug/L	5.00	1	07/17/20 14:27			
n-Butylbenzene	ND	ug/L	1.00	1	07/17/20 14:27			
sec-Butylbenzene	ND	ug/L	1.00	1	07/17/20 14:27			
tert-Butylbenzene	ND	ug/L	1.00	1	07/17/20 14:27			
Carbon tetrachloride	ND	ug/L	1.00	1	07/17/20 14:27			
Chlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27			
Dibromochloromethane	ND	ug/L	1.00	1	07/17/20 14:27			
Chloroethane	ND	ug/L	5.00	1	07/17/20 14:27			
Chloroform	ND	ug/L	5.00	1	07/17/20 14:27			
Chloromethane	ND	ug/L	2.50	1	07/17/20 14:27			
2-Chlorotoluene	ND	ug/L	1.00	1	07/17/20 14:27			
1-Chlorotoluene	ND	ug/L	1.00	1	07/17/20 14:27			
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	1	07/17/20 14:27			
1,2-Dibromoethane (EDB)	ND	ug/L	1.00	1	07/17/20 14:27			
Dibromomethane	ND	ug/L	1.00	1	07/17/20 14:27			
1,2-Dichlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27			
1,3-Dichlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27			
1,4-Dichlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27			
Dichlorodifluoromethane	ND	ug/L	5.00	1	07/17/20 14:27			
Dichlorofluoromethane	ND	ug/L	5.00	1	07/17/20 14:27			CC
1,1-Dichloroethane	ND	ug/L	1.00	1	07/17/20 14:27			00
1,2-Dichloroethane	ND	ug/L	1.00	1	07/17/20 14:27			
1,1-Dichloroethene	ND	ug/L	1.00	1	07/17/20 14:27			
cis-1,2-Dichloroethene	ND	ug/L	1.00	1	07/17/20 14:27			
trans-1,2-Dichloroethene	ND	ug/L	1.00	1	07/17/20 14:27			
1,2-Dichloropropane	ND	ug/L	1.00	1	07/17/20 14:27			
1,1-Dichloropropene	ND	ug/L	1.00	1	07/17/20 14:27			
1,3-Dichloropropane	ND	ug/L	1.00	1	07/17/20 14:27			
cis-1,3-Dichloropropene	ND	ug/L	1.00	1	07/17/20 14:27			
rans-1,3-Dichloropropene	ND	ug/L	1.00	1	07/17/20 14:27			
2,2-Dichloropropane	ND	ug/L	1.00	1	07/17/20 14:27			
Ethylbenzene	ND	ug/L	1.00	1	07/17/20 14:27			
Diethyl ether (Ethyl ether)	ND ND	ug/L ug/L	1.00	1	07/17/20 14:27			
Hexachloro-1,3-butadiene	ND ND	ug/L ug/L	1.00	1	07/17/20 14:27			
sopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.00	1	07/17/20 14:27			
	ND ND		1.00	1	07/17/20 14:27			
o-Isopropyltoluene 2-Butanone (MEK)	ND ND	ug/L		1	07/17/20 14:27			
2-Dutatione (IVIEN)		ug/L ug/L	10.0	1	07/17/20 14:27			
Methylene Chloride	ND		5.00					





# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Sample: TRIP BLANK	Lab ID: 1052	23520017	Collected: 07/01/2	20 00:00	Received: 07	/01/20 18:55 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Meth	nod: EPA 82	60D Preparation Me	ethod: 8	260D			
	Pace National	- Mt. Juliet						
Methyl-tert-butyl ether	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	1634-04-4	
Naphthalene	ND	ug/L	5.00	1	07/17/20 14:27	07/17/20 14:27	91-20-3	
n-Propylbenzene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	103-65-1	
Styrene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	79-34-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	76-13-1	
Tetrachloroethene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	127-18-4	
Tetrahydrofuran	ND	ug/L	5.00	1	07/17/20 14:27	07/17/20 14:27	109-99-9	
Toluene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	79-00-5	
Trichloroethene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.00	1	07/17/20 14:27	07/17/20 14:27	75-69-4	CC
1,2,3-Trichloropropane	ND	ug/L	2.50	1	07/17/20 14:27	07/17/20 14:27	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	108-67-8	
/inyl chloride	ND	ug/L	1.00	1	07/17/20 14:27	07/17/20 14:27	75-01-4	
(Ylene (Total)	ND	ug/L	3.00	1	07/17/20 14:27	07/17/20 14:27	1330-20-7	
Surrogates		-						
Toluene-d8 (S)	103	%	80.0-120	1	07/17/20 14:27	07/17/20 14:27	2037-26-5	
1-Bromofluorobenzene (S)	97.7	%	77.0-126	1	07/17/20 14:27	07/17/20 14:27	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70.0-130	1	07/17/20 14:27	07/17/20 14:27	17060-07-0	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Lab ID: 10523520018 Sample: TRIP BLANK Collected: 07/01/20 00:00 Received: 07/01/20 18:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual VOA (GC/MS) 8260D Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet ND 1.25 25 07/01/20 00:00 07/15/20 05:17 67-64-1 Acetone mg/kg Allyl chloride ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 107-05-1 Benzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 71-43-2 ND 0.0250 07/01/20 00:00 07/15/20 05:17 108-86-1 Bromobenzene mg/kg 25 0.0250 07/01/20 00:00 07/15/20 05:17 74-97-5 Bromochloromethane ND mg/kg 25 Bromodichloromethane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 75-27-4 Bromoform ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 75-25-2 mg/kg 07/01/20 00:00 07/15/20 05:17 74-83-9 Bromomethane NΠ 0.125 25 mg/kg ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 104-51-8 n-Butylbenzene mg/kg sec-Butylbenzene ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 135-98-8 mg/kg tert-Butylbenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 98-06-6 Carbon tetrachloride ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 56-23-5 Chlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 108-90-7 Dibromochloromethane ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 124-48-1 mg/kg Chloroethane ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 75-00-3 07/01/20 00:00 07/15/20 05:17 67-66-3 Chloroform ND mg/kg 0.125 25 Chloromethane ND mg/kg 0.0625 25 07/01/20 00:00 07/15/20 05:17 74-87-3 2-Chlorotoluene ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 95-49-8 mg/kg 4-Chlorotoluene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 106-43-4 1,2-Dibromoethane (EDB) ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 106-93-4 1,2-Dibromo-3-chloropropane ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 96-12-8 0.0250 07/01/20 00:00 07/15/20 05:17 ND 25 Dibromomethane mg/kg 74-95-3 1,2-Dichlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 95-50-1 1.3-Dichlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 541-73-1 1,4-Dichlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 106-46-7 Dichlorodifluoromethane ND 0.125 25 07/01/20 00:00 07/15/20 05:17 mg/kg 75-71-8 Dichlorofluoromethane ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 75-43-4 1,1-Dichloroethane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 75-34-3 ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 107-06-2 1.2-Dichloroethane mg/kg ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 75-35-4 1,1-Dichloroethene mg/kg ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 156-59-2 cis-1,2-Dichloroethene mg/kg ND 25 07/01/20 00:00 07/15/20 05:17 156-60-5 0.0250 trans-1,2-Dichloroethene mg/kg ND 25 07/01/20 00:00 07/15/20 05:17 78-87-5 1,2-Dichloropropane mg/kg 0.0250 1,3-Dichloropropane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 142-28-9 2,2-Dichloropropane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 594-20-7 1,1-Dichloropropene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 563-58-6 ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 10061-01-5 cis-1,3-Dichloropropene mg/kg trans-1,3-Dichloropropene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 10061-02-6 mg/kg ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 100-41-4 Ethylbenzene Diethyl ether (Ethyl ether) ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 60-29-7 Hexachloro-1,3-butadiene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 87-68-3 ND Isopropylbenzene (Cumene) mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 98-82-8 ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 99-87-6 p-Isopropyltoluene mg/kg 2-Butanone (MEK) ND mg/kg 0.250 25 07/01/20 00:00 07/15/20 05:17 78-93-3 07/01/20 00:00 07/15/20 05:17 75-09-2 Methylene Chloride ND mg/kg 0.125 25



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Lab ID: 10523520018 Collected: 07/01/20 00:00 Sample: TRIP BLANK Received: 07/01/20 18:55 Matrix: Solid Results reported on a "wet-weight" basis **Parameters** Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: EPA 8260D Preparation Method: 5035A VOA (GC/MS) 8260D Pace National - Mt. Juliet 4-Methyl-2-pentanone (MIBK) ND 0.250 25 07/01/20 00:00 07/15/20 05:17 108-10-1 mg/kg Methyl-tert-butyl ether ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 1634-04-4 Naphthalene ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 91-20-3 n-Propylbenzene ND 0.0250 07/01/20 00:00 07/15/20 05:17 103-65-1 mg/kg 25 ND 0.0250 07/01/20 00:00 07/15/20 05:17 100-42-5 Styrene mg/kg 25 1,1,1,2-Tetrachloroethane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 630-20-6 1,1,2,2-Tetrachloroethane ND 0.0250 25 07/01/20 00:00 07/15/20 05:17 79-34-5 mg/kg ND 0.0250 07/01/20 00:00 07/15/20 05:17 127-18-4 Tetrachloroethene 25 mg/kg ND 0.125 25 07/01/20 00:00 07/15/20 05:17 109-99-9 Tetrahydrofuran mg/kg Toluene ND mg/kg 0.125 25 07/01/20 00:00 07/15/20 05:17 108-88-3 1,2,3-Trichlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 87-61-6 1,2,4-Trichlorobenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 120-82-1 1,2,4-Trimethylbenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 95-63-6 1,3,5-Trimethylbenzene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 108-67-8 1,1,1-Trichloroethane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 71-55-6 07/01/20 00:00 07/15/20 05:17 79-00-5 1,1,2-Trichloroethane ND mg/kg 0.0250 25 Trichloroethene ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 79-01-6 Trichlorofluoromethane ND mg/kg 25 07/01/20 00:00 07/15/20 05:17 75-69-4 0.125 1.1.2-Trichlorotrifluoroethane ND mg/kg 0.0250 25 07/01/20 00:00 07/15/20 05:17 76-13-1 ND 07/01/20 00:00 07/15/20 05:17 96-18-4 1,2,3-Trichloropropane mg/kg 0.0625 25 07/01/20 00:00 07/15/20 05:17 75-01-4 ND Vinyl chloride mg/kg 0.0250 25 ND 25 07/01/20 00:00 07/15/20 05:17 1330-20-7 Xylene (Total) mg/kg 0.0750 1,4-Dioxane (p-Dioxane) ND mg/kg 2.50 25 07/01/20 00:00 07/15/20 05:17 123-91-1 Surrogates 1,2-Dichloroethane-d4 (S) 114 % 70.0-130 25 07/01/20 00:00 07/15/20 05:17 17060-07-0 97.4 75.0-131 07/01/20 00:00 07/15/20 05:17 2037-26-5 Toluene-d8 (S) % 25 4-Bromofluorobenzene (S) 101 % 67.0-138 25 07/01/20 00:00 07/15/20 05:17 460-00-4



**QUALITY CONTROL DATA** 

2606-0017 Water Gremlin SRI Project:

Pace Project No.: 10523520

Lead

Date: 07/21/2020 11:45 AM

QC Batch: 684881 QC Batch Method: **EPA 3050B**  Analysis Method: EPA 6010D Analysis Description:

6010D Solids

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523520003, 10523520008

METHOD BLANK:

Matrix: Solid

Associated Lab Samples: 10523520003, 10523520008

> Blank Reporting

Qualifiers Parameter Units Result Limit Analyzed

Lead ND 0.47 07/07/20 13:22 mg/kg

LABORATORY CONTROL SAMPLE: 3663722

> Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units 49 49.5 101 80-120 mg/kg

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3663723 3663724

> MSD MS

10523684001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits 4.6 20 Lead mg/kg 49.4 51.9 48.9 50.7 89 89 75-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALITY CONTROL DATA

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

QC Batch: 684956 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011,

10523520012, 10523520013, 10523520014, 10523520015, 10523520016

METHOD BLANK: 3663948 Matrix: Water

Associated Lab Samples: 10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011,

10523520012, 10523520013, 10523520014, 10523520015, 10523520016

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/07/20 15:36

LABORATORY CONTROL SAMPLE: 3663949

LCS LCS % Rec Spike Parameter Units Result % Rec Limits Qualifiers Conc. Lead, Dissolved ug/L 1000 989 99 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3663950 3663951

MS MSD

10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Lead, Dissolved ND 20 1000 1000 967 1000 97 100 75-125 ug/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

QC Batch: 685245 Analysis Method: **ASTM D2974** 

Analysis Description:

Dry Weight / %M by ASTM D2974

Laboratory:

Pace Analytical Services - Minneapolis

10523520003, 10523520008 Associated Lab Samples:

**ASTM D2974** 

SAMPLE DUPLICATE: 3664970

Parameter

10523513010 Result

Dup

Max

Qualifiers

Percent Moisture

QC Batch Method:

Units %

8.7

Result 8.7

0

30 N2

SAMPLE DUPLICATE: 3665361

Date: 07/21/2020 11:45 AM

10523695008 Result

Dup Result

**RPD** 

RPD

Max **RPD** 

RPD

Qualifiers

Parameter Percent Moisture

Units %

51.6

52.0

30 N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



2606-0017 Water Gremlin SRI Project:

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

QC Batch: 1506087 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

> Laboratory: Pace National - Mt. Juliet

> > Reporting

10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011, Associated Lab Samples:

 $10523520012,\, 10523520013,\, 10523520014,\, 10523520015,\, 10523520016$ 

METHOD BLANK: R3548628-3 Matrix: Water

10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011, Associated Lab Samples:

 $10523520012,\,10523520013,\,10523520014,\,10523520015,\,10523520016$ Blank

Damanatan	11.26	Blank	Reporting	A b d	0
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/08/20 21:47	
Benzene	ug/L	ND	1.00	07/08/20 21:47	
Bromobenzene	ug/L	ND	1.00	07/08/20 21:47	
Bromodichloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Bromoform	ug/L	ND	1.00	07/08/20 21:47	
Bromomethane	ug/L	ND	5.00	07/08/20 21:47	
n-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
sec-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
tert-Butylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Carbon tetrachloride	ug/L	ND	1.00	07/08/20 21:47	
Chlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dibromochloromethane	ug/L	ND	1.00	07/08/20 21:47	
Chloroethane	ug/L	ND	5.00	07/08/20 21:47	
Chloroform	ug/L	ND	5.00	07/08/20 21:47	
Chloromethane	ug/L	ND	2.50	07/08/20 21:47	
2-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
4-Chlorotoluene	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/08/20 21:47	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/08/20 21:47	
Dibromomethane	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
Dichlorodifluoromethane	ug/L	ND	5.00	07/08/20 21:47	
Dichlorofluoromethane	ug/L	ND	5.00	07/08/20 21:47	
1,1-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/08/20 21:47	
1,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
1,1-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
1,3-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/08/20 21:47	
2,2-Dichloropropane	ug/L	ND	1.00	07/08/20 21:47	
Ethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/08/20 21:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

METHOD BLANK: R3548628-3 Matrix: Water

Associated Lab Samples: 10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011,

10523520012, 10523520013, 10523520014, 10523520015, 10523520016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	ND ND	1.00	07/08/20 21:47	
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/08/20 21:47	
p-Isopropyltoluene	ug/L	ND	1.00	07/08/20 21:47	
2-Butanone (MEK)	ug/L	ND	10.0	07/08/20 21:47	
Methylene Chloride	ug/L	ND	5.00	07/08/20 21:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/08/20 21:47	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/08/20 21:47	
Naphthalene	ug/L	ND	5.00	07/08/20 21:47	
n-Propylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Styrene	ug/L	ND	1.00	07/08/20 21:47	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/08/20 21:47	
Tetrachloroethene	ug/L	ND	1.00	07/08/20 21:47	
Tetrahydrofuran	ug/L	ND	5.00	07/08/20 21:47	
Toluene	ug/L	ND	1.00	07/08/20 21:47	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/08/20 21:47	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/08/20 21:47	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/08/20 21:47	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/08/20 21:47	
Trichloroethene	ug/L	ND	1.00	07/08/20 21:47	
Trichlorofluoromethane	ug/L	ND	5.00	07/08/20 21:47	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/08/20 21:47	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/08/20 21:47	
Vinyl chloride	ug/L	ND	1.00	07/08/20 21:47	
Xylene (Total)	ug/L	ND	3.00	07/08/20 21:47	
Allyl chloride	ug/L	ND	5.00	07/08/20 21:47	
Toluene-d8 (S)	%	105	80.0-120	07/08/20 21:47	
4-Bromofluorobenzene (S)	%	104	77.0-126	07/08/20 21:47	
1,2-Dichloroethane-d4 (S)	%	110	70.0-130	07/08/20 21:47	

LABORATORY CONTROL SAMPLE	& LCSD: R3548	628-1	R:	3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	21.3	20.6	85.2	82.4	19.0-160	3.34	27	
Benzene	ug/L	5.00	5.08	4.64	102	92.8	70.0-123	9.05	20	
Bromobenzene	ug/L	5.00	4.41	4.42	88.2	88.4	73.0-121	0.227	20	
Bromodichloromethane	ug/L	5.00	5.27	4.78	105	95.6	75.0-120	9.75	20	
Bromochloromethane	ug/L	5.00	6.03	5.59	121	112	76.0-122	7.57	20	
Bromoform	ug/L	5.00	4.66	4.98	93.2	99.6	68.0-132	6.64	20	
Bromomethane	ug/L	5.00	7.85	7.96	157	159	10.0-160	1.39	25	
n-Butylbenzene	ug/L	5.00	4.29	4.32	85.8	86.4	73.0-125	0.697	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE &	& LCSD: R3548			3548628-2						
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifier
sec-Butylbenzene	ug/L	5.00	4.44	4.38	88.8	87.6	75.0-125	1.36	20	
tert-Butylbenzene	ug/L	5.00	4.70	4.70	94.0	94.0	76.0-124	0.00	20	
Carbon tetrachloride	ug/L	5.00	5.48	5.03	110	101	68.0-126	8.56	20	
Chlorobenzene	ug/L	5.00	4.90	5.13	98.0	103	80.0-121	4.59	20	
Dibromochloromethane	ug/L	5.00	4.68	5.17	93.6	103	77.0-125	9.95	20	
Chloroethane	ug/L	5.00	5.63	4.82	113	96.4	47.0-150	15.5	20	
Chloroform	ug/L	5.00	5.05	4.76	101		73.0-120	5.91	20	
Chloromethane	ug/L	5.00	5.38	5.16	108	103	41.0-142	4.17	20	
2-Chlorotoluene	ug/L	5.00	4.52	4.65	90.4	93.0	76.0-123	2.84	20	
4-Chlorotoluene	ug/L	5.00	4.67	4.66	93.4	93.2	75.0-122	0.214	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	3.88	4.17	77.6	83.4	58.0-134	7.20	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	4.82	4.86	96.4	97.2	80.0-122	0.826	20	
Dibromomethane	ug/L	5.00	5.17	4.82	103	96.4	80.0-120	7.01	20	
1,2-Dichlorobenzene	ug/L	5.00	4.60	4.52	92.0	90.4	79.0-121	1.75	20	
1,3-Dichlorobenzene	ug/L	5.00	4.80	5.02	96.0	100	79.0-121	4.48	20	
1,4-Dichlorobenzene	ug/L	5.00	4.75	4.75	95.0	95.0	79.0-120	0.00	20	
Dichlorodifluoromethane	ug/L	5.00	4.82	4.40	96.4	88.0	51.0-149	9.11	20	
Dichlorofluoromethane	ug/L	5.00	5.32	4.91	106	98.2	65.0-133	8.02	20	
1,1-Dichloroethane	ug/L	5.00	4.44	4.36	88.8		70.0-136	1.82	20	
1,2-Dichloroethane	-	5.00	5.14	5.06	103	101	70.0-128	1.62	20	
1,2-Dichloroethane	ug/L	5.00	5.14	4.91	103	98.2	70.0-126	9.51	20	
	ug/L						73.0-124			
cis-1,2-Dichloroethene	ug/L	5.00	5.01	5.01	100 107	100		0.00	20	
rans-1,2-Dichloroethene	ug/L	5.00	5.35	5.18		104	73.0-120	3.23	20	
1,2-Dichloropropane	ug/L	5.00	4.10	4.59	82.0	91.8	77.0-125	11.3	20	
1,1-Dichloropropene	ug/L	5.00	5.27	4.79	105	95.8	74.0-126	9.54	20	
1,3-Dichloropropane	ug/L	5.00	4.80	4.89	96.0	97.8	80.0-120	1.86	20	
cis-1,3-Dichloropropene	ug/L	5.00	5.18	4.48	104	89.6	80.0-123	14.5	20	
rans-1,3-Dichloropropene	ug/L	5.00	4.37	4.60	87.4	92.0	78.0-124	5.13	20	
2,2-Dichloropropane	ug/L	5.00	5.31	5.25	106	105	58.0-130	1.14	20	
Ethylbenzene	ug/L	5.00	4.63	4.73	92.6	94.6	79.0-123	2.14	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	4.43	4.13	88.6	82.6	66.0-130	7.01	20	
Hexachloro-1,3-butadiene	ug/L	5.00	5.24	5.15	105	103	54.0-138	1.73	20	
Isopropylbenzene (Cumene)	ug/L	5.00	4.80	4.72	96.0	94.4	76.0-127	1.68	20	
p-Isopropyltoluene	ug/L	5.00	4.60	4.67	92.0	93.4	76.0-125	1.51	20	
2-Butanone (MEK)	ug/L	25.0	19.4	19.1	77.6	76.4	44.0-160	1.56	20	
Methylene Chloride	ug/L	5.00	4.72	4.61	94.4	92.2	67.0-120	2.36	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	18.8	19.4	75.2		68.0-142	3.14	20	
Methyl-tert-butyl ether	ug/L	5.00	5.17	4.83	103	96.6	68.0-125	6.80	20	
Naphthalene	ug/L	5.00	3.98	3.89	79.6	77.8	54.0-135	2.29	20	
n-Propylbenzene	ug/L	5.00	4.38	4.46	87.6		77.0-124	1.81	20	
Styrene	ug/L	5.00	4.18	4.41	83.6		73.0-130	5.36	20	
1,1,1,2-Tetrachloroethane	ug/L	5.00	5.08	5.24	102		75.0-125	3.10	20	
1,1,2,2-Tetrachloroethane	ug/L	5.00	4.34	4.37	86.8	87.4	65.0-130	0.689	20	
Tetrachloroethene	ug/L	5.00	5.40	5.10	108	102	72.0-132	5.71	20	
Tetrahydrofuran	ug/L	5.00	3.68	3.28	73.6	65.6	41.0-146	11.5	20	
Toluene	ug/L	5.00	4.62	4.76	92.4	95.2	79.0-120	2.99	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	5.04	4.59	101	91.8	69.0-132	9.35	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE	& LCSD: R3548	3628-1	R3	3548628-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,3-Trichlorobenzene	ug/L	5.00	4.32	4.56	86.4	91.2	50.0-138	5.41	20	
1,2,4-Trichlorobenzene	ug/L	5.00	4.22	4.38	84.4	87.6	57.0-137	3.72	20	
1,1,1-Trichloroethane	ug/L	5.00	5.28	5.02	106	100	73.0-124	5.05	20	
1,1,2-Trichloroethane	ug/L	5.00	4.86	5.01	97.2	100	80.0-120	3.04	20	
Trichloroethene	ug/L	5.00	5.44	5.11	109	102	78.0-124	6.26	20	
Trichlorofluoromethane	ug/L	5.00	5.23	5.22	105	104	59.0-147	0.191	20	
1,2,3-Trichloropropane	ug/L	5.00	4.73	4.50	94.6	90.0	73.0-130	4.98	20	
1,2,4-Trimethylbenzene	ug/L	5.00	4.54	4.74	90.8	94.8	76.0-121	4.31	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.59	4.58	91.8	91.6	76.0-122	0.218	20	
Vinyl chloride	ug/L	5.00	4.34	4.12	86.8	82.4	67.0-131	5.20	20	
Xylene (Total)	ug/L	15.0	14.8	14.8	98.7	98.7	79.0-123	0.00	20	
Allyl chloride	ug/L	25.0	25.5	24.5	102	98.0	72.0-128	4.00	20	
Toluene-d8 (S)	%				105	110	80.0-120			
4-Bromofluorobenzene (S)	%				100	109	77.0-126			
1,2-Dichloroethane-d4 (S)	%				106	108	70.0-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

QC Batch: 1510885 Analysis Method: EPA 8260D

QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523520017

METHOD BLANK: R3550563-3 Matrix: Water

Associated Lab Samples: 10523520017

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	50.0	07/17/20 12:54	
Benzene	ug/L	ND	1.00	07/17/20 12:54	
Bromobenzene	ug/L	ND	1.00	07/17/20 12:54	
Bromodichloromethane	ug/L	ND	1.00	07/17/20 12:54	
Bromochloromethane	ug/L	ND	1.00	07/17/20 12:54	
Bromoform	ug/L	ND	1.00	07/17/20 12:54	
Bromomethane	ug/L	ND	5.00	07/17/20 12:54	
n-Butylbenzene	ug/L	ND	1.00	07/17/20 12:54	
sec-Butylbenzene	ug/L	ND	1.00	07/17/20 12:54	
tert-Butylbenzene	ug/L	ND	1.00	07/17/20 12:54	
Carbon tetrachloride	ug/L	ND	1.00	07/17/20 12:54	
Chlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
Dibromochloromethane	ug/L	ND	1.00	07/17/20 12:54	
Chloroethane	ug/L	ND	5.00	07/17/20 12:54	
Chloroform	ug/L	ND	5.00	07/17/20 12:54	
Chloromethane	ug/L	ND	2.50	07/17/20 12:54	
2-Chlorotoluene	ug/L	ND	1.00	07/17/20 12:54	
4-Chlorotoluene	ug/L	ND	1.00	07/17/20 12:54	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.00	07/17/20 12:54	
1,2-Dibromoethane (EDB)	ug/L	ND	1.00	07/17/20 12:54	
Dibromomethane	ug/L	ND	1.00	07/17/20 12:54	
1,2-Dichlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
1,3-Dichlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
1,4-Dichlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
Dichlorodifluoromethane	ug/L	ND	5.00	07/17/20 12:54	
Dichlorofluoromethane	ug/L	ND	5.00	07/17/20 12:54	
1,1-Dichloroethane	ug/L	ND	1.00	07/17/20 12:54	
1,2-Dichloroethane	ug/L	ND	1.00	07/17/20 12:54	
1,1-Dichloroethene	ug/L	ND	1.00	07/17/20 12:54	
cis-1,2-Dichloroethene	ug/L	ND	1.00	07/17/20 12:54	
trans-1,2-Dichloroethene	ug/L	ND	1.00	07/17/20 12:54	
1,2-Dichloropropane	ug/L	ND	1.00	07/17/20 12:54	
1,1-Dichloropropene	ug/L	ND	1.00	07/17/20 12:54	
1,3-Dichloropropane	ug/L	ND	1.00	07/17/20 12:54	
cis-1,3-Dichloropropene	ug/L	ND	1.00	07/17/20 12:54	
trans-1,3-Dichloropropene	ug/L	ND	1.00	07/17/20 12:54	
2,2-Dichloropropane	ug/L	ND	1.00	07/17/20 12:54	
Ethylbenzene	ug/L	ND	1.00	07/17/20 12:54	
Diethyl ether (Ethyl ether)	ug/L	ND	1.00	07/17/20 12:54	
Hexachloro-1,3-butadiene	ug/L	ND	1.00	07/17/20 12:54	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

METHOD BLANK: R3550563-3 Matrix: Water

Associated Lab Samples: 10523520017

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	1.00	07/17/20 12:54	
p-Isopropyltoluene	ug/L	ND	1.00	07/17/20 12:54	
2-Butanone (MEK)	ug/L	ND	10.0	07/17/20 12:54	
Methylene Chloride	ug/L	ND	5.00	07/17/20 12:54	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	07/17/20 12:54	
Methyl-tert-butyl ether	ug/L	ND	1.00	07/17/20 12:54	
Naphthalene	ug/L	ND	5.00	07/17/20 12:54	
n-Propylbenzene	ug/L	ND	1.00	07/17/20 12:54	
Styrene	ug/L	ND	1.00	07/17/20 12:54	
1,1,1,2-Tetrachloroethane	ug/L	ND	1.00	07/17/20 12:54	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.00	07/17/20 12:54	
Tetrachloroethene	ug/L	ND	1.00	07/17/20 12:54	
Tetrahydrofuran	ug/L	ND	5.00	07/17/20 12:54	
Toluene	ug/L	ND	1.00	07/17/20 12:54	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.00	07/17/20 12:54	
1,2,3-Trichlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
1,2,4-Trichlorobenzene	ug/L	ND	1.00	07/17/20 12:54	
1,1,1-Trichloroethane	ug/L	ND	1.00	07/17/20 12:54	
1,1,2-Trichloroethane	ug/L	ND	1.00	07/17/20 12:54	
Trichloroethene	ug/L	ND	1.00	07/17/20 12:54	
Trichlorofluoromethane	ug/L	ND	5.00	07/17/20 12:54	
1,2,3-Trichloropropane	ug/L	ND	2.50	07/17/20 12:54	
1,2,4-Trimethylbenzene	ug/L	ND	1.00	07/17/20 12:54	
1,3,5-Trimethylbenzene	ug/L	ND	1.00	07/17/20 12:54	
Vinyl chloride	ug/L	ND	1.00	07/17/20 12:54	
Xylene (Total)	ug/L	ND	3.00	07/17/20 12:54	
Allyl chloride	ug/L	ND	5.00	07/17/20 12:54	
Toluene-d8 (S)	%	102	80.0-120	07/17/20 12:54	
4-Bromofluorobenzene (S)	%	97.6	77.0-126	07/17/20 12:54	
1,2-Dichloroethane-d4 (S)	%	99	70.0-130	07/17/20 12:54	

LABORATORY CONTROL SAMPLE &	LCSD: R3550	563-1	R	3550563-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	ug/L	25.0	31.4	29.5	126	118	19.0-160	6.24	27	
Benzene	ug/L	5.00	4.82	4.71	96.4	94.2	70.0-123	2.31	20	
Bromobenzene	ug/L	5.00	4.70	4.79	94.0	95.8	73.0-121	1.90	20	
Bromodichloromethane	ug/L	5.00	5.10	5.07	102	101	75.0-120	0.590	20	
Bromochloromethane	ug/L	5.00	5.58	5.20	112	104	76.0-122	7.05	20	
Bromoform	ug/L	5.00	5.09	5.13	102	103	68.0-132	0.783	20	
Bromomethane	ug/L	5.00	4.08	4.23	81.6	84.6	10.0-160	3.61	25	
n-Butylbenzene	ug/L	5.00	4.72	4.68	94.4	93.6	73.0-125	0.851	20	
sec-Butylbenzene	ug/L	5.00	4.60	4.70	92.0	94.0	75.0-125	2.15	20	
tert-Butylbenzene	ug/L	5.00	4.72	4.86	94.4	97.2	76.0-124	2.92	20	

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE	& LCSD: R3550			3550563-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifie
Carbon tetrachloride	ug/L	5.00	4.61	4.43	92.2	88.6	68.0-126	3.98	20	
Chlorobenzene	ug/L	5.00	4.99	5.19	99.8	104	80.0-121	3.93	20	
Dibromochloromethane	ug/L	5.00	5.56	5.61	111	112	77.0-125	0.895	20	
Chloroethane	ug/L	5.00	4.26	4.25	85.2	85.0	47.0-150	0.235	20	
Chloroform	ug/L	5.00	4.81	4.69	96.2	93.8	73.0-120	2.53	20	
Chloromethane	ug/L	5.00	4.21	4.17	84.2	83.4	41.0-142	0.955	20	
2-Chlorotoluene	ug/L	5.00	4.64	4.67	92.8	93.4	76.0-123	0.644	20	
1-Chlorotoluene	ug/L	5.00	4.85	4.94	97.0	98.8	75.0-122	1.84	20	
1,2-Dibromo-3-chloropropane	ug/L	5.00	5.59	5.77	112	115	58.0-134	3.17	20	
1,2-Dibromoethane (EDB)	ug/L	5.00	5.48	5.51	110	110	80.0-122	0.546	20	
Dibromomethane	ug/L	5.00	4.92	5.03	98.4	101	80.0-120	2.21	20	
1,2-Dichlorobenzene	ug/L	5.00	5.09	5.04	102	101	79.0-121	0.987	20	
I,3-Dichlorobenzene	ug/L	5.00	5.00	5.01	100	100	79.0-120	0.200	20	
I,4-Dichlorobenzene	ug/L	5.00	4.99	5.03		101	79.0-120	0.798	20	
Dichlorodifluoromethane	ug/L	5.00	4.28	3.94	85.6	78.8	51.0-149	8.27	20	
Dichlorofluoromethane	ug/L	5.00	3.89	3.96		79.2	65.0-133	1.78	20	
I.1-Dichloroethane	ug/L	5.00	4.74	4.55	94.8	91.0	70.0-126	4.09	20	
.2-Dichloroethane	ug/L	5.00	5.04	4.78		95.6	70.0-128	5.30	20	
,1-Dichloroethene	ug/L	5.00	4.68	4.49		89.8	71.0-124	4.14	20	
sis-1,2-Dichloroethene	ug/L	5.00	4.96	4.77	99.2		73.0-120	3.91	20	
rans-1,2-Dichloroethene	ug/L	5.00	4.82	4.67		93.4	73.0-120	3.16	20	
,2-Dichloropropane	ug/L	5.00	4.65	4.62			77.0-125	0.647	20	
,1-Dichloropropene	ug/L	5.00	4.63	4.47	92.6	89.4	74.0-126	3.52	20	
,3-Dichloropropane	ug/L	5.00	5.31	5.41	106	108	80.0-120	1.87	20	
cis-1,3-Dichloropropene	ug/L	5.00	5.10	4.96				2.78	20	
rans-1,3-Dichloropropene	ug/L	5.00	5.44	5.50		110	78.0-124	1.10	20	
2,2-Dichloropropane	ug/L	5.00	4.71	4.53		90.6	58.0-130	3.90	20	
Ethylbenzene	ug/L	5.00	5.05	5.09		102		0.789	20	
Diethyl ether (Ethyl ether)	ug/L	5.00	5.27	5.09		102	66.0-130	4.86	20	
Hexachloro-1,3-butadiene	ug/L ug/L	5.00	5.06	5.02		108	54.0-138	6.87	20	
sopropylbenzene (Cumene)	_	5.00	5.00	5.42			76.0-127	3.29	20	
o-Isopropyltoluene	ug/L ug/L	5.00	4.86	5.26	97.2		76.0-12 <i>1</i> 76.0-125	3.29	20	
2-Butanone (MEK)	Ū						44.0-160			
` ,	ug/L	25.0	28.9	28.5		114		1.39	20	
Methylene Chloride	ug/L	5.00	5.03	4.82		96.4	67.0-120	4.26	20	
4-Methyl-2-pentanone (MIBK)	ug/L	25.0	27.7	28.8		115	68.0-142	3.89	20	
Methyl-tert-butyl ether	ug/L	5.00	5.36	5.29		106	68.0-125	1.31	20	
Naphthalene	ug/L	5.00	5.94	6.06			54.0-135	2.00	20	
n-Propylbenzene	ug/L	5.00	4.51	4.48	90.2		77.0-124	0.667	20	
Styrene	ug/L	5.00	5.09	5.49			73.0-130	7.56	20	
I,1,1,2-Tetrachloroethane	ug/L	5.00	5.33	5.53			75.0-125	3.68	20	
I,1,2,2-Tetrachloroethane	ug/L	5.00	5.29	5.36			65.0-130	1.31	20	
Tetrachloroethene	ug/L	5.00	4.94	5.06			72.0-132	2.40	20	
Tetrahydrofuran	ug/L	5.00	6.22	5.68			41.0-146	9.08	20	
Toluene	ug/L	5.00	5.04	5.18			79.0-120	2.74	20	
1,1,2-Trichlorotrifluoroethane	ug/L	5.00	4.09	4.13			69.0-132	0.973	20	
1,2,3-Trichlorobenzene	ug/L	5.00	5.92	6.00			50.0-138	1.34	20	
1,2,4-Trichlorobenzene	ug/L	5.00	5.78	5.94	116	119	57.0-137	2.73	20	

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# **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE	& LCSD: R3550	563-1	R	3550563-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	5.00	4.66	4.50	93.2	90.0	73.0-124	3.49	20	
1,1,2-Trichloroethane	ug/L	5.00	5.30	5.47	106	109	80.0-120	3.16	20	
Trichloroethene	ug/L	5.00	4.87	4.64	97.4	92.8	78.0-124	4.84	20	
Trichlorofluoromethane	ug/L	5.00	3.40	3.29	68.0	65.8	59.0-147	3.29	20	
1,2,3-Trichloropropane	ug/L	5.00	5.64	5.53	113	111	73.0-130	1.97	20	
1,2,4-Trimethylbenzene	ug/L	5.00	5.08	5.11	102	102	76.0-121	0.589	20	
1,3,5-Trimethylbenzene	ug/L	5.00	4.80	4.92	96.0	98.4	76.0-122	2.47	20	
Vinyl chloride	ug/L	5.00	4.05	4.04	81.0	80.8	67.0-131	0.247	20	
Xylene (Total)	ug/L	15.0	15.5	15.8	103	105	79.0-123	1.92	20	
Allyl chloride	ug/L	25.0	24.2	24.3	96.8	97.2	72.0-128	0.412	20	
Toluene-d8 (S)	%				101	106	80.0-120			
4-Bromofluorobenzene (S)	%				103	106	77.0-126			
1,2-Dichloroethane-d4 (S)	%				95.8	96.7	70.0-130			

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#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

QC Batch: 1508974 Analysis Method: EPA 8260D

QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523520004, 10523520009, 10523520018

METHOD BLANK: R3549576-5 Matrix: Solid

Associated Lab Samples: 10523520004, 10523520009, 10523520018

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Acetone	mg/kg	ND	0.0500	07/15/20 01:44	
Benzene	mg/kg	ND	0.00100	07/15/20 01:44	
Bromobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Bromodichloromethane	mg/kg	ND	0.00100	07/15/20 01:44	
Bromochloromethane	mg/kg	ND	0.00100	07/15/20 01:44	
Bromoform	mg/kg	ND	0.00100	07/15/20 01:44	
Bromomethane	mg/kg	ND	0.00500	07/15/20 01:44	
n-Butylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
sec-Butylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
tert-Butylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Carbon tetrachloride	mg/kg	ND	0.00100	07/15/20 01:44	
Chlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Dibromochloromethane	mg/kg	ND	0.00100	07/15/20 01:44	
Chloroethane	mg/kg	ND	0.00500	07/15/20 01:44	
Chloroform	mg/kg	ND	0.00500	07/15/20 01:44	
Chloromethane	mg/kg	ND	0.00250	07/15/20 01:44	
2-Chlorotoluene	mg/kg	ND	0.00100	07/15/20 01:44	
4-Chlorotoluene	mg/kg	ND	0.00100	07/15/20 01:44	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	07/15/20 01:44	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	07/15/20 01:44	
Dibromomethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Dichlorodifluoromethane	mg/kg	ND	0.00500	07/15/20 01:44	
Dichlorofluoromethane	mg/kg	ND	0.00500	07/15/20 01:44	
1,1-Dichloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,2-Dichloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,1-Dichloroethene	mg/kg	ND	0.00100	07/15/20 01:44	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	07/15/20 01:44	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	07/15/20 01:44	
1,2-Dichloropropane	mg/kg	ND	0.00100	07/15/20 01:44	
1,1-Dichloropropene	mg/kg	ND	0.00100	07/15/20 01:44	
1,3-Dichloropropane	mg/kg	ND	0.00100	07/15/20 01:44	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	07/15/20 01:44	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	07/15/20 01:44	
2,2-Dichloropropane	mg/kg	ND	0.00100	07/15/20 01:44	
Ethylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	07/15/20 01:44	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	07/15/20 01:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

METHOD BLANK: R3549576-5 Matrix: Solid

Associated Lab Samples: 10523520004, 10523520009, 10523520018

	, ,	Blank	Reporting		0 ""
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	07/15/20 01:44	
p-Isopropyltoluene	mg/kg	ND	0.00100	07/15/20 01:44	
2-Butanone (MEK)	mg/kg	ND	0.0100	07/15/20 01:44	
Methylene Chloride	mg/kg	ND	0.00500	07/15/20 01:44	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	07/15/20 01:44	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	07/15/20 01:44	
Naphthalene	mg/kg	ND	0.00500	07/15/20 01:44	
n-Propylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Styrene	mg/kg	ND	0.00100	07/15/20 01:44	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
Tetrachloroethene	mg/kg	ND	0.00100	07/15/20 01:44	
Tetrahydrofuran	mg/kg	ND	0.00500	07/15/20 01:44	
Toluene	mg/kg	ND	0.00500	07/15/20 01:44	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	07/15/20 01:44	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	07/15/20 01:44	
Trichloroethene	mg/kg	ND	0.00100	07/15/20 01:44	
Trichlorofluoromethane	mg/kg	ND	0.00500	07/15/20 01:44	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	07/15/20 01:44	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	07/15/20 01:44	
Vinyl chloride	mg/kg	ND	0.00100	07/15/20 01:44	
Xylene (Total)	mg/kg	ND	0.00300	07/15/20 01:44	
Allyl chloride	mg/kg	ND	0.00500	07/15/20 01:44	
1,4-Dioxane (p-Dioxane)	mg/kg	ND	0.100	07/15/20 01:44	
Toluene-d8 (S)	%	96.8	75.0-131	07/15/20 01:44	
4-Bromofluorobenzene (S)	%	98.1	67.0-138	07/15/20 01:44	
1,2-Dichloroethane-d4 (S)	%	99.1	70.0-130	07/15/20 01:44	

LABORATORY CONTROL SAMPLE	& LCSD: R35495	576-1	R	3549576-2			•		•	
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Acetone	mg/kg	0.125	0.102	0.109	81.6	87.2	10.0-160	6.64	31	
Benzene	mg/kg	0.0250	0.0235	0.0253	94.0	101	70.0-123	7.38	20	
Bromobenzene	mg/kg	0.0250	0.0221	0.0243	88.4	97.2	73.0-121	9.48	20	
Bromodichloromethane	mg/kg	0.0250	0.0255	0.0275	102	110	73.0-121	7.55	20	
Bromochloromethane	mg/kg	0.0250	0.0238	0.0254	95.2	102	77.0-128	6.50	20	
Bromoform	mg/kg	0.0250	0.0269	0.0273	108	109	64.0-132	1.48	20	
Bromomethane	mg/kg	0.0250	0.0278	0.0312	111	125	56.0-147	11.5	20	
n-Butylbenzene	mg/kg	0.0250	0.0231	0.0258	92.4	103	68.0-135	11.0	20	
sec-Butylbenzene	mg/kg	0.0250	0.0214	0.0242	85.6	96.8	74.0-130	12.3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE &	LCSD: R3549			3549576-2						
_		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifier
ert-Butylbenzene	mg/kg	0.0250	0.0223	0.0251	89.2	100	75.0-127	11.8	20	
Carbon tetrachloride	mg/kg	0.0250	0.0267	0.0298	107	119	66.0-128	11.0	20	
Chlorobenzene	mg/kg	0.0250	0.0228	0.0247	91.2	98.8	76.0-128	8.00	20	
Dibromochloromethane	mg/kg	0.0250	0.0247	0.0263	98.8	105	74.0-127	6.27	20	
Chloroethane	mg/kg	0.0250	0.0274	0.0293	110	117	61.0-134	6.70	20	
Chloroform	mg/kg	0.0250	0.0248	0.0269	99.2	108	72.0-123	8.12	20	
Chloromethane	mg/kg	0.0250	0.0202	0.0226	80.8	90.4	51.0-138	11.2	20	
2-Chlorotoluene	mg/kg	0.0250	0.0233	0.0260	93.2	104	75.0-124	11.0	20	
4-Chlorotoluene	mg/kg	0.0250	0.0238	0.0258	95.2	103	75.0-124	8.06	20	
1,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0221	0.0232	88.4	92.8	59.0-130	4.86	20	
1,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0234	0.0238	93.6	95.2	74.0-128	1.69	20	
Dibromomethane	mg/kg	0.0250	0.0249	0.0264	99.6	106	75.0-122	5.85	20	
1,2-Dichlorobenzene	mg/kg	0.0250	0.0212	0.0232	84.8	92.8	76.0-124	9.01	20	
1,3-Dichlorobenzene	mg/kg	0.0250	0.0211	0.0229	84.4	91.6	76.0-125	8.18	20	
1,4-Dichlorobenzene	mg/kg	0.0250	0.0211	0.0236	87.6	94.4	77.0-121	7.47	20	
Dichlorodifluoromethane	mg/kg	0.0250	0.0276	0.0299	110	120	43.0-156	8.00	20	
Dichlorofluoromethane	mg/kg	0.0250	0.0256	0.0281	102	112		9.31	20	
1,1-Dichloroethane	mg/kg	0.0250	0.0237	0.0261	94.8	104	70.0-127	9.64	20	
1,2-Dichloroethane		0.0250	0.0254	0.0261	102	104	65.0-131	3.86	20	
	mg/kg	0.0250	0.0254	0.0264	102	111	65.0-131	9.45	20	
1,1-Dichloroethene	mg/kg	0.0250	0.0232	0.0277	96.4		73.0-131	9.45	20	
cis-1,2-Dichloroethene rans-1,2-Dichloroethene	mg/kg					106				
•	mg/kg	0.0250	0.0255	0.0278	102	111	71.0-125	8.63	20	
1,2-Dichloropropane	mg/kg	0.0250	0.0216	0.0232	86.4	92.8	74.0-125	7.14	20	
I,1-Dichloropropene	mg/kg	0.0250	0.0236	0.0266	94.4	106	73.0-125	12.0	20	
1,3-Dichloropropane	mg/kg	0.0250	0.0231	0.0239	92.4	95.6	80.0-125	3.40	20	
cis-1,3-Dichloropropene	mg/kg	0.0250	0.0241	0.0262	96.4	105	76.0-127	8.35	20	
rans-1,3-Dichloropropene	mg/kg	0.0250	0.0251	0.0259	100		73.0-127	3.14	20	
2,2-Dichloropropane	mg/kg	0.0250	0.0267	0.0304	107	122	59.0-135	13.0	20	
Ethylbenzene	mg/kg	0.0250	0.0222	0.0248	88.8	99.2	74.0-126	11.1	20	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0225	0.0240	90.0	96.0	64.0-137	6.45	20	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0261	0.0298	104	119	57.0-150	13.2	20	
sopropylbenzene (Cumene)	mg/kg	0.0250	0.0230	0.0254	92.0	102	72.0-127	9.92	20	
o-Isopropyltoluene	mg/kg	0.0250	0.0224	0.0252	89.6	101	72.0-133	11.8	20	
2-Butanone (MEK)	mg/kg	0.125	0.0977	0.0982	78.2	78.6	30.0-160	0.510	24	
Methylene Chloride	mg/kg	0.0250	0.0235	0.0243	94.0	97.2	68.0-123	3.35	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.0998	0.101	79.8	80.8	56.0-143	1.20	20	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0250	0.0265	100	106	66.0-132	5.83	20	
Naphthalene	mg/kg	0.0250	0.0220	0.0234	88.0	93.6	59.0-130	6.17	20	
n-Propylbenzene	mg/kg	0.0250	0.0231	0.0258	92.4	103	74.0-126	11.0	20	
Styrene	mg/kg	0.0250	0.0224	0.0244	89.6	97.6	72.0-127	8.55	20	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0239	0.0254	95.6		74.0-129	6.09	20	
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0219	0.0224	87.6	89.6	68.0-128	2.26	20	
Tetrachloroethene	mg/kg	0.0250	0.0225	0.0247	90.0		70.0-136	9.32	20	
Tetrahydrofuran	mg/kg	0.0250	0.0187	0.0197	74.8	78.8	37.0-146	5.21	24	
Toluene	mg/kg	0.0250	0.0225	0.0242	90.0		75.0-121	7.28	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0238	0.0273	95.2	109	61.0-139	13.7	20	
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0232	0.0259	92.8		59.0-139	11.0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

LABORATORY CONTROL SAMPLE	& LCSD: R35495	576-1	R	3549576-2						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0228	0.0259	91.2	104	62.0-137	12.7	20	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0278	0.0316	111	126	69.0-126	12.8	20	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0237	0.0237	94.8	94.8	78.0-123	0.00	20	
Trichloroethene	mg/kg	0.0250	0.0238	0.0262	95.2	105	76.0-126	9.60	20	
Trichlorofluoromethane	mg/kg	0.0250	0.0279	0.0309	112	124	61.0-142	10.2	20	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0228	0.0241	91.2	96.4	67.0-129	5.54	20	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0219	0.0246	87.6	98.4	70.0-126	11.6	20	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0222	0.0244	88.8	97.6	73.0-127	9.44	20	
Vinyl chloride	mg/kg	0.0250	0.0246	0.0268	98.4	107	63.0-134	8.56	20	
Xylene (Total)	mg/kg	0.0750	0.0674	0.0737	89.9	98.3	72.0-127	8.93	20	
Allyl chloride	mg/kg	0.125	0.119	0.128	95.2	102	70.0-131	7.29	20	
Toluene-d8 (S)	%				96.9	97.2	75.0-131			
4-Bromofluorobenzene (S)	%				98.6	98.3	67.0-138			
1,2-Dichloroethane-d4 (S)	%				112	110	70.0-130			

LABORATORY CONTROL SAMPLE:	R3549576-4					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg	1.00	1.10	110	18.0-160	
Toluene-d8 (S)	%			94.1	75.0-131	
4-Bromofluorobenzene (S)	%			97.5	67.0-138	
1,2-Dichloroethane-d4 (S)	%			99.7	70.0-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

QC Batch: 684741 Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011,

10523520012, 10523520013, 10523520014, 10523520015, 10523520016

METHOD BLANK: 3662525 Matrix: Water

Associated Lab Samples: 10523520001, 10523520002, 10523520005, 10523520006, 10523520007, 10523520010, 10523520011,

10523520012, 10523520013, 10523520014, 10523520015, 10523520016

Blank Reporting Parameter Units Qualifiers Result I imit Analyzed 1,4-Dioxane (SIM) ug/L ND 0.25 07/10/20 12:06 40 07/10/20 12:06 1,4-Dioxane-d8 (S) %. 30-125

LABORATORY CONTROL SAMPLE: 3662526 LCS LCS % Rec Spike Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (SIM) 10 9.6 96 32-128 ug/L 1,4-Dioxane-d8 (S) 30 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3662527 3662528 MS MSD 10523518003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L 1.1 10.5 12.5 10.6 13.4 91 99 32-130 23 30 1,4-Dioxane-d8 (S) %. 44 47 30-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALITY CONTROL DATA**

SM 2540G

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

QC Batch: 1506840

QC Batch Method: SM 2540 G Analysis Description: Total Solids 2540 G-2011

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10523520004, 10523520009

METHOD BLANK: R3548430-1 Matrix: Solid

Associated Lab Samples: 10523520004, 10523520009

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Analysis Method:

Total Solids % ND 07/10/20 11:14

LABORATORY CONTROL SAMPLE: R3548430-2

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Solids** % 50.0 50.0 100 85.0-115

SAMPLE DUPLICATE: R3548430-3

Date: 07/21/2020 11:45 AM

L1236800-01 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 63.7 **Total Solids** % 0.889 64.3 10

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### SAMPLE QUALIFIERS

Sample: 10523520004

Volatile Organic Compounds (GC/MS) by Method 8260D - Cannot run lower, client sent only MeOH vial.

Sample: 10523520009

Volatile Organic Compounds (GC/MS) by Method 8260D - Cannot run lower, client sent only MeOH vial. [1]

Sample: 10523520010

Volatile Organic Compounds (GC/MS) by Method 8260D - Dilution due to soil in vial. [1]

Sample: 10523520018

Volatile Organic Compounds (GC/MS) by Method 8260D - Cannot run lower, client sent only MeOH vial. [1]

#### **ANALYTE QUALIFIERS**

Date: 07/21/2020 11:45 AM

CC The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The result may be biased.

The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A N2

complete list of accreditations/certifications is available upon request.



# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
0523520003	GP-45 (0-1')	EPA 3050B	684881	EPA 6010D	685046
0523520008	GP-46 (0-1)	EPA 3050B	684881	EPA 6010D	685046
0523520001	GP-44 (24-27)	EPA 3010A	684956	EPA 6010D	685198
0523520002	GP-44 (37-40)	EPA 3010A	684956	EPA 6010D	685198
0523520005	GP-45 (11-14)	EPA 3010A	684956	EPA 6010D	685198
0523520006	GP-45 (29-32)	EPA 3010A	684956	EPA 6010D	685198
0523520007	GP-45 (37-40)	EPA 3010A	684956	EPA 6010D	685198
0523520010	GP-46 (9-12)	EPA 3010A	684956	EPA 6010D	685198
0523520011	RINSATE-070120	EPA 3010A	684956	EPA 6010D	685198
0523520012	DUP070120	EPA 3010A	684956	EPA 6010D	685198
0523520013	GP-46 (17-20)	EPA 3010A	684956	EPA 6010D	685198
0523520014	GP-46 (30-33)	EPA 3010A	684956	EPA 6010D	685198
0523520015	RINSATE-070120-B	EPA 3010A	684956	EPA 6010D	685198
0523520016	GP-46 (38-40)	EPA 3010A	684956	EPA 6010D	685198
0523520003	GP-45 (0-1')	ASTM D2974	685245		
0523520008	GP-46 (0-1)	ASTM D2974	685245		
0523520001	GP-44 (24-27)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520002	GP-44 (37-40)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520005	GP-45 (11-14)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520006	GP-45 (29-32)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520007	GP-45 (37-40)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520010	GP-46 (9-12)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520011	RINSATE-070120	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520012	DUP070120	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520013	GP-46 (17-20)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520014	GP-46 (30-33)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520015	RINSATE-070120-B	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520016	GP-46 (38-40)	EPA Mod. 3510C	684741	EPA 8270E by SIM	685754
0523520001	GP-44 (24-27)	8260D	1506087	EPA 8260D	1506087
0523520002	GP-44 (37-40)	8260D	1506087	EPA 8260D	1506087
0523520005	GP-45 (11-14)	8260D	1506087	EPA 8260D	1506087
0523520006	GP-45 (29-32)	8260D	1506087	EPA 8260D	1506087
0523520007	GP-45 (37-40)	8260D	1506087	EPA 8260D	1506087
0523520010	GP-46 (9-12)	8260D	1506087	EPA 8260D	1506087
0523520011	RINSATE-070120	8260D	1506087	EPA 8260D	1506087
0523520012	DUP070120	8260D	1506087	EPA 8260D	1506087
0523520013	GP-46 (17-20)	8260D	1506087	EPA 8260D	1506087
0523520014	GP-46 (30-33)	8260D	1506087	EPA 8260D	1506087
0523520015	RINSATE-070120-B	8260D	1506087	EPA 8260D	1506087
523520016	GP-46 (38-40)	8260D	1506087	EPA 8260D	1506087
523520017	TRIP BLANK	8260D	1510885	EPA 8260D	1510885
0523520004	GP-45 (11-12')	5035A	1508974	EPA 8260D	1508974
0523520009	GP-46 (9-10)	5035A	1508974	EPA 8260D	1508974
30 <u>2</u> 002000	, ,				
0523520018	TRIP BLANK	5035A	1508974	EPA 8260D	1508974





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10523520

Date: 07/21/2020 11:45 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10523520009	GP-46 (9-10)	SM 2540 G	1506840	SM 2540G	1506840

Face Analytical

CHAIN-OF-CUSTODY

The Chain-of-Custody is a LEGAL DOCU

Section C

Section B

MO#:10523520

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2001005489-LM ω Z 5 2 くろ Pace Project No./ Lab I.D. (N/X) Samples Intaci DRINKING WATER 2001004893 300100K 200 100 4893 SAMPLE CONDITIONS 200 100 4895 2001006860 -3061004 g 2001006860 (N/Y) OTHER 700 i 00 E Sealed Coole Cone/shae Custody Ice (Y/N) GROUND WATER Residual Chlorine (Y/N) Cemp in °C Σ REGULATORY AGENCY RCRA 1845 TIME Requested Analysis Filtered (Y/N) ri! STATE Site Location DATE 7 NPDES ፠ UST 104-10/0X 0106 (20) 303 1300 E 10407 ママス ACCEPTED BY / AFFILIATION <u>×</u>×× メ メメメ 100V ナナナ ナメ Attention: accounting @ wearks, cold -1-DIPKENS Dissolved tesT sisylanAl †n/λ 19HJC Methanol Holamb O<sub>S</sub>S<sub>S</sub>BV Preservatives HOBN 3 HCI M M <sup>€</sup>ON⊢ Сопрапу Nате PRINT Name of SAMPLER: BENYUMM <sup>₽</sup>OS<sup>2</sup>H Manager. Pace Profile #: Pace Quote Reference: Pace Project <u>e</u>. 9 ٥ S S Unpreserved M Address: σ # OF CONTAINERS 5 SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION DATE 1/120 CODY TO: Aaron Berber, Kelly Jawoshi Grewin SRI DATE COLLECTED Report To Shawe Waterwan RELINQUISHED BY / AFFILIATION 2606-00 LT (300 7/11/20 10:30 G 7/1/26 1860 7/11/25 12/45 WT 6 1/1/120 1338 TIME 1/100 1540 2/21 00/1/2 & 7/120 1630 G 7/1120 1800 a -11/10 1840 21.12. 98 COMPOSITE START 21/12 PM20 Holas DATE Holow K cle Required Project Information: <u>ა</u> Sile <u>ر</u> د Den Ho <u>S</u> 39YT 3J9MA8 (G=GRAB C=COMP) 5 5 Project Number: MATRIX CODE Project Name: Valid Matrix Codes 0W W W W W DRINKING WATER
WATER
WASTE WASSE WATER
PRODUCT
OIL
WIPE
AIR
AIR
TISSUE K Dissolved lead samples need Swaterman Owench . com 29-32 37-40 Hisocrafes 1 : ت Greek ADDITIONAL COMMENTS Rinsule - 07 0120 37-40 (A-Z, 0-9 / ,-). Sample IDs MUST BE UNIQUE equested Due Date/TAT: Standard ガーと  $\sum_{i}$ 4-17) 9-10 0 SAMPLE ID filtered \* Dup O101 26 Mayle Plash Section D Required Client Information Boo Prenes 54-0 5h-d5 GP-45 ione: 612-710-802.1 74-49 D-40 GP-4 SE-46 ection A equired Client Information: 19h-219 GR-46 Cend وي mpany: Page 61 of 66

F.ALL-0-020rev.07, 15-Feb-2007

DATE Signed (MIMIDDIVY): 07/01/2020

SIGNATURE OF SAMPLER

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-dustody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Face Analytical"
www.pacelabs.com

2301904 GROUND WATER ď Z S REGULATORY AGENCY RCRA Requested Analysis Filtered (Y/N) ☐ NPDES ☐ STATE: Site Location UST OCCOUNTING @INPOCTOCIN Invoice Information: Attention: Company Name: Section C Pace Quote Reference: Pace Project Address: Jamorski IYS Haron Baker, Kelly Motoman Project Name: Worker Greenshin 2606-0017 Ben Hokowb Purchase Order No.: Section B Required Project Information: Shawe Project Number: Report To: Copy To: Maple flow MN Email To: Slovoster May Cherk K. con Phone 612-710-8021 Fax Address: 1800 Vieneer Creek Ch. #SSociates Requested Due Date/TAT: SAGMERA Section A Required Client Information: Company: Weylck

T DRINKING WATER

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OTHER

Ĺ			f	-				-	İ				-	sanhau	Requested Analysis Filtered (Y/N)	ysis rill	erea (T/I	e e			
	Section D Required Client Information	Matrix Codes MATRIX / CODE	<b>ু</b> খ			COLLECTED	CTED			Ţ	Preservatives	ves	<b>†</b> N /A								
	GNAC	Drinking Water Water Waste Water Product Soil/Solid	WW P S S	=CEVB C=CC	COM	COMPOSITE	COMPOSITE END/GRAB	OLLECTION					1	pro	3	# #	10	52	10523520	9	
	IQUE							TA GM3	ЯЗИІАТИ	рөл			is Test	anoxoli al hau				مبيد حريف حريف			
# Mati				XIATAM 3J9MA8	DATE	TIME	DATE	E E T 3J9MAS	# OE CO	Unpreser H <sub>2</sub> SO <sub>4</sub>	N <sup>9</sup> OH HCI	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol	Other Analys	D122017 1 H- D 1002	, T.		_		hpisə	Ē	
1	(97-40 (11-26)		۶	St.	21/1/20	205	┝		0		(6)			メメ		-	-		1	2000 COOC	race Project No./ Lab i.D.
7			2	لعد	07/1/2					e	M	F		, x					3 6	700 100 V Ocas	١.
3	Rinsate -	5-B	3	5 13	21/1/20	5541			و	M	~			X X		-			Screen	201	i
4	C1-46(38-40	(0)	3	S KM	2/1/20	288			5	૭	2			×					202	2001004895	9
9			+	-				+							-						
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9																					
<b>=</b> :				-[																	
7.	ADDITIONAL COMMENTS	S	┤"	RELINQU	IISHED BY	RELINQUISHED BY / AFFILIATION	Z	DATE	TIME			ACCEPTI		ACCEPTED BY AFFILIATION		#				SAMPLE CONTINUES	SINCIL
	* Dissolved lead samples	bed is	R.		2018	/WAX		02/1/	0810	88	Mell	10	13	SANDESKI		7	3	1. 2. 5.00			
-	lab Hitterred *					-		-		7	2	_}		The		21/1/2	1855	3 77	2	2	
l' ay	Pad								-										-		
U UZ	e 62					SAMPLER	SAMPLER NAME AND	SIGNATURE	SE SE									0		19	tos
. 01 0	.º of 6	ORIGINAL	INAL			ů.	PRINT Name of SAMPLER:	I SAMPLER		Benjemin	16/5	7						o ui di	bevie (N/Y)	stody d Coo	es Inta
				•		Ø	SIGNATURE of SAMPLER:	SAMPLER	fan .	12	H			DATE Signed (MM/DD/YY):	-	07/10/10		Tem		Seale	lqms2
	*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.	n you are accepting Pa	ace's NET	30 day pay	yment terms	and agreeing to	late charges of	1.5% per mon	th for any ir.	ton sejovr	naid within	20 days			1	1		- E			3

F-ALL-C-010-rev.00, 09Nov2017

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

# Pace Analytical\*

# Document Name:

# Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

#### Sample Condition WO#:10523520 **Client Name:** Project #: **Upon Receipt** Wencik PM: AKA Due Date: 07/10/20 Courier: □UPS Fed Ex USPS Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions **Tracking Number:** Custody Seal on Cooler/Box Present? Yes ⊠No No Packing Material: X Bubble Wrap ☑Bubble Bags None Other: Temp Blank? X Yes □No ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Type of ice: ₩et Blue None ☐ T4(0254) 🛛 T5(0489) Melted Did Samples Originate in West Virginia? ☐Yes ☑No Were All Container Temps Taken? ☐Yes ☐No ☑N/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank:\_ 4.8, 1.0, 2.1 OC. **Average Corrected Temp** (no temp blank only): ☐See Exceptions Correction Factor: Tww Cooler Temp Corrected w/temp blank: 4.8.1.0.2.1 0C °C ☐ 1 Container **USDA Regulated Soil:** ( N/A, water sample/Other: Date/Initials of Person Examining Contents: CEG 7/1/20 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? No Hawaii and Puerto Rico)? Yes ⊠No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: Chain of Custody Present and Filled Out? ∑Yes □No 1. Chain of Custody Relinquished? Yes □No 2. Sampler Name and/or Signature on COC? □No XYes □N/A 3. Samples Arrived within Hold Time? ∕⊠Yes □No 4. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome 5. Short Hold Time Analysis (<72 hr)? ☐ Yes ΧNο ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other Rush Turn Around Time Requested? ⊠No ☐ Yes 6. Sufficient Volume? Yes □No 7. **Correct Containers Used?** Yes □No 8. -Pace Containers Used? X -□No **Containers Intact?** Yes □No 9. Field Filtered Volume Received for Dissolved Tests? □Yes [X]No □N/A Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? **X**Yes □No Matrix: ☑Water ☑Soil ☐Oil ☐Other\_ All containers needing acid/base preservation have been 12. Sample # Yes □No /⊠N/A checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO₃ ∏H₂SO₄ ☐Yes ⊠N/A ☐Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception Exceptions: VOA Coliform, TOC/DOC Oil and Grease. XYes □No □N/A No Chlorine? pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? \(\)\Yes ☐ Yes 13. All VOA □No □N/A See Exception Headspace in VOA Vials (greater than 6mm)? □<u>N/A</u> ⊠No Trip Blank Present? XYes 14. 4 VGGH, VGGM Pace Trip Blank Lot # (if purchased): 260%64, 051820-3 □N/A □No Trip Blank Custody Seals Present? ✓ Yes □No □N/A **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

Labeled by:

∱age 63 of 66

L1236879 B229

**Chain of Custody** ace Analytica State Of Origin: MN Samples were sent directly to the Subcontracting Laboratory. www.pacelabs.com Cert. Needed: x Yes No Workorder: 10523520 Workorder Name: 2606-0017 Water Gremlin SRI Owner Received Date: 7/1/2020 Results Requested By: 7/10/2020 Report To Subcontract To Requested Analysis Annika Asp Pace Analytical Minnesota Pace National 1700 Elm Street National) 12065 Lebanon Road Suite 200 Minneapolis, MN 55414 Mt. Juliet, TN 37122 Phone (612)607-1700 (Pa VOC ø **Preserved Containers** Diox 1,4 Dioxane ρλ VG9M VOC VG9H VG9U DAME Collect Sample LAB USE ONLY Sample ID Date/Time Lab ID Matrix Item X -0 3 3 PS Water GP-44 (24-27) 7/1/2020 08:00 10523520001 X PS 7/1/2020 08:40 10523520002 Water 3 3 -07 GP-44 (37-40) X X 03 GP-45 (11-12') PS 7/1/2020 10:30 10523520004 Solid 4 1 X -06 GP-45 (11-14) PS 7/1/2020 12:00 10523520005 Water 3 3 05 X GP-45 (29-32) 3 3. PS 7/1/2020 12:45 10523520006 Water X 06 GP-45 (37-40) PS 7/1/2020 13:20 10523520007 3 3 Water X X 0 GP-46 (9-10) PS 7/1/2020 15:40 10523520009 Solid 4 1 08 GP-46 (9-12) PS X 7/1/2020 16:30 10523520010 Water 6 X 09 RINSATE-070120 PS 3 7/1/2020 15:00 10523520011 Water X 3 3 10 DUP070120 PS 7/1/2020 00:00 10523520012 Water X GP-46 (17-20) PS 7/1/2020 17:05 6 11 10523520013 Water X GP-46 (30-33) PS 6 7/1/2020 17:40 10523520014 Water X 13 RINSATE-070120-B PS 3 7/1/2020 17:55 10523520015 Water GP-46 (38-40) PS 7/1/2020 18:30 10523520016 6 X Water TRIP BLANK X PS 7/1/2020 00:00 10523520017 Water

PS

7/1/2020 00:00

10523520018

TRIP BLANK

X

L1236879

					8	Comments
ransfers	Released By	Date/Time	Received By	Date/Time		
3	10	ace7/6/20 15	.26			
	"/			7 700	~~~	
			In the	1/7/20	830	1
ooler Te	emperature on Receipt 5	°C Custoo	ly Seal ♀ or N	Received on Ice	(Y) or N	Samples Intact Y or N

Feber#= 1320 7522 9024

J-25.5

RAD SCREEN: <0.5 mPVN

(on+=95

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

		ration	
Client: PACE MN		11368	79
Cooler Received/Opened On: 7 / 7 / 20	Temperature:	05	1901 14 - 17 + 11
Received By: Monica Rifenberrick		And the same	
Signature: A K-	-1	CP . I	
Receipt Check List	NP NP	Yes	N
COC Seal Present / Intact?			
COC Signed / Accurate?			(18)
Bottles arrive intact?			
Correct bottles used?			
Cooler Received/Opened On: 7 / 7 / 20 Temperature: 0.5  Received By: Monica Rifenberrick  Signature: NP Yes  COC Seal Present / Intact?  COC Signed / Accurate?  Bottles arrive intact?	1		
	OF A LOSE AND AND		4
VOA Zero headspace?			For 19
Preservation Correct / Checked?			The Car





July 24, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Orsp

Project Manager

Enclosures

cc: Aaron Benker, Wenck

Ben Holcomb, Wenck Associates Kelly Jaworski, Wenck Associates Inc







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680

California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: 03086 Louisiana DW Certification #: MN00064

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

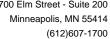
Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01





# **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524484001	Risate-070920	Water	07/09/20 11:45	07/10/20 10:10
10524484002	GP-50 (15-18)	Water	07/09/20 12:30	07/10/20 10:10
10524484003	GP-50 (35-38)	Water	07/09/20 13:40	07/10/20 10:10
10524484004	GP-50 (45-47)	Water	07/09/20 14:15	07/10/20 10:10
10524484005	GP-50 (58-60)	Water	07/09/20 13:00	07/10/20 10:10
10524484006	GP-50 (78-80)	Water	07/09/20 16:00	07/10/20 10:10
10524484007	DUP_070920	Water	07/09/20 00:00	07/10/20 10:10
10524484008	GP-50 (98-100)	Water	07/09/20 17:00	07/10/20 10:10
10524484009	HCL TRIP BLANK	Water	07/09/20 00:00	07/10/20 10:10



# **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
10524484001	Risate-070920	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484002	GP-50 (15-18)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484003	GP-50 (35-38)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484004	GP-50 (45-47)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484005	GP-50 (58-60)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484006	GP-50 (78-80)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484007	DUP_070920	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484008	GP-50 (98-100)	EPA 6010D	DCF	1	
		EPA 8270E by SIM	ZT	2	
		EPA 8260D	AEZ	72	
10524484009	HCL TRIP BLANK	EPA 8260D	AEZ	72	

PASI-M = Pace Analytical Services - Minneapolis



# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: Risate-070920	Lab ID: 105	24484001	Collected: 07/09/2	0 11:45	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:19	9 7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/13/20 15:24	07/14/20 20:4	1 123-91-1	
Surrogates 1,4-Dioxane-d8 (S)	39	%.	30-125	1	07/13/20 15:24	07/14/20 20:4	1	
. ,				•	0.7.0720.012.	0.7.1.720 2011		
3260D VOC	Analytical Method: EPA 8260D							
	Pace Analytica	l Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/14/20 00:29	9 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/14/20 00:29	9 107-05-1	
Benzene	ND	ug/L	1.0	1		07/14/20 00:29	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 00:29	9 74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 00:29	9 75-27-4	
Bromoform	ND	ug/L	4.0	1		07/14/20 00:29	75-25-2	6M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 00:29	9 74-83-9	
-Butanone (MEK)	16.1	ug/L	5.0	1		07/14/20 00:29	9 78-93-3	
-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 104-51-8	
ec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:29		
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 00:29	9 56-23-5	6M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 00:29	9 75-00-3	4M
Chloroform	ND	ug/L	1.0	1		07/14/20 00:29	9 67-66-3	
Chloromethane	ND	ug/L	4.0	1		07/14/20 00:29	9 74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:29	9 95-49-8	
-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:29	9 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 00:29	9 96-12-8	6M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 00:29	9 124-48-1	6M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 00:29	9 106-93-4	
Dibromomethane	ND	ug/L	4.0	1		07/14/20 00:29	9 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:29	9 106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 00:29	9 75-71-8	
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 00:29	9 75-34-3	
,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 00:29	9 107-06-2	
,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:29	9 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:29	9 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:29	9 156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 00:29	9 75-43-4	
,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 00:29	9 78-87-5	
,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 00:29	9 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 00:29		

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: Risate-070920	Lab ID: 10524484001		Collected: 07/09/20 11:45		Received: 0	07/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	l Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 00:2	9 563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1			9 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 00:2	9 10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 00:2		
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 00:2	9 87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 00:2	9 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 00:2	9 99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 00:2	9 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 00:2	9 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 00:2		
Naphthalene	ND	ug/L	4.0	1		07/14/20 00:2	9 91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 00:2	9 100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:2	9 630-20-6	6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:2	9 79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 00:2	9 127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 00:2	9 109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 00:2	9 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 87-61-6	6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 120-82-1	6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:2	9 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:2	9 79-00-5	
Trichloroethene	ND	ug/L	0.40	1		07/14/20 00:2	9 79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 00:2	9 75-69-4	
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 00:2	9 96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 00:2	9 76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:2	9 108-67-8	
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 00:2	9 75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 00:2	9 1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 00:2	9 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		07/14/20 00:2	9 95-47-6	
Surrogates		-						
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		07/14/20 00:2	9 17060-07-0	
Toluene-d8 (S)	93	%.	75-125	1		07/14/20 00:2	9 2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		07/14/20 00:2	9 460-00-4	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: GP-50 (15-18)	Lab ID: 105	24484002	Collected: 07/09/2	0 12:30	Received: 07	/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:21	7439-92-1	
3270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.38	1	07/13/20 15:24	07/14/20 21:01	123-91-1	
1,4-Dioxane-d8 (S)	35	%.	30-125	1	07/13/20 15:24	07/14/20 21:01	I	
3260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	I Services -	Minneapolis					
Nantana	•		•	4		07/44/00 00 00	67.64.4	
Acetone	ND	ug/L	20.0	1		07/14/20 03:36		
Allyl chloride	ND	ug/L	4.0	1		07/14/20 03:36		
Benzene	ND	ug/L	1.0	1		07/14/20 03:36	-	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 03:36		
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 03:36		
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 03:36		CMIO
Bromoform	ND	ug/L	4.0	1		07/14/20 03:36		6M,L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 03:36		
2-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 03:36		
n-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		
sec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		CMIO
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 03:36		6M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 03:36		41.4
Chloroethane	ND	ug/L	1.0	1		07/14/20 03:36		4M
Chloroform	ND	ug/L	1.0	1		07/14/20 03:36		
Chloromethane	ND	ug/L	4.0	1		07/14/20 03:36		
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 03:36		
4-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 03:36		CNA
1,2-Dibromo-3-chloropropane Dibromochloromethane	ND	ug/L	4.0	1 1		07/14/20 03:36 07/14/20 03:36		6M 6M
	ND ND	ug/L	1.0 1.0	1		07/14/20 03:36		OIVI
,2-Dibromoethane (EDB)	ND ND	ug/L	4.0	1		07/14/20 03:36		
Dibromomethane		ug/L		1				
I,2-Dichlorobenzene I,3-Dichlorobenzene	ND ND	ug/L	1.0 1.0	1		07/14/20 03:36 07/14/20 03:36		
,4-Dichlorobenzene	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
.1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 03:36		
, 1-Dichloroethane	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
,1-Dichloroethene	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
cis-1,2-Dichloroethene	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
rans-1,2-Dichloroethene	ND ND	ug/L ug/L	1.0	1		07/14/20 03:36		
Dichlorofluoromethane	ND ND		1.0			07/14/20 03:36		
	ND ND	ug/L	4.0	1		07/14/20 03:36		
,2-Dichloropropane ,3-Dichloropropane		ug/L		1				
1,3-Dichloropropane 2,2-Dichloropropane	ND ND	ug/L ug/L	1.0 4.0	1 1		07/14/20 03:36 07/14/20 03:36		

#### **REPORT OF LABORATORY ANALYSIS**

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#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (15-18)	Lab ID: 105	24484002	Collected: 07/09/2	0 12:30	Received: 0	7/10/20 10:10 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 03:36	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:36	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 03:36	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 03:36	87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 03:36	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 03:36	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 03:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 03:36		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 03:36	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 03:36		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 03:36	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 03:36	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:36		6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:36		-
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 03:36		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 03:36		
Toluene	ND	ug/L	1.0	1		07/14/20 03:36		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:36		6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:36		6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:36		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:36		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 03:36		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 03:36		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 03:36		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 03:36		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:36		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 03:36		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 03:36		
n&p-Xylene	ND	ug/L	2.0	1		07/14/20 03:36		
o-Xylene	ND	ug/L	1.0	1		07/14/20 03:36		
Surrogates	110	49/L	1.0	•		3771720 00.00	30 11 0	
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		07/14/20 03:36	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		07/14/20 03:36		
4-Bromofluorobenzene (S)	98	%.	75-125	1		07/14/20 03:36		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: GP-50 (35-38)	Lab ID: 105	24484003	Collected: 07/09/2	0 13:40	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:24	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.50	1	07/15/20 16:32	07/16/20 17:28	3 123-91-1	
1,4-Dioxane-d8 (S)	32	%.	30-125	1	07/15/20 16:32	07/16/20 17:28	3	P1
8260D VOC	Analytical Meth							
	Pace Analytica	I Services -	Minneapolis					
Acetone	ND	ug/L	40.0	2		07/14/20 03:53	8 67-64-1	
Allyl chloride	ND	ug/L	8.0	2		07/14/20 03:53	3 107-05-1	
Benzene	ND	ug/L	2.0	2		07/14/20 03:53	3 71-43-2	
Bromobenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		07/14/20 03:53	3 74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		07/14/20 03:53	3 75-27-4	
Bromoform	ND	ug/L	8.0	2		07/14/20 03:53	3 75-25-2	6M, L2
Bromomethane	ND	ug/L	8.0	2		07/14/20 03:53	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	2		07/14/20 03:53	3 78-93-3	
n-Butylbenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 104-51-8	
sec-Butylbenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 135-98-8	
ert-Butylbenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 98-06-6	
Carbon tetrachloride	ND	ug/L	2.0	2		07/14/20 03:53	3 56-23-5	6M, L2
Chlorobenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 108-90-7	
Chloroethane	ND	ug/L	2.0	2		07/14/20 03:53	3 75-00-3	4M
Chloroform	ND	ug/L	2.0	2		07/14/20 03:53	3 67-66-3	
Chloromethane	ND	ug/L	8.0	2		07/14/20 03:53	3 74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		07/14/20 03:53	3 95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		07/14/20 03:53	3 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	8.0	2		07/14/20 03:53	3 96-12-8	6M
Dibromochloromethane	ND	ug/L	2.0	2		07/14/20 03:53	3 124-48-1	6M
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		07/14/20 03:53	3 106-93-4	
Dibromomethane	ND	ug/L	8.0	2		07/14/20 03:53	3 74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 541-73-1	
I,4-Dichlorobenzene	ND	ug/L	2.0	2		07/14/20 03:53	3 106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		07/14/20 03:53	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	2.0	2		07/14/20 03:53	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		07/14/20 03:53	3 107-06-2	
I,1-Dichloroethene	ND	ug/L	2.0	2		07/14/20 03:53	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		07/14/20 03:53	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	2.0	2		07/14/20 03:53	3 156-60-5	
Dichlorofluoromethane	ND	ug/L	2.0	2		07/14/20 03:53	3 75-43-4	
1,2-Dichloropropane	ND	ug/L	8.0	2		07/14/20 03:53		
1,3-Dichloropropane	ND	ug/L	2.0	2		07/14/20 03:53		
2,2-Dichloropropane	ND	ug/L	8.0	2		07/14/20 03:53		

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#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (35-38)	Lab ID:	10524484003	Collected: 07/09/2	20 13:40	Received: 0	7/10/20 10:10 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical I	Method: EPA 82	260D					
	Pace Analy	tical Services -	Minneapolis					
1,1-Dichloropropene	NE	ug/L	2.0	2		07/14/20 03:53	3 563-58-6	
cis-1,3-Dichloropropene	NE	_	8.0	2		07/14/20 03:53	3 10061-01-5	
trans-1,3-Dichloropropene	NE	•	8.0	2		07/14/20 03:53	3 10061-02-6	
Diethyl ether (Ethyl ether)	NE	ug/L	8.0	2		07/14/20 03:53	8 60-29-7	
Ethylbenzene	NE	-	2.0	2		07/14/20 03:53	3 100-41-4	
Hexachloro-1,3-butadiene	NE		2.0	2		07/14/20 03:53	87-68-3	6M
Isopropylbenzene (Cumene)	NE	-	2.0	2		07/14/20 03:53	8 98-82-8	
p-Isopropyltoluene	NE		2.0	2		07/14/20 03:53	99-87-6	
Methylene Chloride	NE	-	8.0	2		07/14/20 03:53	3 75-09-2	
4-Methyl-2-pentanone (MIBK)	NE	-	10.0	2		07/14/20 03:53	3 108-10-1	
Methyl-tert-butyl ether	NE		2.0	2		07/14/20 03:53	3 1634-04-4	
Naphthalene	NE	_	8.0	2		07/14/20 03:53	91-20-3	
n-Propylbenzene	NE	-	2.0	2		07/14/20 03:53	3 103-65-1	
Styrene	NE	-	2.0	2		07/14/20 03:53	3 100-42-5	
1,1,1,2-Tetrachloroethane	NE		2.0	2		07/14/20 03:53	3 630-20-6	6M
1,1,2,2-Tetrachloroethane	NE		2.0	2		07/14/20 03:53		
Tetrachloroethene	NE	ŭ	2.0	2		07/14/20 03:53	3 127-18-4	
Tetrahydrofuran	NE	-	20.0	2		07/14/20 03:53	3 109-99-9	
Toluene	NE	-	2.0	2		07/14/20 03:53	3 108-88-3	
1,2,3-Trichlorobenzene	NE		2.0	2		07/14/20 03:53		6M
1,2,4-Trichlorobenzene	NE	_	2.0	2		07/14/20 03:53	3 120-82-1	6M
1,1,1-Trichloroethane	NE	ŭ	2.0	2		07/14/20 03:53	3 71-55-6	
1,1,2-Trichloroethane	NE	ug/L	2.0	2		07/14/20 03:53	3 79-00-5	
Trichloroethene	NE		0.80	2		07/14/20 03:53	3 79-01-6	
Trichlorofluoromethane	NE		2.0	2		07/14/20 03:53	3 75-69-4	
1,2,3-Trichloropropane	NE		8.0	2		07/14/20 03:53		
1,1,2-Trichlorotrifluoroethane	NE	0	2.0	2		07/14/20 03:53		
1,2,4-Trimethylbenzene	NE	-	2.0	2		07/14/20 03:53	95-63-6	
1,3,5-Trimethylbenzene	NE		2.0	2		07/14/20 03:53	3 108-67-8	
Vinyl chloride	NE	0	0.40	2		07/14/20 03:53		
Xylene (Total)	ND	-	6.0	2		07/14/20 03:53		
m&p-Xylene	NE	0	4.0	2		07/14/20 03:53		
o-Xylene	NE		2.0	2		07/14/20 03:53		
Surrogates		- 3-						
1,2-Dichloroethane-d4 (S)	99	%.	75-125	2		07/14/20 03:53	3 17060-07-0	8M
Toluene-d8 (S)	93	%.	75-125	2		07/14/20 03:53	3 2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	2		07/14/20 03:53	3 460-00-4	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: GP-50 (45-47)	Lab ID: 105	24484004	Collected: 07/09/2	0 14:15	Received: 07	//10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	•		010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica		•					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:26	5 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	ND	ug/L	0.25	1	07/13/20 15:24	07/14/20 21:42	2 123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	25	%.	30-125	1	07/13/20 15:24	07/14/20 21:42	2	2M, S0
3260D VOC	Analytical Meth	nod: FPA 82	260D					
,2002 100	Pace Analytica							
•	•		·			07/44/00 00 44		
Acetone	ND	ug/L	20.0	1		07/14/20 00:12		
Allyl chloride	ND	ug/L	4.0	1		07/14/20 00:12		
Benzene	ND	ug/L	1.0	1		07/14/20 00:12	_	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 00:12		
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 00:12	2 74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 00:12	2 75-27-4	
Bromoform	ND	ug/L	4.0	1		07/14/20 00:12	2 75-25-2	6M,L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 00:12	2 74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 00:12	2 78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:12	2 104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:12	2 135-98-8	
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 00:12	2 98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 00:12	2 56-23-5	6M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 00:12	2 108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 00:12		4M
Chloroform	ND	ug/L	1.0	1		07/14/20 00:12		
Chloromethane	ND	ug/L	4.0	1		07/14/20 00:12		
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:12		
4-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 00:12		
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 00:12		6M
Dibromochloromethane	ND ND	ug/L	1.0	1		07/14/20 00:12		6M
1,2-Dibromoethane (EDB)	ND ND	ug/L	1.0	1		07/14/20 00:12		Olvi
		•		1				
Dibromomethane	ND	ug/L	4.0	1		07/14/20 00:12		
,2-Dichlorobenzene	ND	ug/L	1.0	•		07/14/20 00:12		
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:12		
I,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:12		
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 00:12		
I,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 00:12		
I,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 00:12		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:12		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:12		
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 00:12		
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 00:12		
1,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 00:12	2 78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 00:12	2 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 00:12	2 594-20-7	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (45-47)	Lab ID: 105	24484004	Collected: 07/09/2	0 14:15	Received: 0	7/10/20 10:10 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 00:12	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 00:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 00:12	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 00:12	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 00:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 00:12	87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 00:12	98-82-8	
p-lsopropyltoluene	ND	ug/L	1.0	1		07/14/20 00:12	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 00:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 00:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 00:12	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 00:12	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 00:12	103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 00:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:12	630-20-6	6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 00:12		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 00:12		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 00:12	109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 00:12		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:12		6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 00:12		6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:12		•
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 00:12		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 00:12		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 00:12		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 00:12		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 00:12		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:12		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 00:12		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 00:12		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 00:12		
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 00:12		
o-Xylene	ND	ug/L	1.0	1		07/14/20 00:12		
Surrogates	140	ug/ L	1.0			37/17/20 00.12	. 55 41 5	
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		07/14/20 00:12	17060-07-0	
Toluene-d8 (S)	93	%.	75-125	1		07/14/20 00:12		
4-Bromofluorobenzene (S)	99	%.	75-125	1		07/14/20 00:12		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (58-60)	Lab ID:	10524484005	Collected: 07/09	/20 13:00	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Lab Filtered	Analytical	Method: EPA 60	010D Preparation I	lethod: E	PA 3010A			
	Pace Analy	ytical Services -	Minneapolis					
Lead, Dissolved	NE	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:3	8 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical	Method: EPA 82	270E by SIM Prepa	ration Me	ethod: EPA Mod.	3510C		
	-	ytical Services -						
1,4-Dioxane (SIM)	1.1	l ug/L	0.23	1	07/13/20 15:24	07/14/20 22:4	4 123-91-1	
Surrogates	4.	4 0/	20.420	4	07/40/00 45:04	07/44/00 00:4	4	
1,4-Dioxane-d8 (S)	44	4 %.	30-125	1	07/13/20 15:24	07/14/20 22:4	4	
8260D VOC	Analytical	Method: EPA 82	260D					
	Pace Analy	ytical Services -	Minneapolis					
Acetone	NE	) ug/L	20.0	1		07/14/20 03:1	9 67-64-1	
Allyl chloride	NE	J	4.0			07/14/20 03:1		
Benzene	NE	_	1.0			07/14/20 03:1		
Bromobenzene	NE	_	1.0			07/14/20 03:1		
Bromochloromethane	NE	_	1.0			07/14/20 03:1		
Bromodichloromethane	NE		1.0			07/14/20 03:1		
Bromoform	NE	0	4.0			07/14/20 03:1		6M,L2
Bromomethane	NE	0	4.0			07/14/20 03:1		···,
2-Butanone (MEK)	NE	_	5.0	1		07/14/20 03:1		
n-Butylbenzene	NE	_	1.0			07/14/20 03:1		
sec-Butylbenzene	NE	_	1.0	1		07/14/20 03:1	9 135-98-8	
ert-Butylbenzene	NE	-	1.0	1		07/14/20 03:1		
Carbon tetrachloride	NE	ug/L	1.0	1		07/14/20 03:1	9 56-23-5	6M,L2
Chlorobenzene	NE	_	1.0	1		07/14/20 03:1	9 108-90-7	
Chloroethane	NE	_	1.0	1		07/14/20 03:1	9 75-00-3	4M
Chloroform	NE	ug/L	1.0	1		07/14/20 03:1	9 67-66-3	
Chloromethane	NE	ug/L	4.0	1		07/14/20 03:1	9 74-87-3	
2-Chlorotoluene	NE	ug/L	1.0	1		07/14/20 03:1	9 95-49-8	
4-Chlorotoluene	NE	ug/L	1.0	1		07/14/20 03:1	9 106-43-4	
1,2-Dibromo-3-chloropropane	NE	ug/L	4.0	1		07/14/20 03:1	9 96-12-8	6M
Dibromochloromethane	NE	) ug/L	1.0	1		07/14/20 03:1	9 124-48-1	6M
1,2-Dibromoethane (EDB)	NE	) ug/L	1.0	1		07/14/20 03:1	9 106-93-4	
Dibromomethane	NE	) ug/L	4.0	1		07/14/20 03:1	9 74-95-3	
1,2-Dichlorobenzene	NE	. 3	1.0			07/14/20 03:1		
1,3-Dichlorobenzene	NE	_	1.0	1		07/14/20 03:1		
1,4-Dichlorobenzene	NE	•	1.0			07/14/20 03:1		
Dichlorodifluoromethane	NE	•	1.0			07/14/20 03:1		
1,1-Dichloroethane	NE	•	1.0			07/14/20 03:1		
1,2-Dichloroethane	NE	•	1.0			07/14/20 03:1		
1,1-Dichloroethene	NE	•	1.0			07/14/20 03:1		
cis-1,2-Dichloroethene	NE	J	1.0			07/14/20 03:1		
trans-1,2-Dichloroethene	NE	•	1.0			07/14/20 03:1		
Dichlorofluoromethane	NE	•	1.0			07/14/20 03:1		
1,2-Dichloropropane	NE	•	4.0			07/14/20 03:1		
1,3-Dichloropropane	NE	•	1.0			07/14/20 03:1		
2,2-Dichloropropane	NE	) ug/L	4.0	1		07/14/20 03:1	9 594-20-7	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (58-60)	Lab ID: 105	24484005	Collected: 07/09/2	20 13:00	Received: 0	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 03:19	9 563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:19		
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:19	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 03:19	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 03:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 03:19	87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 03:19	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 03:19	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 03:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 03:19		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 03:19	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/14/20 03:19	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 03:19		
Styrene	ND	ug/L	1.0	1		07/14/20 03:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:19		6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:19		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 03:19	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 03:19	109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 03:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:19		6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:19		6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:19		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:19		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 03:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 03:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 03:19		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 03:19		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:19		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:19	0 108-67-8	
√inyl chloride	ND	ug/L	0.20	1		07/14/20 03:19		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 03:19		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		07/14/20 03:19		
Surrogates				-		3.7.1		
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		07/14/20 03:19	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		07/14/20 03:19		
4-Bromofluorobenzene (S)	100	%.	75-125	1		07/14/20 03:19	460-00-4	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: GP-50 (78-80)	Lab ID: 105	24484006	Collected: 07/09/2	0 16:00	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	I Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:39	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ition Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM)	2.4	ug/L	0.42	1	07/13/20 15:24	07/14/20 23:05	123-91-1	
<b>Surrogates</b> 1,4-Dioxane-d8 (S)	6	%.	30-125	1	07/13/20 15:24	07/14/20 23:05	5	1M,2M
3260D VOC	Analytical Meth	nod: FPA 82	260D					
2005 100	Pace Analytica							
	•		•	_		.=		
Acetone	ND	ug/L	100	5		07/14/20 04:10		
Allyl chloride	ND	ug/L	20.0	5		07/14/20 04:10		
Benzene	ND	ug/L	5.0	5		07/14/20 04:10		
Bromobenzene	ND	ug/L	5.0	5		07/14/20 04:10	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		07/14/20 04:10	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		07/14/20 04:10	75-27-4	
Bromoform	ND	ug/L	20.0	5		07/14/20 04:10	75-25-2	6M,L2
Bromomethane	ND	ug/L	20.0	5		07/14/20 04:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	25.0	5		07/14/20 04:10	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	5		07/14/20 04:10	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	5		07/14/20 04:10	135-98-8	
ert-Butylbenzene	ND	ug/L	5.0	5		07/14/20 04:10	98-06-6	
Carbon tetrachloride	ND	ug/L	5.0	5		07/14/20 04:10	56-23-5	6M,L2
Chlorobenzene	ND	ug/L	5.0	5		07/14/20 04:10		- ,
Chloroethane	ND	ug/L	5.0	5		07/14/20 04:10		4M
Chloroform	ND	ug/L	5.0	5		07/14/20 04:10		
Chloromethane	ND	ug/L	20.0	5		07/14/20 04:10		
2-Chlorotoluene	ND	ug/L	5.0	5		07/14/20 04:10		
	ND ND	-	5.0	5		07/14/20 04:10		
4-Chlorotoluene		ug/L						CNA
1,2-Dibromo-3-chloropropane	ND	ug/L	20.0	5		07/14/20 04:10		6M
Dibromochloromethane	ND	ug/L	5.0	5		07/14/20 04:10		6M
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		07/14/20 04:10		
Dibromomethane	ND	ug/L	20.0	5		07/14/20 04:10		
1,2-Dichlorobenzene	ND	ug/L	5.0	5		07/14/20 04:10		
1,3-Dichlorobenzene	ND	ug/L	5.0	5		07/14/20 04:10		
1,4-Dichlorobenzene	ND	ug/L	5.0	5		07/14/20 04:10		
Dichlorodifluoromethane	ND	ug/L	5.0	5		07/14/20 04:10		
I,1-Dichloroethane	ND	ug/L	5.0	5		07/14/20 04:10		
1,2-Dichloroethane	ND	ug/L	5.0	5		07/14/20 04:10		
1,1-Dichloroethene	ND	ug/L	5.0	5		07/14/20 04:10		
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		07/14/20 04:10		
rans-1,2-Dichloroethene	ND	ug/L	5.0	5		07/14/20 04:10	156-60-5	
Dichlorofluoromethane	ND	ug/L	5.0	5		07/14/20 04:10	75-43-4	
1,2-Dichloropropane	ND	ug/L	20.0	5		07/14/20 04:10	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		07/14/20 04:10	142-28-9	
2,2-Dichloropropane	ND	ug/L	20.0	5		07/14/20 04:10		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (78-80)	Lab ID:	10524484006	Collected: 07/09/2	20 16:00	Received: 0	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical	Method: EPA 82	260D					
	Pace Analy	tical Services -	Minneapolis					
1,1-Dichloropropene	NE	ug/L	5.0	5		07/14/20 04:10	563-58-6	
cis-1,3-Dichloropropene	NE	_	20.0	5		07/14/20 04:10	10061-01-5	
trans-1,3-Dichloropropene	NE	ug/L	20.0	5		07/14/20 04:10		
Diethyl ether (Ethyl ether)	NE	ug/L	20.0	5		07/14/20 04:10	60-29-7	
Ethylbenzene	NE	ug/L	5.0	5		07/14/20 04:10	100-41-4	
Hexachloro-1,3-butadiene	NE	ug/L	5.0	5		07/14/20 04:10	87-68-3	6M
Isopropylbenzene (Cumene)	NE	_	5.0	5		07/14/20 04:10	98-82-8	
p-Isopropyltoluene	NE	ug/L	5.0	5		07/14/20 04:10	99-87-6	
Methylene Chloride	NE	_	20.0	5		07/14/20 04:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	NE	_	25.0	5		07/14/20 04:10	108-10-1	
Methyl-tert-butyl ether	NE	•	5.0	5		07/14/20 04:10	1634-04-4	
Naphthalene	NE	_	20.0	5		07/14/20 04:10	91-20-3	
n-Propylbenzene	NE	ug/L	5.0	5		07/14/20 04:10	103-65-1	
Styrene	NE	_	5.0	5		07/14/20 04:10	100-42-5	
1,1,1,2-Tetrachloroethane	NE	_	5.0	5		07/14/20 04:10	630-20-6	6M
1,1,2,2-Tetrachloroethane	NE	_	5.0	5		07/14/20 04:10	79-34-5	
Tetrachloroethene	NE	_	5.0	5		07/14/20 04:10		
Tetrahydrofuran	NE	_	50.0	5		07/14/20 04:10	109-99-9	
Toluene	NE	_	5.0	5		07/14/20 04:10		
1,2,3-Trichlorobenzene	NE	0	5.0	5		07/14/20 04:10		6M
1,2,4-Trichlorobenzene	NE		5.0	5		07/14/20 04:10		6M
1,1,1-Trichloroethane	NE	_	5.0	5		07/14/20 04:10		
1,1,2-Trichloroethane	NE	_	5.0	5		07/14/20 04:10		
Trichloroethene	NE	_	2.0	5		07/14/20 04:10		
Trichlorofluoromethane	NE	•	5.0	5		07/14/20 04:10		
1,2,3-Trichloropropane	NE	_	20.0	5		07/14/20 04:10		
1,1,2-Trichlorotrifluoroethane	NE	_	5.0	5		07/14/20 04:10		
1,2,4-Trimethylbenzene	NE	_	5.0	5		07/14/20 04:10		
1,3,5-Trimethylbenzene	NE	_	5.0	5		07/14/20 04:10		
Vinyl chloride	NE	0	1.0	5		07/14/20 04:10		
Xylene (Total)	NE	0	15.0	5		07/14/20 04:10		
m&p-Xylene	NE	_	10.0	5		07/14/20 04:10		
o-Xylene	NE	0	5.0	5		07/14/20 04:10		
Surrogates	INL	. ug/L	0.0	J		377172004.10	50 11 0	
1,2-Dichloroethane-d4 (S)	10 <sup>2</sup>	l %.	75-125	5		07/14/20 04:10	17060-07-0	8M
Toluene-d8 (S)	92		75-125	5		07/14/20 04:10		
4-Bromofluorobenzene (S)	98		75-125	5		07/14/20 04:10		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: DUP_070920	Lab ID: 105	24484007	Collected: 07/09/2	20 00:00	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	010D Preparation Me	ethod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:4	1 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.23	1	07/13/20 15:24	07/14/20 23:26	6 123-91-1	
1,4-Dioxane-d8 (S)	47	%.	30-125	1	07/13/20 15:24	07/14/20 23:26	6	
3260D VOC	Analytical Meth							
	Pace Analytica	I Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/14/20 02:45	5 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/14/20 02:45	5 107-05-1	
Benzene	ND	ug/L	1.0	1		07/14/20 02:45	5 71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 02:45	5 74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 02:45	5 75-27-4	
Bromoform	ND	ug/L	4.0	1		07/14/20 02:45	5 75-25-2	6M, L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 02:45	5 74-83-9	
-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 02:45	5 78-93-3	
-Butylbenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 104-51-8	
ec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 135-98-8	
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 02:45	5 56-23-5	6M, L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 108-90-7	
Chloroethane	ND	ug/L	1.0	1		07/14/20 02:45	5 75-00-3	4M
Chloroform	ND	ug/L	1.0	1		07/14/20 02:45	5 67-66-3	
Chloromethane	ND	ug/L	4.0	1		07/14/20 02:45	5 74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 02:45	5 95-49-8	
I-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 02:45	5 106-43-4	
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 02:45	5 96-12-8	6M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 02:45	5 124-48-1	6M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 02:45	5 106-93-4	
Dibromomethane	ND	ug/L	4.0	1		07/14/20 02:45	5 74-95-3	
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 02:45	5 106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 02:45	5 75-71-8	
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 02:45	5 75-34-3	
,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 02:45	5 107-06-2	
,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 02:45	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 02:45	5 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 02:45	5 156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 02:45	5 75-43-4	
,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 02:45		
1,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 02:4	5 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 02:45		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: DUP_070920	Lab ID: 105	24484007	Collected: 07/09/2	00:00	Received: (	07/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	l Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 02:4	5 563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 02:4	5 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 02:4	5 10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 02:4	5 60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 02:4	5 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 02:4	5 87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 02:4	5 98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 02:4	5 99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 02:4	5 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 02:4	5 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 02:4		
Naphthalene	ND	ug/L	4.0	1		07/14/20 02:4	5 91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 02:4	5 103-65-1	
Styrene	ND	ug/L	1.0	1		07/14/20 02:4		
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 02:4	5 630-20-6	6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 02:4	5 79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 02:4		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 02:4	5 109-99-9	
Toluene	ND	ug/L	1.0	1		07/14/20 02:4	5 108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 02:4	5 87-61-6	6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 02:4	5 120-82-1	6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 02:4	5 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 02:4	5 79-00-5	
Trichloroethene	ND	ug/L	0.40	1		07/14/20 02:4		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 02:4		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 02:4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 02:4		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 02:4		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 02:4		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 02:4		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 02:4		
m&p-Xylene	ND	ug/L	2.0	1			5 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		07/14/20 02:4		
Surrogates		- <del>3</del> , –				- · · · · - · ·	· <del>-</del>	
1,2-Dichloroethane-d4 (S)	101	%.	75-125	1		07/14/20 02:4	5 17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		07/14/20 02:4	5 2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		07/14/20 02:4	5 460-00-4	



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Date: 07/24/2020 05:59 AM

Sample: GP-50 (98-100)	Lab ID: 105	24484008	Collected: 07/09/2	0 17:00	Received: 07	/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP, Lab Filtered	Analytical Meth	nod: EPA 60	10D Preparation Me	thod: E	PA 3010A			
	Pace Analytica	l Services -	Minneapolis					
Lead, Dissolved	ND	ug/L	10.0	1	07/13/20 07:23	07/14/20 17:4	3 7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth Pace Analytica		270E by SIM Prepara Minneapolis	ation Me	thod: EPA Mod. 3	3510C		
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.25	1	07/13/20 15:24	07/14/20 23:4	6 123-91-1	
1,4-Dioxane-d8 (S)	35	%.	30-125	1	07/13/20 15:24	07/14/20 23:4	6	
3260D VOC	Analytical Meth	nod: EPA 82	e60D					
	Pace Analytica	I Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/14/20 03:0	2 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/14/20 03:0		
Benzene	ND	ug/L	1.0	1		07/14/20 03:0		
Bromobenzene	ND	ug/L	1.0	1		07/14/20 03:0	-	
Bromochloromethane	ND	ug/L	1.0	1		07/14/20 03:0		
Bromodichloromethane	ND	ug/L	1.0	1		07/14/20 03:0		
Bromoform	ND	ug/L	4.0	1		07/14/20 03:0		6M,L2
Bromomethane	ND	ug/L	4.0	1		07/14/20 03:0		OIVI, LZ
P-Butanone (MEK)	ND	ug/L	5.0	1		07/14/20 03:0		
n-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:0		
ec-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:0		
ert-Butylbenzene	ND	ug/L	1.0	1		07/14/20 03:0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/14/20 03:0		6M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/14/20 03:0		···.,
Chloroethane	ND	ug/L	1.0	1		07/14/20 03:0		4M
Chloroform	ND	ug/L	1.0	1		07/14/20 03:0		
Chloromethane	ND	ug/L	4.0	1		07/14/20 03:0		
2-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 03:0		
I-Chlorotoluene	ND	ug/L	1.0	1		07/14/20 03:0		
,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/14/20 03:0	2 96-12-8	6M
Dibromochloromethane	ND	ug/L	1.0	1		07/14/20 03:0		6M
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/14/20 03:0		
Dibromomethane	ND	ug/L	4.0	1		07/14/20 03:0		
,2-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:0	2 95-50-1	
,3-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:0	2 541-73-1	
,4-Dichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:0	2 106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/14/20 03:0	2 75-71-8	
,1-Dichloroethane	ND	ug/L	1.0	1		07/14/20 03:0	2 75-34-3	
,2-Dichloroethane	ND	ug/L	1.0	1		07/14/20 03:0	2 107-06-2	
,1-Dichloroethene	ND	ug/L	1.0	1		07/14/20 03:0	2 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 03:0	2 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/14/20 03:0	2 156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 03:0	2 75-43-4	
I,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 03:0	2 78-87-5	
I,3-Dichloropropane	ND	ug/L	1.0	1		07/14/20 03:0	2 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/14/20 03:0		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: GP-50 (98-100)	Lab ID: 105	24484008	Collected: 07/09/2	20 17:00	Received: 0	7/10/20 10:10 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D VOC	Analytical Met	hod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
1,1-Dichloropropene	ND	ug/L	1.0	1		07/14/20 03:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:02		
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/14/20 03:02	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/14/20 03:02	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/14/20 03:02	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/14/20 03:02	87-68-3	6M
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/14/20 03:02	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		07/14/20 03:02	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		07/14/20 03:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/14/20 03:02		
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/20 03:02		
Naphthalene	ND	ug/L	4.0	1		07/14/20 03:02		
n-Propylbenzene	ND	ug/L	1.0	1		07/14/20 03:02		
Styrene	ND	ug/L	1.0	1		07/14/20 03:02		
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:02		6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/14/20 03:02		
Tetrachloroethene	ND	ug/L	1.0	1		07/14/20 03:02		
Tetrahydrofuran	ND	ug/L	10.0	1		07/14/20 03:02		
Toluene	ND	ug/L	1.0	1		07/14/20 03:02		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:02		6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/14/20 03:02		6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:02		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/14/20 03:02		
Trichloroethene	ND	ug/L	0.40	1		07/14/20 03:02		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/14/20 03:02		
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/14/20 03:02		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/14/20 03:02		
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:02		
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/14/20 03:02		
Vinyl chloride	ND	ug/L	0.20	1		07/14/20 03:02		
Xylene (Total)	ND	ug/L	3.0	1		07/14/20 03:02		
m&p-Xylene	ND	ug/L	2.0	1		07/14/20 03:02		
o-Xylene	ND	ug/L	1.0	1		07/14/20 03:02		
Surrogates	140	<i>49,</i> ∟	1.0	•		3171 1/20 00:02	. 50 11 0	
1,2-Dichloroethane-d4 (S)	101	%.	75-125	1		07/14/20 03:02	17060-07-0	
Toluene-d8 (S)	92	%.	75-125	1		07/14/20 03:02		
4-Bromofluorobenzene (S)	97	%.	75-125	1		07/14/20 03:02		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: HCL TRIP BLANK	Lab ID: 105	24484009	Collected: 07/09/2	20 00:00	Received:	07/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260D VOC	Analytical Metl	nod: EPA 82	260D					
	Pace Analytica	al Services -	Minneapolis					
Acetone	ND	ug/L	20.0	1		07/13/20 23:3	8 67-64-1	
Allyl chloride	ND	ug/L	4.0	1		07/13/20 23:3	8 107-05-1	
Benzene	ND	ug/L	1.0	1		07/13/20 23:3	8 71-43-2	
Bromobenzene	ND	ug/L	1.0	1		07/13/20 23:3	8 108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		07/13/20 23:3	8 74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		07/13/20 23:3	8 75-27-4	
Bromoform	ND	ug/L	4.0	1		07/13/20 23:3		6M,L2
Bromomethane	ND	ug/L	4.0	1		07/13/20 23:3		- ,
2-Butanone (MEK)	ND	ug/L	5.0	1		07/13/20 23:3		
n-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:3		
sec-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:3		
ert-Butylbenzene	ND	ug/L	1.0	1		07/13/20 23:3		
Carbon tetrachloride	ND	ug/L	1.0	1		07/13/20 23:3		6M,L2
Chlorobenzene	ND	ug/L	1.0	1		07/13/20 23:3		OIVI, LZ
Chloroethane	ND ND	ug/L ug/L	1.0	1		07/13/20 23:3		4M
Chloroform	ND ND	ug/L	1.0	1		07/13/20 23:3		4111
Chloromethane	ND ND	ug/L ug/L	4.0	1		07/13/20 23:3		
2-Chlorotoluene	ND ND	•	1.0	1		07/13/20 23:3		
		ug/L	1.0	1				
4-Chlorotoluene	ND	ug/L				07/13/20 23:3		CN4
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		07/13/20 23:3		6M
Dibromochloromethane	ND	ug/L	1.0	1		07/13/20 23:3		6M
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		07/13/20 23:3		
Dibromomethane	ND	ug/L	4.0	1		07/13/20 23:3		
1,2-Dichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:3		
1,3-Dichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:3		
1,4-Dichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:3		
Dichlorodifluoromethane	ND	ug/L	1.0	1		07/13/20 23:3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/13/20 23:3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/13/20 23:3		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/13/20 23:3		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/13/20 23:3		
rans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/13/20 23:3		
Dichlorofluoromethane	ND	ug/L	1.0	1		07/13/20 23:3	8 75-43-4	
1,2-Dichloropropane	ND	ug/L	4.0	1		07/13/20 23:3	8 78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		07/13/20 23:3	8 142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	1		07/13/20 23:3	8 594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		07/13/20 23:3	8 563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		07/13/20 23:3	8 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	4.0	1		07/13/20 23:3	8 10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		07/13/20 23:3	8 60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		07/13/20 23:3	8 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		07/13/20 23:3	8 87-68-3	6M
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/13/20 23:3	8 98-82-8	
o-Isopropyltoluene	ND	ug/L	1.0	1		07/13/20 23:3		
Methylene Chloride	ND	ug/L	4.0	1		07/13/20 23:3		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		07/13/20 23:3		



#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Sample: HCL TRIP BLANK	Lab ID: 105	24484009	Collected: 07/09/2	20 00:00	Received: 0	7/10/20 10:10 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260D VOC	Analytical Meth	nod: EPA 82	260D					
	Pace Analytica	l Services -	Minneapolis					
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/13/20 23:38	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		07/13/20 23:38	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		07/13/20 23:38	103-65-1	
Styrene	ND	ug/L	1.0	1		07/13/20 23:38	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		07/13/20 23:38	630-20-6	6M
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/13/20 23:38	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		07/13/20 23:38	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		07/13/20 23:38	109-99-9	
Toluene	ND	ug/L	1.0	1		07/13/20 23:38	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:38	87-61-6	6M
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		07/13/20 23:38	120-82-1	6M
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/13/20 23:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/13/20 23:38	79-00-5	
Trichloroethene	ND	ug/L	0.40	1		07/13/20 23:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		07/13/20 23:38	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	4.0	1		07/13/20 23:38	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/13/20 23:38	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		07/13/20 23:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		07/13/20 23:38	108-67-8	
Vinyl chloride	ND	ug/L	0.20	1		07/13/20 23:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		07/13/20 23:38	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		07/13/20 23:38	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		07/13/20 23:38	95-47-6	
Surrogates		ū						
1,2-Dichloroethane-d4 (S)	101	%.	75-125	1		07/13/20 23:38	17060-07-0	
Toluene-d8 (S)	93	%.	75-125	1		07/13/20 23:38	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		07/13/20 23:38	460-00-4	



#### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

QC Batch: 686328 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water Dissolved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524484001, 10524484002, 10524484003, 10524484004, 10524484005, 10524484006, 10524484007,

10524484008

METHOD BLANK: 3670515 Matrix: Water

Associated Lab Samples: 10524484001, 10524484002, 10524484003, 10524484004, 10524484005, 10524484006, 10524484007,

10524484008

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Lead, Dissolved ug/L ND 10.0 07/14/20 17:07

LABORATORY CONTROL SAMPLE: 3670516

Spike LCS LCS % Rec Parameter Units Result % Rec Limits Qualifiers Conc. Lead, Dissolved ug/L 1000 949 95 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670517 3670518

MS MSD

10524484004 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Lead, Dissolved ND 95 20 1000 1000 954 962 96 75-125 ug/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

QC Batch: 686485 Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D Analysis Description: 8260D MSV 465 W

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524484001, 10524484002, 10524484003, 10524484004, 10524484005, 10524484006, 10524484007,

10524484008, 10524484009

METHOD BLANK: 3670942 Matrix: Water

Associated Lab Samples: 10524484001, 10524484002, 10524484003, 10524484004, 10524484005, 10524484006, 10524484007,

10524484008, 10524484009

_		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	07/13/20 22:47	6M
1,1,1-Trichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	
1,1-Dichloropropene	ug/L	ND	1.0	07/13/20 22:47	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	6M
1,2,3-Trichloropropane	ug/L	ND	4.0	07/13/20 22:47	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	6M
1,2,4-Trimethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	07/13/20 22:47	6M
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichloroethane	ug/L	ND	1.0	07/13/20 22:47	
1,2-Dichloropropane	ug/L	ND	4.0	07/13/20 22:47	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
1,3-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
1,3-Dichloropropane	ug/L	ND	1.0	07/13/20 22:47	
1,4-Dichlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
2,2-Dichloropropane	ug/L	ND	4.0	07/13/20 22:47	
2-Butanone (MEK)	ug/L	ND	5.0	07/13/20 22:47	
2-Chlorotoluene	ug/L	ND	1.0	07/13/20 22:47	
4-Chlorotoluene	ug/L	ND	1.0	07/13/20 22:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	07/13/20 22:47	
Acetone	ug/L	ND	20.0	07/13/20 22:47	
Allyl chloride	ug/L	ND	4.0	07/13/20 22:47	
Benzene	ug/L	ND	1.0	07/13/20 22:47	
Bromobenzene	ug/L	ND	1.0	07/13/20 22:47	
Bromochloromethane	ug/L	ND	1.0	07/13/20 22:47	
Bromodichloromethane	ug/L	ND	1.0	07/13/20 22:47	
Bromoform	ug/L	ND	4.0	07/13/20 22:47	6M
Bromomethane	ug/L	ND	4.0	07/13/20 22:47	
Carbon tetrachloride	ug/L	ND	1.0	07/13/20 22:47	6M
Chlorobenzene	ug/L	ND	1.0	07/13/20 22:47	
Chloroethane	ug/L	ND	1.0	07/13/20 22:47	4M
Chloroform	ug/L	ND	1.0	07/13/20 22:47	
Chloromethane	ug/L	ND	4.0	07/13/20 22:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

METHOD BLANK: 3670942 Matrix: Water

Associated Lab Samples: 10524484001, 10524484002, 10524484003, 10524484004, 10524484005, 10524484006, 10524484007,

10524484008, 10524484009

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	
cis-1,3-Dichloropropene	ug/L	ND	4.0	07/13/20 22:47	
Dibromochloromethane	ug/L	ND	1.0	07/13/20 22:47	6M
Dibromomethane	ug/L	ND	4.0	07/13/20 22:47	
Dichlorodifluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Dichlorofluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	07/13/20 22:47	
Ethylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	07/13/20 22:47	6M
Isopropylbenzene (Cumene)	ug/L	ND	1.0	07/13/20 22:47	
m&p-Xylene	ug/L	ND	2.0	07/13/20 22:47	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/13/20 22:47	
Methylene Chloride	ug/L	ND	4.0	07/13/20 22:47	
n-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
n-Propylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Naphthalene	ug/L	ND	4.0	07/13/20 22:47	
o-Xylene	ug/L	ND	1.0	07/13/20 22:47	
p-Isopropyltoluene	ug/L	ND	1.0	07/13/20 22:47	
sec-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Styrene	ug/L	ND	1.0	07/13/20 22:47	
tert-Butylbenzene	ug/L	ND	1.0	07/13/20 22:47	
Tetrachloroethene	ug/L	ND	1.0	07/13/20 22:47	
Tetrahydrofuran	ug/L	ND	10.0	07/13/20 22:47	
Toluene	ug/L	ND	1.0	07/13/20 22:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	07/13/20 22:47	
trans-1,3-Dichloropropene	ug/L	ND	4.0	07/13/20 22:47	
Trichloroethene	ug/L	ND	0.40	07/13/20 22:47	
Trichlorofluoromethane	ug/L	ND	1.0	07/13/20 22:47	
Vinyl chloride	ug/L	ND	0.20	07/13/20 22:47	
Xylene (Total)	ug/L	ND	3.0	07/13/20 22:47	
1,2-Dichloroethane-d4 (S)	%.	98	75-125	07/13/20 22:47	
4-Bromofluorobenzene (S)	%.	99	75-125	07/13/20 22:47	
Toluene-d8 (S)	%.	94	75-125	07/13/20 22:47	

LABORATORY CONTROL SAMPLE:	3670943					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L		15.7	78	75-128	7M
1,1,1-Trichloroethane	ug/L	20	17.7	89	75-128	
1,1,2,2-Tetrachloroethane	ug/L	20	17.3	86	69-129	
1,1,2-Trichloroethane	ug/L	20	19.0	95	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.9	95	74-125	
1,1-Dichloroethane	ug/L	20	21.4	107	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

LABORATORY CONTROL SAMPLE	E: 3670943	Spike	LCS	LCS	% Rec
Parameter	Units	Conc.	Result	% Rec	Limits Qualifiers
1,1-Dichloroethene	ug/L		18.8	94	65-125
1,1-Dichloropropene	ug/L	20	19.6	98	69-131
1,2,3-Trichlorobenzene	ug/L	20	15.3	77	75-125 7M
1,2,3-Trichloropropane	ug/L	20	17.5	87	75-125
1,2,4-Trichlorobenzene	ug/L	20	15.8	79	67-131 7M
1,2,4-Trimethylbenzene	ug/L	20	17.2	86	75-125
1,2-Dibromo-3-chloropropane	ug/L	50	35.4	71	65-128 7M
1,2-Dibromoethane (EDB)	ug/L	20	18.3	91	75-125
1,2-Dichlorobenzene	ug/L	20	17.2	86	75-125
1,2-Dichloroethane	ug/L	20	19.8	99	74-125
1,2-Dichloropropane	ug/L	20	19.2	96	68-125
1,3,5-Trimethylbenzene	ug/L	20	16.6	83	75-125
1,3-Dichlorobenzene	ug/L	20	16.4	82	75-125
1,3-Dichloropropane	ug/L	20	18.7	94	75-125
1,4-Dichlorobenzene	ug/L	20	17.6	88	75-125
2,2-Dichloropropane	ug/L	20	16.3	81	70-133
2-Butanone (MEK)	ug/L	100	108	108	62-142
2-Chlorotoluene	ug/L	20	17.3	87	75-125
4-Chlorotoluene	ug/L	20	16.8	84	75-125 75-125
4-Methyl-2-pentanone (MIBK)	ug/L ug/L	100	98.0	98	75-125 75-125
Acetone	ug/L	100	116	116	47-150
Allyl chloride	ug/L	20	19.2	96	65-125
Renzene	ug/L	20	19.8	99	75-125
Bromobenzene	ug/L	20	17.0	85	75-125 75-125
Bromochloromethane		20	20.1	100	75-125 75-125
Bromodichloromethane	ug/L	20	17.1	85	75-125 75-128
Bromoform	ug/L				
	ug/L	20	13.8	69 96	75-125 7M,L2 43-150
Bromomethane	ug/L	20	19.2		
Carbon tetrachloride	ug/L	20	14.8 17.2	74	75-127 7M,L2 75-125
Chlorobenzene	ug/L	20		86	
Chloroethane	ug/L	20	27.2	136	72-130 5M,L3
Chloroform	ug/L	20	18.4	92	75-125
Chloromethane	ug/L	20	20.2	101	55-128
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125
cis-1,3-Dichloropropene	ug/L	20	18.1	91	74-132
Dibromochloromethane	ug/L	20	15.2	76	75-125 7M
Dibromomethane	ug/L	20	18.3	91	71-137
Dichlorodifluoromethane	ug/L	20	22.0	110	69-126
Dichlorofluoromethane	ug/L	20	22.5	112	75-125
Diethyl ether (Ethyl ether)	ug/L	20	20.7	104	72-125
Ethylbenzene	ug/L	20	18.4	92	75-125
Hexachloro-1,3-butadiene	ug/L	20	14.7	74	74-129 7M
sopropylbenzene (Cumene)	ug/L	20	18.2	91	75-125
m&p-Xylene	ug/L	40	36.1	90	74-125
Methyl-tert-butyl ether	ug/L	20	20.2	101	69-125
Methylene Chloride	ug/L	20	21.0	105	72-125
n-Butylbenzene	ug/L	20	17.4	87	75-128

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

ABORATORY CONTROL SAMPLE:	3670943					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
-Propylbenzene	ug/L	20	17.8	89	75-125	
aphthalene	ug/L	20	16.0	80	70-125	
ylene	ug/L	20	18.3	91	75-125	
opropyltoluene	ug/L	20	16.6	83	75-125	
-Butylbenzene	ug/L	20	17.1	85	75-127	
rene	ug/L	20	18.4	92	75-125	
Butylbenzene	ug/L	20	17.0	85	75-125	
achloroethene	ug/L	20	16.5	82	74-125	
ahydrofuran	ug/L	200	210	105	73-132	
ne	ug/L	20	17.5	87	75-125	
-1,2-Dichloroethene	ug/L	20	19.2	96	69-125	
s-1,3-Dichloropropene	ug/L	20	17.1	85	69-130	
nloroethene	ug/L	20	18.1	91	75-127	
lorofluoromethane	ug/L	20	21.5	108	71-132	
l chloride	ug/L	20	20.0	100	65-128	
ne (Total)	ug/L	60	54.4	91	75-125	
ichloroethane-d4 (S)	%.			102	75-125	
omofluorobenzene (S)	%.			97	75-125	
ene-d8 (S)	%.			94	75-125	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 3670	944		3670945	;						
			MS	MSD								
	1	0524484004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	17.1	16.8	85	84	71-128	2	30	7M
1,1,1-Trichloroethane	ug/L	ND	20	20	20.8	20.2	104	101	75-144	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	17.4	91	87	63-125	4	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.9	19.2	99	96	75-125	3	30	
1,1,2- Trichlorotrifluoroethane	ug/L	ND	20	20	22.8	21.2	114	106	69-141	7	30	
1,1-Dichloroethane	ug/L	ND	20	20	23.4	22.8	117	114	68-125	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	21.8	20.8	109	104	62-135	5	30	
1,1-Dichloropropene	ug/L	ND	20	20	22.4	21.5	112	108	61-147	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	14.9	14.3	75	71	59-145	4	30	7M
1,2,3-Trichloropropane	ug/L	ND	20	20	18.2	17.7	91	88	69-125	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	15.7	14.8	78	74	59-144	6	30	7M
1,2,4-Trimethylbenzene	ug/L	ND	20	20	18.5	17.2	92	86	56-139	7	30	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	38.3	37.6	77	75	64-125	2	30	7M
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.4	18.3	92	91	71-125	1	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	18.1	16.7	90	84	74-125	8	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.5	20.1	103	100	64-125	2	30	
1,2-Dichloropropane	ug/L	ND	20	20	21.1	20.3	105	102	63-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	18.0	16.6	90	83	63-132	8	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	18.0	16.6	90	83	74-125	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	19.2	19.0	96	95	75-125	1	30	

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#### **REPORT OF LABORATORY ANALYSIS**

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Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

MATRIX SPIKE & MATRIX SF	PIKE DUPI	LICATE: 3670			3670945							
			MS	MSD								
Parameter	Units	10524484004 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
I,4-Dichlorobenzene	ug/L	ND	20	20	18.5	17.1	93	86	73-125	8	30	
2,2-Dichloropropane	ug/L	ND	20	20	18.6	18.2	93	91	64-145	2	30	
2-Butanone (MEK)	ug/L	ND	100	100	89.2	90.8	89	91	39-125	2	30	
2-Chlorotoluene	ug/L	ND	20	20	19.0	17.6	95	88	68-128	8		
I-Chlorotoluene	ug/L	ND	20	20	18.2	16.9	91	84	71-128	8	30	
1-Methyl-2-pentanone MIBK)	ug/L	ND	100	100	96.7	95.5	97	95	65-125	1	30	
Acetone	ug/L	ND	100	100	77.3	74.5	76	74	32-133	4	30	
Allyl chloride	ug/L	ND	20	20	21.4	21.4	107	107	61-125	0	30	
Benzene	ug/L	ND	20	20	21.8	21.2	109	106	63-125	3	30	
Bromobenzene	ug/L	ND	20	20	18.4	17.3	92	87	75-125	6	30	
Bromochloromethane	ug/L	ND	20	20	20.7	20.7	103	104	67-125	0	30	
Bromodichloromethane	ug/L	ND	20	20	19.1	18.6	96	93	67-139	3	30	
Bromoform	ug/L	ND	20	20	14.9	15.4	75	77	75-125	3	30	7M
Bromomethane	ug/L	ND	20	20	19.5	20.8	98	104	50-150	7	30	
Carbon tetrachloride	ug/L	ND	20	20	18.0	17.8	90	89	70-148	1	30	7M
Chlorobenzene	ug/L	ND	20	20	18.6	18.2	93	91	75-125	2	30	
Chloroethane	ug/L	ND	20	20	30.5	27.7	153	138	62-142	10	30	5M, N
Chloroform	ug/L	ND	20	20	20.1	19.3	100	97	67-125	4	30	
Chloromethane	ug/L	ND	20	20	21.7	21.0	109	105	43-140	4	30	
sis-1,2-Dichloroethene	ug/L	ND	20	20	21.2	21.5	106	108	64-134	2	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.0	19.0	95	95	68-129	0	30	
Dibromochloromethane	ug/L	ND	20	20	16.1	16.1	81	81	71-137	0	30	7M
Dibromomethane	ug/L	ND	20	20	19.3	18.9	97	95	66-130	2	30	
Dichlorodifluoromethane	ug/L	ND	20	20	24.5	22.1	123	111	61-144	10	30	
Dichlorofluoromethane	ug/L	ND	20	20	24.1	22.5	120	113	68-125	7	30	
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	21.7	21.4	109	107	57-127	2		
Ethylbenzene	ug/L	ND	20	20	20.0	19.4	100	97	66-128	3	30	
lexachloro-1,3-butadiene	ug/L	ND	20	20	15.1	13.3	76	66	52-150	13		7M
sopropylbenzene Cumene)	ug/L	ND	20	20	19.9	18.9	99	95	73-138	5		
n&p-Xylene	ug/L	ND	40	40	39.8	38.8	99	97	62-133	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.3	20.4	102	102	60-125	0	30	
Methylene Chloride	ug/L	ND	20	20	22.1	21.2	110	105	59-125	4	30	
n-Butylbenzene	ug/L	ND	20	20	18.4	17.2	92	86	68-146	7	30	
n-Propylbenzene	ug/L	ND	20	20	19.7	18.1	98	91	72-132	8	30	
Naphthalene	ug/L	ND	20	20	16.8	16.6	84	83	55-135	1	30	
-Xylene	ug/L	ND	20	20	19.6	19.3	98	97	66-128	2	30	
-Isopropyltoluene	ug/L	ND	20	20	18.2	16.9	91	85	69-139	7		
sec-Butylbenzene	ug/L	ND	20	20	18.7	17.5	94	88	69-149	7		
Styrene	ug/L	ND	20	20	19.4	18.9	97	94	75-126	3		
ert-Butylbenzene	ug/L	ND	20	20	18.5	17.3	93	86	67-147	7		
Tetrachloroethene	ug/L	ND	20	20	18.7	17.4	94	87	70-141	7		
Tetrahydrofuran	ug/L	ND	200	200	215	209	108	105	64-128	3		
Toluene	ug/L	ND	20	20	19.3	18.8	96	93	64-125	3		
rans-1,2-Dichloroethene	ug/L	ND	20	20	21.4	21.1	107	106	62-135	1		

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#### **REPORT OF LABORATORY ANALYSIS**

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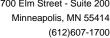
Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

MATRIX SPIKE & MATRIX SF	IKE DOI E	ICATE: 3670	MS	MSD	3670945							
		10524484004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
trans-1,3-Dichloropropene	ug/L	ND	20	20	18.1	17.6	90	88	69-125	2	30	
Trichloroethene	ug/L	ND	20	20	20.1	19.3	100	96	69-141	4	30	
Trichlorofluoromethane	ug/L	ND	20	20	24.0	21.9	120	109	61-148	9	30	
Vinyl chloride	ug/L	ND	20	20	21.8	21.3	109	106	56-144	2	30	
Xylene (Total)	ug/L	ND	60	60	59.5	58.1	99	97	64-131	2	30	
1,2-Dichloroethane-d4 (S)	%.						98	101	75-125			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						94	94	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

QC Batch: 686473

QC Batch Method: EPA Mod. 3510C

Analysis Method: EPA 8270E by SIM

Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524484001, 10524484002, 10524484004, 10524484005, 10524484006, 10524484007, 10524484008

METHOD BLANK: 3670888 Matrix: Water

Associated Lab Samples: 10524484001, 10524484002, 10524484004, 10524484005, 10524484006, 10524484007, 10524484008

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1,4-Dioxane (SIM) ND 0.25 07/14/20 19:18 ug/L 1,4-Dioxane-d8 (S) 32 30-125 07/14/20 19:18 %.

LABORATORY CONTROL SAMPLE: 3670889

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) ug/L 10 11.3 113 32-128 1,4-Dioxane-d8 (S) 30-125 37 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670890 3670891 MS MSD 10524484004 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L ND 10 10 12.2 13.0 120 128 32-130 30 1,4-Dioxane-d8 (S) 30-125 %. 35 31

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670892 3670893 MS MSD 10524485006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result % Rec % Rec **RPD** RPD Qual Result Conc. Conc. Result Limits 1,4-Dioxane (SIM) 10 13.2 ug/L ND 10 13.8 121 127 32-130 5 1,4-Dioxane-d8 (S) %. 19 17 30-125 ЗМ

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30-125

30-125

28

33

26

32





#### **QUALITY CONTROL DATA**

2606-0017 Water Gremlin SRI Project:

Pace Project No.: 10524484

1,4-Dioxane-d8 (S)

1,4-Dioxane-d8 (S)

Date: 07/24/2020 05:59 AM

QC Batch: 686956

QC Batch Method: EPA Mod. 3510C Analysis Method: EPA 8270E by SIM

Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524484003

METHOD BLANK: Matrix: Water

%.

%.

Associated Lab Samples: 10524484003

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1,4-Dioxane (SIM) ND 0.25 07/16/20 16:46 ug/L 1,4-Dioxane-d8 (S) 35 30-125 07/16/20 16:46 %.

LABORATORY CONTROL SAMPLE: 3673409

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 9.8 98 ug/L 32-128 1,4-Dioxane-d8 (S) 30 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3673410 3673411 MS MSD 10524992001 Spike Spike MS MSD MS MSD % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual 1,4-Dioxane (SIM) ug/L ND 10 10 11.2 11.5 110 113 32-130 3 30

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3673412 3673413 MS MSD 10524485006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec **RPD** RPD Qual Result Limits 1,4-Dioxane (SIM) 20 21.7 32-130 3 ug/L ND 20 22.3 108 112

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### REPORT OF LABORATORY ANALYSIS

S0

P1



#### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **ANALYTE QUALIFIERS**

Date: 07/24/2020 05:59 AM

1M	Internal standard and surrogate recovery outside laboratory control limits due to emulsion.
2M	Reanalysis conducted within EPA method holding time. Results confirm original analysis.
3M	Surrogate recovery outside laboratory control limits due to emulsion.
4M	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. Analyte presence below reporting limits in associated samples. No impact to data.
5M	The continuing calibration for this analyte exceeded 20% difference acceptance criteria for EPA method. The result may be biased high.
6M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. Instrument sensitivity verified with reporting limit check.
7M	The continuing calibration for this analyte is below 20% difference acceptance criteria for EPA method 8260D but within 50% of the true value. The result may be biased low.
8M	The sample was analyzed at a dilution due to a large amount of sediment in the vials.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.
S0	Surrogate recovery outside laboratory control limits.



#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI

Pace Project No.: 10524484

Date: 07/24/2020 05:59 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524484001	Risate-070920	EPA 3010A	686328	EPA 6010D	686476
10524484002	GP-50 (15-18)	EPA 3010A	686328	EPA 6010D	686476
10524484003	GP-50 (35-38)	EPA 3010A	686328	EPA 6010D	686476
10524484004	GP-50 (45-47)	EPA 3010A	686328	EPA 6010D	686476
10524484005	GP-50 (58-60)	EPA 3010A	686328	EPA 6010D	686476
10524484006	GP-50 (78-80)	EPA 3010A	686328	EPA 6010D	686476
10524484007	DUP_070920	EPA 3010A	686328	EPA 6010D	686476
10524484008	GP-50 (98-100)	EPA 3010A	686328	EPA 6010D	686476
10524484001	Risate-070920	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484002	GP-50 (15-18)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484003	GP-50 (35-38)	EPA Mod. 3510C	686956	EPA 8270E by SIM	687260
10524484004	GP-50 (45-47)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484005	GP-50 (58-60)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484006	GP-50 (78-80)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484007	DUP_070920	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484008	GP-50 (98-100)	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524484001	Risate-070920	EPA 8260D	686485		
10524484002	GP-50 (15-18)	EPA 8260D	686485		
10524484003	GP-50 (35-38)	EPA 8260D	686485		
10524484004	GP-50 (45-47)	EPA 8260D	686485		
10524484005	GP-50 (58-60)	EPA 8260D	686485		
10524484006	GP-50 (78-80)	EPA 8260D	686485		
10524484007	DUP_070920 <sup>°</sup>	EPA 8260D	686485		
10524484008	GP-50 (98-100)	EPA 8260D	686485		
10524484009	HCL TRIP BLANK	EPA 8260D	686485		

2001004899 2001004899 2001004899 3001004899  $(N/\lambda)$ Pace Project No./ Lab I.D. 2001664899 DRINKING WATER 7001001699 SAMPLE CONDITIONS  $(N/\lambda)$ OTHER Soaled Cooler Custody MO#:10524484 F-ALL-Q-020r\* v. 07 (N/Y) eat Received on GROUND WATER Көзі Tomp in °C Page: Z 02 REGULATORY AGENCY RCRA TIME 010 Requested Analysis Filtered (Y/N) 7/10/13 10524484 DATE Signed OHOR ( DATE STATE Site Location NPDES CHAIN-OF-CUSTODY / Analytical Request Document UST The Chain of Clustody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. ACCEPTED BY / AFFILIATION メメメ 10CE メメメ 女 人人人 accounting @wenck. com メメメ **メメ**ナ **メ**ナナ メメメ Dissolved lead での t test zisylsnAt N/A Holcows RH Methanol <sub>E</sub>O<sub>S</sub>S<sub>S</sub>BN Preservatives HOBN 300 M ₩ HCI M M PRINT Name of SAMPLER: Benjamin HINO3 Invoice Information Company Name: <sup>b</sup>OS<sup>2</sup>H Pace Quote
Reference:
Pace Project
Manager:
Pace Profile #: TIME Section C Unpreserved ھ 5 و. Attention: Address: 00 σ **®** 6 # OF CONTAINERS σ SAMPLER NAME AND SIGNATURE SIGNATURE OF SAMPLER:  $\overline{\sigma}$ 27 SAMPLE TEMP AT COLLECTION DATE ENCOFSK! COMPOSITE END/GRAB TANDOK! MONT SRI DATE COLLECTED किन्तार RELINQUISHED BY / AFFILIATION Grewlin COPY TO: A Or On Bentier, Kelly 6 1/8/12 1/80 Waterwan WT 6 7/9/20 1300 WA G 7/9/20 1145 WTG 7/9/20 1230 WT G 7 19/20 1340 WT 6 79/20 1415 TIME 2606-0017 COMPOSITE START Ben Hokamk Project Name: Nacher Required Project Information: Report To: S Vane SAMPLE TYPE (G=GRAB C=COMP) urchase Order No.: 5513 \(\text{\te}\}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\xitil\}\\ \text{\texi}\\ \text{\text{\text{\texi}\text{\text{\texi}\\ \text{\text{\texit{\text{\texi}\text{\texi}\text{\text{\texi}\text{\text{\text{\text{\tex{ MATRIX CODE Project Number Section B SWISY Valid Matrix Codes reed WATER WATER g nail To: Swatermanayench. com DRINKINB WASTER WASTER PRODUC SOIL/SOIL OIL WIPE AIR OTHER TISSUE 250 Plemeer Creek Ct \* Dissched lead samples Profesto - 070920 ADDITIONAL COMMENTS Standard impany: Wanch Asseciates 35-38) (45-49) (A-Z, 0-97, -) Sample IDs MUST RE UNIQUE (08-9t Fax: n/a 15-18 Playn, MN SAMPLE ID ace Analytical" filtered \* Section D Required Client Information ione 612-710-8021 Binsate GP-50/ quired Client Information: quested Due Date/TAT: GR-501 GP-50 CP-5c dress: 1800 Maroke 8 Page 34 of 37 N. 0



## **Document Name:**

# Sample Condition Upon Receipt (SCUR) - MN

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

# Document No.: ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Wenck Associa	<b>+0.</b>	Project #:	WO#: 10524484
Courier: Fed Ex UPS Pace SpeeDe  Tracking Number:	USPS	Client See Exceptions	PM: AKA Due Date: 07/17/20 CLIENT: WENCK
· · · · · · · · · · · · · · · · · · ·	No Seals	_	XNo Biological Tissue Frozen? ☐Yes ☐No XN/A
Packing Material: Bubble Wrap Bubble B		Other:	- - $-$ -
	<del>-</del>		Temp Blank? \( \sum_\text{Yes}  \text{No} \)
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459 ☐ T4(0254) ☑ T5(0489)	туре от ісе:		Blue None Dry Melted
Did Samples Originate in West Virginia?   Yes No			en? _Yes _No XN/A
Temp should be above freezing to 6°C Cooler Temp Re  Correction Factor: 700 Cooler Temp Correct	ead w/temp blank:_ ed w/temp blank :_		OC Average Corrected Temp  (no temp blank only): ☐ See Exceptions  OC ☐ 1 Container
USDA Regulated Soil: ( N/A, water sample/Other:	ted States: AL, AR, CA	<b>Date/In</b> , FL, GA, Did sai ☑No Hawaii	itials of Person Examining Contents:
	<u> </u>		COMMENTS:
Chain of Custody Present and Filled Out?	Yes □No XYes □No	1.	
Chain of Custody Relinquished?	<del></del>	2.	The state of the s
Sampler Name and/or Signature on COC? Samples Arrived within Hold Time?	V= =	N/A 3. 4.	
Short Hold Time Analysis (<72 hr)?	Yes ∐No ☐Yes XNo	5. <b>□</b> Fe	cal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome
Rush Turn Around Time Requested?	□Yes <b>¥</b> No		Days
Sufficient Volume?	¥Yes □No	7.	
Correct Containers Used?	X Yes □No	8.	
-Pace Containers Used?	Yes No		
Containers Intact?	Yes No	9.	
Field Filtered Volume Received for Dissolved Tests?	Yes □No [	N/A 10. Is se	ediment visible in the dissolved container? Yes
Is sufficient information available to reconcile the samples to the COC?  Matrix: Water K Soil Oil Other	<del></del>		write ID/ Date/Time on Container Below: See Exception
All containers needing acid/base preservation have been checked?	Yes □No [	N/A 12. Sample	le#SW-22 ph'd at 3.0
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	□Yes No [		] NaOH ★ HNO₃ □H₂SO₄ □Zinc Acetate
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	Yes □No [	□N/A Positive for Chlorine?  Res. Chlorine	or Res. Yes See Exception No pH Paper Lot#
Extra labels present on soil VOA or WIDRO containers?	Yes □No [		See Exception
Headspace in VOA Vials (greater than 6mm)?		N/A	10 1 010 10
Trip Blank Present?			rape trip blanks, 1500) try blank
Trip Blank Custody Seals Present?	Yes No [	N/A Pace	e Trip Blank Lot # (if purchased): 29789
CLIENT NOTIFICATION/RESOLUTION Person Contacted:	2504405 T	Date/Ti	
Comments/Resolution: COC 2/2 is project 10	15∠4485. The bel	ow comments	on the exceptions form refer to samples on 10524485
Project Manager Positions	ww Osp	7	Pote: 7/44/2020
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carolina (did, incorrect preservative, out of temp, incorrect containers).		a copy of this form	Date: 7/14/2020 will be sent to the North Carolina DEHNR Certification Office ( i.e out of

Labeled by: \_

Page 35 of 37

# Pace Analytical®

#### Document Name:

# Sample Condition Upon Receipt (SCUR) Exception Form

Document Revised: 04Jun2020

Page 1 of 1

Document No.: ENV-FRM-MIN4-0142 Rev.01 Pace Analytical Services -Minneapolis

SCUR Exceptions: Sam	nples mi	essing, e	xtra.	Sampli	cs, out	of Phywo	rkord	ler #:		
Sample ID Out of Temp Sample IDs	Container Type	# of Containers			PM N	otified?	Yes 🗀	]No		
Missing Samples		·	gille Shir MSEL	If yes,		ho was co			time.	
SW-28-MKZ 7-10.					lf no, i	ndicate re	ason w	hy.		
2M-51	DRN								;	
SCH-26 (non vials)	AGSV	2,		RA	nikiala ca	oler Proje	245 TST		es chicas vigue 3.	ner er i
300 20 [101/1913]				i i	you answered	yes, fill out in	formation	to the left.		
Extra Samples					lkir relilika sistema a arta	CZ (Selfs C	erica de Secretor			
					i de dan e	No Temp	Blank		100 10	
SW- 23	BP3N	y	Re	ead Temp	Cor	rected Te	mp	Ave	erage Te	emp
	A 65V	Z								
One BRZN has time				<del></del>						
at 1645. Rest at 1834	<del>}</del>		-							
			┧ └──	40 0			ļ			
OUT OF PI	4		Issu	e Type:			Con	tainer	1	of
Tracking Number/	<del>/ Temperatur</del> e	PH)		n - m and by sulfational community and	mple ID		– Zuskannen	ype		ainers
SW-22 1BP3	<del></del>	3.0	CSL-HLI VARIBINI	III government in the second		X 197	. Estarallagueses	- · · · · · · · · · · · · · · · · · · ·		Street Street Street Street
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					74.78 11			;		
			1	· · · · · · · · · · · · · · · · · · ·		,				
	pH Ad	justment	Log for	Preserv	ed Sam	ples			·	
		pН			Amoun			1	v9	
	Туре с	of Upon	Date	Time	t Added	Lot#	pH	In Comp		
Sample ID	Preser	v. Receipt	Adjusted	Adjusted	(mL)	Added	After	after ad		Initials
					i			LIYes	□No	
								Yes	□No	
								<u>                                   </u>		ļ
								Yes	□No	
				_				Yes	□No	
Commonts			<u>.</u> .	<u>L</u>	<u> </u>					
Comments:										•



# Document Name: **Headspace Exception**

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Document Revised: 26Mar2020 Page 1 of 1

Pace Analytical Services - **Minneapolis** 

Document No.: ENV-FRM-MIN4-0140 Rev.00

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
GP-50(1518)	0	1.	5	6	Y
GP-50 (35-38)	3	1	2	6	Y
GP-50 (78-88)	0	2	y	6	<b>Y</b>
GP-SD (98-100)	3	0	3	6	Y
				·	
	<del></del>				





August 14, 2020

Aaron Benker Wenck Associates 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

#### Dear Aaron Benker:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

This report was revised on August 14, 2020, to include lead by 6020B on sample SW-23.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

(612)607-1700 Project Manager

Enclosures

cc: Ben Holcomb, Wenck Associates Kelly Jaworski, Wenck Associates, Inc. Mr. Shane Waterman, Wenck Associates, Inc.







#### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680

California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: 03086 Louisiana DW Certification #: MN00064

Maine Certification #: MN00064 Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

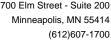
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C

Wyoming UST Certification #: via A2LA 2926.01

Wisconsin Certification #: 999407970





#### **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524485001	SED-23	Solid	07/09/20 16:45	07/10/20 10:10
10524485002	SED-24	Solid	07/09/20 17:50	07/10/20 10:10
10524485003	SW-22	Water	07/09/20 17:50	07/10/20 10:10
10524485004	SW-DUP-070920	Water	07/09/20 00:00	07/10/20 10:10
10524485005	SED-25	Solid	07/09/20 18:20	07/10/20 10:10
10524485006	SW-23	Water	07/09/20 18:30	07/10/20 10:10
10524485007	SED-26	Solid	07/09/20 18:20	07/10/20 10:10
10524485008	SW-24	Water	07/09/20 19:00	07/10/20 10:10
10524485009	SED-27	Solid	07/09/20 19:30	07/10/20 10:10
10524485010	MeOH TRIP BLANK	Solid	07/09/20 00:00	07/10/20 10:10



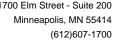
#### **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10524485001	SED-23	EPA 6010D	DCF	1
		ASTM D2974	JDL	1
		EPA 8260D	ML4	4
10524485002	SED-24	EPA 6010D	DCF	1
		ASTM D2974	JDL	1
		EPA 8260D	ML4	4
10524485003	SW-22	EPA 6010D	DM	2
		EPA 8270E by SIM	ZT	2
10524485004	SW-DUP-070920	EPA 6010D	DM	2
		EPA 8270E by SIM	ZT	2
10524485005	SED-25	EPA 6010D	DCF	1
		ASTM D2974	JDL	1
		EPA 8260D	ML4	4
10524485006	SW-23	EPA 6010D	DM	2
		EPA 6020B	WBS	1
		EPA 8270E by SIM	ZT	2
10524485007	SED-26	EPA 6010D	DCF	1
		ASTM D2974	DCF	1
		EPA 8260D	ML4	4
10524485008	SW-24	EPA 6010D	DM	2
		EPA 8270E by SIM	ZT	2
10524485009	SED-27	EPA 6010D	DCF	1
		ASTM D2974	JDL	1
		EPA 8260D	ML4	4
10524485010	MeOH TRIP BLANK	EPA 8260D	ML4	4

PASI-M = Pace Analytical Services - Minneapolis





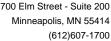
#### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SED-23	Lab ID: 105	24485001	Collected: 07/09/2	0 16:4	5 Received: 07	7/10/20 10:10 N	/latrix: Solid	
Results reported on a "dry weight"	basis and are adj	usted for per	cent moisture, sa	mple s	size and any dilu	tions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	nod: EPA 6010	DD Preparation Me	thod: E	EPA 3050B			
	Pace Analytica	l Services - M	inneapolis					
Lead	86.1	mg/kg	1.2	1	07/13/20 09:34	07/15/20 17:05	7439-92-1	
Dry Weight / %M by ASTM D2974	Analytical Meth	nod: ASTM D2	2974					
	Pace Analytica	l Services - M	linneapolis					
Percent Moisture	60.1	%	0.10	1		07/13/20 14:26		N2
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 8260	DD Preparation Me	thod: E	EPA 5035/5030B			
	Pace Analytica	l Services - M	inneapolis					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	mg/kg	41.5	1	07/15/20 10:03	07/15/20 16:14	123-91-1	
1,2-Dichloroethane-d4 (S)	109	%.	75-125	1	07/15/20 10:03	07/15/20 16:14	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1	07/15/20 10:03	07/15/20 16:14	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	1	07/15/20 10:03	07/15/20 16:14	460-00-4	





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SED-24	Lab ID: 105	24485002	Collected: 07/09/2	0 17:5	0 Received: 07	7/10/20 10:10 N	latrix: Solid	
Results reported on a "dry weight"	basis and are adj	usted for per	cent moisture, sa	mple s	size and any dilu	tions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	nod: EPA 6010	DD Preparation Me	thod: E	EPA 3050B			
	Pace Analytica	l Services - M	inneapolis					
Lead	4.3	mg/kg	0.63	1	07/13/20 09:34	07/15/20 17:07	7439-92-1	
Dry Weight / %M by ASTM D2974	Analytical Meth	nod: ASTM D2	2974					
	Pace Analytica	l Services - M	linneapolis					
Percent Moisture	24.5	%	0.10	1		07/13/20 14:26		N2
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 8260	DD Preparation Me	thod: E	EPA 5035/5030B			
	Pace Analytica	l Services - M	linneapolis					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	mg/kg	16.2	1	07/15/20 10:03	07/15/20 16:34	123-91-1	
1,2-Dichloroethane-d4 (S)	111	%.	75-125	1	07/15/20 10:03	07/15/20 16:34	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1	07/15/20 10:03	07/15/20 16:34	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1	07/15/20 10:03	07/15/20 16:34	460-00-4	





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SW-22	Lab ID: 1052	4485003	Collected: 07/09/2	20 17:50	Received: 07	7/10/20 10:10 N	fatrix: Water	•
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	od: EPA 601	0D Preparation Me	ethod: E	EPA 3010A			
	Pace Analytical	Services - N	/linneapolis					
Lead	618	ug/L	10.0	1	07/15/20 06:57	07/16/20 10:42	7439-92-1	
Total Hardness by 2340B	151000	ug/L	3300	1	07/15/20 06:57	07/16/20 10:42		
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 827	OE by SIM Prepara	ation Me	ethod: EPA Mod. 3	3510C		
	Pace Analytical	Services - N	Minneapolis					
1,4-Dioxane (SIM) Surrogates	ND	ug/L	0.50	1	07/15/20 16:32	07/16/20 19:11	123-91-1	
1,4-Dioxane-d8 (S)	36	%.	30-125	1	07/15/20 16:32	07/16/20 19:11		P1





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SW-DUP-070920	Lab ID: 1052	24485004	Collected: 07/09/2	20 00:00	Received: 07	7/10/20 10:10 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	od: EPA 601	0D Preparation Me	ethod: E	EPA 3010A			
	Pace Analytical	Services - M	finneapolis					
Lead	802	ug/L	10.0	1	07/15/20 06:57	07/16/20 10:44	7439-92-1	
Total Hardness by 2340B	151000	ug/L	3300	1	07/15/20 06:57	07/16/20 10:44	•	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 827	0E by SIM Prepara	ation M	ethod: EPA Mod. 3	3510C		
	Pace Analytical	Services - M	/linneapolis					
1,4-Dioxane (SIM) Surrogates	ND	ug/L	0.25	1	07/13/20 15:24	07/15/20 00:27	123-91-1	
1,4-Dioxane-d8 (S)	30	%.	30-125	1	07/13/20 15:24	07/15/20 00:27		

700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SED-25	Lab ID: 105	24485005	Collected: 07/09/2	0 18:2	0 Received: 07	7/10/20 10:10 N	//atrix: Solid	
Results reported on a "dry weight"	basis and are adj	usted for pe	rcent moisture, sa	mple s	size and any dilu	tions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	nod: EPA 601	0D Preparation Me	thod: E	EPA 3050B			
	Pace Analytica	l Services - M	linneapolis					
Lead	26.0	mg/kg	0.71	1	07/13/20 09:34	07/15/20 17:12	7439-92-1	
Dry Weight / %M by ASTM D2974	Analytical Meth	nod: ASTM D2	2974					
	Pace Analytica	l Services - M	linneapolis					
Percent Moisture	33.3	%	0.10	1		07/13/20 14:26		N2
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 826	0D Preparation Me	thod: E	EPA 5035/5030B			
	Pace Analytica	l Services - M	linneapolis					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	mg/kg	20.0	1	07/15/20 10:03	07/15/20 16:54	123-91-1	
1,2-Dichloroethane-d4 (S)	110	%.	75-125	1	07/15/20 10:03	07/15/20 16:54	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1	07/15/20 10:03	07/15/20 16:54	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1	07/15/20 10:03	07/15/20 16:54	460-00-4	

(612)607-1700



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SW-23	Lab ID: 1052	24485006	Collected: 07/09/2	20 18:30	Received: 07	7/10/20 10:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	od: EPA 60	010D Preparation M	ethod: E	PA 3010A			
	Pace Analytical	Services -	Minneapolis					
Lead	ND	ug/L	10.0	1	07/15/20 06:57	07/16/20 10:46	7439-92-1	
Total Hardness by 2340B	107000	ug/L	3300	1	07/15/20 06:57	07/16/20 10:46	6	
6020B MET ICPMS	Analytical Meth	od: EPA 60	20B Preparation Me	ethod: El	PA 3020A			
	Pace Analytical	Services -	Minneapolis					
Lead	2780	ug/L	0.50	5	08/11/20 15:04	08/12/20 15:59	7439-92-1	P6
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	270E by SIM Prepar	ation Me	thod: EPA Mod. 3	3510C		
•	Pace Analytical	Services -	Minneapolis					
1,4-Dioxane (SIM)	1.1	ug/L	0.25	1	07/13/20 15:24	07/15/20 00:48	3 123-91-1	
1,4-Dioxane (SIM) <b>Surrogates</b>	ND	ug/L	0.50	1	07/15/20 16:32	07/16/20 19:32	2 123-91-1	
1,4-Dioxane-d8 (S)	37	%.	30-125	1	07/15/20 16:32	07/16/20 19:32	2	P1
1,4-Dioxane-d8 (S)	21	%.	30-125	1	07/13/20 15:24	07/15/20 00:48	3	1M

(612)607-1700



### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SED-26	Lab ID: 105	24485007	Collected: 07/09/2	0 18:2	0 Received: 07	7/10/20 10:10 N	/latrix: Solid	
Results reported on a "dry weight"	basis and are adj	usted for per	rcent moisture, sa	mple s	size and any dilu	tions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010D MET ICP	Analytical Meth	nod: EPA 6010	OD Preparation Me	thod: I	EPA 3050B			
	Pace Analytica	I Services - M	linneapolis					
Lead	23.6	mg/kg	0.59	1	07/24/20 15:09	07/24/20 18:12	7439-92-1	
Dry Weight / %M by ASTM D2974	Analytical Meth	nod: ASTM D2	2974					
	Pace Analytica	I Services - M	linneapolis					
Percent Moisture	21.9	%	0.10	1		07/24/20 15:17		N2
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 8260	DD Preparation Me	thod: I	EPA 5035/5030B			
	Pace Analytica	l Services - M	linneapolis					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	mg/kg	15.5	1	07/15/20 10:03	07/15/20 12:55	123-91-1	
1,2-Dichloroethane-d4 (S)	104	%.	75-125	1	07/15/20 10:03	07/15/20 12:55	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1	07/15/20 10:03	07/15/20 12:55	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1	07/15/20 10:03	07/15/20 12:55	460-00-4	





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SW-24	Lab ID: 1052	24485008	Collected: 07/09/2	20 19:00	Received: 07	//10/20 10:10 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	,		0D Preparation M	ethod: E	PA 3010A			
	Pace Analytical	Services - IV	linneapolis					
Lead	4040	ug/L	10.0	1	07/15/20 06:57	07/16/20 10:54	7439-92-1	
Total Hardness by 2340B	765000	ug/L	3300	1	07/15/20 06:57	07/16/20 10:54		
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 827	0E by SIM Prepar	ation Me	ethod: EPA Mod. 3	3510C		
	Pace Analytical	Services - M	linneapolis					
1,4-Dioxane (SIM) Surrogates	ND	ug/L	0.25	1	07/13/20 15:24	07/15/20 01:50	123-91-1	
1,4-Dioxane-d8 (S)	27	%.	30-125	1	07/13/20 15:24	07/15/20 01:50	)	2M

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### **ANALYTICAL RESULTS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: SED-27	Lab ID: 105	24485009	Collected: 07/09/2	0 19:3	0 Received: 07	7/10/20 10:10 M	latrix: Solid	
Results reported on a "dry weight"	basis and are adj	usted for per	rcent moisture, sa	mple :	size and any dilu	tions.		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	nod: EPA 601	OD Preparation Me	thod: I	EPA 3050B			
	Pace Analytica	l Services - M	linneapolis					
Lead	5.5	mg/kg	0.64	1	07/13/20 09:34	07/15/20 17:15	7439-92-1	
Dry Weight / %M by ASTM D2974	Analytical Meth	nod: ASTM D2	2974					
	Pace Analytica	l Services - M	linneapolis					
Percent Moisture	25.4	%	0.10	1		07/13/20 14:27		N2
8260D MSV 5030 Med Level	Analytical Meth	nod: EPA 8260	DD Preparation Me	thod: I	EPA 5035/5030B			
	Pace Analytica	l Services - M	linneapolis					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	mg/kg	16.7	1	07/15/20 10:03	07/15/20 17:13	123-91-1	
1,2-Dichloroethane-d4 (S)	110	%.	75-125	1	07/15/20 10:03	07/15/20 17:13	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1	07/15/20 10:03	07/15/20 17:13	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1	07/15/20 10:03	07/15/20 17:13	460-00-4	



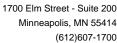


Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Sample: MeOH TRIP BLANK	Lab ID: 105	24485010	Collected: 07/09/2	20 00:00	Received: 07	/10/20 10:10 N	fatrix: Solid	
Results reported on a "wet-weigh	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV 5030 Med Level	Analytical Met Pace Analytica		0D Preparation Me Iinneapolis	ethod: E	EPA 5035/5030B			
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	mg/kg	10.0	1	07/15/20 10:03	07/15/20 12:13	123-91-1	
1,2-Dichloroethane-d4 (S)	105	%.	75-125	1	07/15/20 10:03	07/15/20 12:13	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1	07/15/20 10:03	07/15/20 12:13	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-125	1	07/15/20 10:03	07/15/20 12:13	460-00-4	





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

QC Batch: 686336 Analysis Method: EPA 6010D

QC Batch Method: EPA 3050B Analysis Description: 6010D Solids

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485001, 10524485002, 10524485005, 10524485009

METHOD BLANK: 3670544 Matrix: Solid

Associated Lab Samples: 10524485001, 10524485002, 10524485005, 10524485007, 10524485009

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead mg/kg ND 0.49 07/15/20 16:52

LABORATORY CONTROL SAMPLE: 3670545

Spike LCS LCS % Rec Conc. Result Limits Qualifiers Parameter Units % Rec Lead 49 49.0 100 80-120 mg/kg

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3670546 3670547

MS MSD

10524123027 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Result Result **RPD** RPD Qual Result Conc. % Rec % Rec Limits 20 M1 Lead mg/kg 175 53.2 52.8 182 206 13 59 75-125 12

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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**QUALITY CONTROL DATA** 

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

QC Batch: 689081 Analysis Method: EPA 6010D

QC Batch Method: EPA 3050B Analysis Description: 6010D Solids

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485007

METHOD BLANK: 3685207 Matrix: Solid

Associated Lab Samples: 10524485007

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers

Lead mg/kg ND 0.48 07/24/20 18:08

LABORATORY CONTROL SAMPLE: 3685208

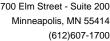
Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead 46.7 48.7 104 80-120 mg/kg

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3685209 3685210

MS MSD

10524485007 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits 86.7 20 Lead mg/kg 23.6 64 61 87.1 98 104 75-125 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





2606-0017 Water Gremlin-Revised Report Project:

Pace Project No.: 10524485

Lead

Date: 08/14/2020 05:39 PM

QC Batch: 686846 Analysis Method: **EPA 6010D** QC Batch Method: **EPA 3010A** Analysis Description: 6010D Water

> Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485003, 10524485004, 10524485006, 10524485008

METHOD BLANK: Matrix: Water Associated Lab Samples: 10524485003, 10524485004, 10524485006, 10524485008

> Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead ND 10.0 07/16/20 10:35 ug/L

LABORATORY CONTROL SAMPLE: 3672986

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead ug/L 1000 1020 102 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3672987 3672988

ug/L

MSD MS

1000

10524485006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Result Result % Rec **RPD** RPD Qual Result Conc. % Rec Limits ND

991

1000

99

100

75-125

20

1000

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### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin-Revised Report

**EPA 3020A** 

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

QC Batch Method:

QC Batch: 691672

Analysis Method:
Analysis Description:

nalysis Description: 6020B Water UPD5

EPA 6020B

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485006

METHOD BLANK: 3697909 Matrix: Water

Associated Lab Samples: 10524485006

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lead ug/L ND 0.10 08/12/20 15:53

LABORATORY CONTROL SAMPLE: 3697910

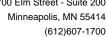
Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead ug/L 100 98.9 99 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3697911 3697912

MS MSD

10524485006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Conc. Limits 20 P6 Lead ug/L 2780 100 100 2720 2690 -57 -83 75-125

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

QC Batch: 686413 Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485001, 10524485002, 10524485005, 10524485009

SAMPLE DUPLICATE: 3670743

10524358003 Dup Max RPD RPD Qualifiers Parameter Units Result Result 24.9 Percent Moisture % 25.3 2 30 N2

SAMPLE DUPLICATE: 3670744

Date: 08/14/2020 05:39 PM

		10523698006	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Percent Moisture	%	1.6	1.4	17	3	0 N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

QC Batch: 689082 Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974 Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485007

SAMPLE DUPLICATE: 3685215

Date: 08/14/2020 05:39 PM

ParameterUnits10524485007 ResultDup ResultMax RPDMax RPDPercent Moisture%21.921.1430N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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**QUALITY CONTROL DATA** 

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

QC Batch: 686903 Analysis Method: EPA 8260D

QC Batch Method: EPA 5035/5030B Analysis Description: 8260D MSV 5030 Med Level

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524485001, 10524485002, 10524485005, 10524485007, 10524485009, 10524485010

METHOD BLANK: 3673176 Matrix: Solid

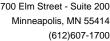
Associated Lab Samples: 10524485001, 10524485002, 10524485005, 10524485007, 10524485009, 10524485010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg	ND	10.0	07/15/20 11:34	
1,2-Dichloroethane-d4 (S)	%.	103	75-125	07/15/20 11:34	
4-Bromofluorobenzene (S)	%.	108	75-125	07/15/20 11:34	
Toluene-d8 (S)	%.	98	75-125	07/15/20 11:34	

LABORATORY CONTROL SAMPLE:  Parameter	3673177 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	mg/kg		21.6	108	44-141	
1,2-Dichloroethane-d4 (S)	%.			98	75-125	
4-Bromofluorobenzene (S)	%.			108	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SF	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3673178 3673179											
			MS	MSD								
	1	0524485007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	mg/kg	ND	25.6	25.2	25.1	27.3	98	108	46-150	8	30	
1,2-Dichloroethane-d4 (S)	%.						102	101	75-125			
4-Bromofluorobenzene (S)	%.						106	110	75-125			
Toluene-d8 (S)	%.						101	100	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin-Revised Report

EPA Mod. 3510C

Pace Project No.: 10524485

QC Batch Method:

QC Batch: 686473

Analysis Method:

Laboratory:

EPA 8270E by SIM

Analysis Description:

8270E Water 14 Dioxane by SIM

Pace Analytical Services - Minneapolis

10524485004, 10524485006, 10524485008 Associated Lab Samples:

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

Parameter

10524485004, 10524485006, 10524485008

Units

Blank Result Reporting Limit

11.3

3670891

MS

Result

12.2

Analyzed

Qualifiers

1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S) ug/L %.

ND 32

0.25 07/14/20 19:18 30-125 07/14/20 19:18

LABORATORY CONTROL SAMPLE:

Parameter

3670889

Units

10524484004

Result

Spike LCS Conc. Result

LCS % Rec % Rec Limits

Qualifiers

1.4-Dioxane (SIM) 1,4-Dioxane-d8 (S)

ug/L %.

3670890

10

MS MSD

Spike Spike Conc. Conc.

10

MSD Result MS MSD

% Rec

Max RPD

1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S)

Parameter

ug/L %.

Units

10

10

% Rec 13.0

113

37

% Rec 120 128

32-128

30-125

Limits **RPD** 

Qual 32-130 30

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3670892

ND

3670893

35

MSD

30-125

MS

ND

Spike

Conc.

10

MSD

MSD

% Rec

Max **RPD** RPD Qual

Parameter 1,4-Dioxane (SIM) 1,4-Dioxane-d8 (S)

10524485006 Units Result

ug/L

%.

Spike Conc.

MS Result

Result 13.2 13.8

MS % Rec 121

19

% Rec Limits 127

17

31

32-130

5

30-125 2M

Date: 08/14/2020 05:39 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### **QUALITY CONTROL DATA**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

QC Batch: 686956

Analysis Method:

QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water 14 Dioxane by SIM

Laboratory: Pace Analytical Services - Minneapolis

EPA 8270E by SIM

Associated Lab Samples: 10524485003, 10524485006

METHOD BLANK: 3673408 Matrix: Water

Associated Lab Samples: 10524485003, 10524485006

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1,4-Dioxane (SIM) ND 0.25 07/16/20 16:46 ug/L 1,4-Dioxane-d8 (S) 35 30-125 07/16/20 16:46 %.

LABORATORY CONTROL SAMPLE: 3673409

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (SIM) 10 9.8 98 ug/L 32-128 1,4-Dioxane-d8 (S) 30 30-125 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3673410 3673411 MS MSD 10524992001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (SIM) ug/L ND 10 10 11.2 11.5 110 113 32-130 3 30 1,4-Dioxane-d8 (S) 30-125 %. 26 28 S<sub>0</sub>

3673413 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3673412 MS MSD 10524485006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result % Rec % Rec **RPD** RPD Qual Result Limits 1,4-Dioxane (SIM) 20 21.7 3 ug/L ND 20 22.3 108 112 32-130 1,4-Dioxane-d8 (S) %. 32 33 30-125 P1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 08/14/2020 05:39 PM

1M	Internal standard and surrogate recov	ery outside laborator	y control limits due to emuslion.

2M Surrogate recovery outside laboratory control limits due to emulsion.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.

P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the

spike level.

S0 Surrogate recovery outside laboratory control limits.

(612)607-1700



### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin-Revised Report

Pace Project No.: 10524485

Date: 08/14/2020 05:39 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524485001 10524485002 10524485005	SED-23 SED-24 SED-25	EPA 3050B EPA 3050B EPA 3050B	686336 686336 686336	EPA 6010D EPA 6010D EPA 6010D	686488 686488 686488
10524485007	SED-26	EPA 3050B	689081	EPA 6010D	689139
10524485009	SED-27	EPA 3050B	686336	EPA 6010D	686488
10524485003 10524485004 10524485006 10524485008	SW-22 SW-DUP-070920 SW-23 SW-24	EPA 3010A EPA 3010A EPA 3010A EPA 3010A	686846 686846 686846 686846	EPA 6010D EPA 6010D EPA 6010D EPA 6010D	687003 687003 687003 687003
10524485006	SW-23	EPA 3020A	691672	EPA 6020B	691999
10524485001 10524485002 10524485005	SED-23 SED-24 SED-25	ASTM D2974 ASTM D2974 ASTM D2974	686413 686413		
10524485007	SED-26	ASTM D2974	689082		
10524485009	SED-27	ASTM D2974	686413		
10524485003	SW-22	EPA Mod. 3510C	686956	EPA 8270E by SIM	687260
10524485004 10524485006	SW-DUP-070920 SW-23	EPA Mod. 3510C EPA Mod. 3510C	686473 686473	EPA 8270E by SIM EPA 8270E by SIM	686600 686600
10524485006	SW-23	EPA Mod. 3510C	686956	EPA 8270E by SIM	687260
10524485008	SW-24	EPA Mod. 3510C	686473	EPA 8270E by SIM	686600
10524485001 10524485002 10524485005 10524485007 10524485009	SED-23 SED-24 SED-25 SED-26 SED-27	EPA 5035/5030B EPA 5035/5030B EPA 5035/5030B EPA 5035/5030B EPA 5035/5030B	686903 686903 686903 686903	EPA 8260D EPA 8260D EPA 8260D EPA 8260D EPA 8260D	687706 687706 687706 687706 687706

Pace Project No./ Lab I.D. DRINKING WATER (N/Y) 794 Samples Intact SAMPLE CONDITIONS F-ALL-C-010-rev.00, 09Nov2017 OTHER MO#: 10524485 (N/X) 300 010 Custody Sealed Cooler EST. 3 B <u>-3</u> > ર્ડે থ 3 Ice (Y/N) **GROUND WATER** Received on к<del>о</del>Ы D Ŋ O° ni qm⊕T Page: REGULATORY AGENCY RCRA 1010 Requested Analysis Filtered (Y/N) TIME 10524485 . . Site Location STATE NPDES ij CHAIN-OF-CUSTODY / Analytical Request Document 25/20 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. DATE NST ACCEPTED BY / AFFILIATION 100 ACT MORPHOSES メメメ ANO SK ব্ৰাপ দুস্তা t JesT sisylsnA N/A Other Methanol mportant Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1,5% per month for any invidees got pad within 30 days. Preservatives Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> HOBN HCI Invoice Information: HNO3 Company Name: <sup>⊅</sup>OS<sup>Z</sup>H Pace Quote Reference: Pace Project Manager: Pace Profile #: Section C (Ce)\Z Unpreserved Attention: Address: TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE Box Helous SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: DATE COMPOSITE END/GRAB Chamile JAWASCI-WENCE COLLECTED DATE PANKE \$100-00g RELINQUISHED BY / AFFILIATION 8 8 THUROTEK COMPOSITE START roject Name: WHA DATE CO MON Section B Required Project Information: (G=GRAB C=COMP) SAMPLE TYPE Project Number: (see valid codes to left) MATRIX CODE 1 Report To: ORIGINAL latrix Codes Drinking Water
Waster
Waster
Waster
Waster
Soil/Sblid
Oil
Wipe
Air
Air
Air
Other LANK 名 Marchall Marchall CAR ADDITIONAL COMMENTS (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE SAMPLEID フとる 100000 Section D
Required Client Information Reoffested Due Date TA Section A hone: Page 26 of 29 # Mati 9 6 10 Ŧ œ



### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

## ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Client Name:  Wenck Associated	<b>+0</b> .		Pro	oject #:	MO:	#:10	0524485	
Courier: Fed Ex UPS	<b>دی ب</b> ا :U∏		 <b>∑</b> ICI	iont	PM: A	and the second	Due Date: 07	7/17/20
Pace SpeeDec		ommercia			CLIEN	T: WENCH		
Tracking Number:			[		V.			
Custody Seal on Cooler/Box Present?	No	Sea	ls Intact	?	s 🗓 No	Biolog	gical Tissue Frozen?	]Yes □No <b>X</b> N/A
Packing Material: Bubble Wrap Bubble B	ags [	None	☐Oth	er:			Temp Blank?	XYes □No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         T4(0254) ☒ T5(0489)		Type of le	ce: 🍹	₫wet	□Blue	□None	☐Dry ☐Melted	
Did Samples Originate in West Virginia? ☐Yes 💆 No					<b>ken?</b> □Yes	□No 🔀	N/A	
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blank:	2.0	,2.7		°C	Average Corrected Te	•
Correction Factor: 700 Cooler Temp Correcte	ed w/tem	ıp blank :	2.1	7,21		ºc	(no temp blank onl	y): See Exceptions  1 Container
USDA Regulated Soil: ( N/A, water sample/Other: ) Date/Initials of Person Examining Contents:								
							COMMENTS:	
Chain of Custody Present and Filled Out? Chain of Custody Relinquished?	Yes Yes	∐No □No		1. 2.				
Sampler Name and/or Signature on COC?	Yes	□No	□n/a	3.				
Samples Arrived within Hold Time?	Yes	□No		4.				
Short Hold Time Analysis (<72 hr)?	□Yes	MNo	***************************************				otal Coliform/E coli BOD, te Orthophos Other	/cBOD Hex Chrome
Rush Turn Around Time Requested?	∐Yes	¥ZNo		6. 5 ·	1 Days	<b>,</b>		
Sufficient Volume?	¥Yes	□No		7.				
Correct Containers Used?	Yes	□No		8.				
-Pace Containers Used?	Yes	□No						
Containers Intact?	¥Yes	—⊟No-	20/2/114/46/15/15/15/15	9			CONT. (A. C. )	
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	□N/A	10. Is	sediment v	isible in the	dissolved container?	Yes No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No		11. If no	, write ID/ D	ate/Time on (	Container Below:	See Exception
Matrix: Water Soil Oil Other	· ·							
All containers needing acid/base preservation have been checked?	Yes	□No	□N/A	12. Sam	ple #SW	-22 ph	'd 4430	
All containers needing preservation are found to be in	□vas	XINO	□n/a		NaOH	<b>★</b> HN0	O₃ ∏H₂SO₄	Zinc Acetate
compliance with EPA recommendation?		ANO				1,50,00	24. us	
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)				B 21.	ر		, , (b) , ) !	San Evenution
Exceptions: VOA Coliform, TOC/DOC Oil and Grease,	Yes	□No	□n/a	Chlorine	for Res. 🔲		oH Paper Lot#	See Exception
DRO/8015 (water) and Dioxin/PFAS				Res. Chi	<del> </del>	0-6 Roll 2036) 9	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	Yes	∏No	□N/A	13.				See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	∐No	∐N/A	11.01	1	rip blan	1/2 15 m 1 4 m 1	Dair N
Trip Blank Present? Trip Blank Custody Seals Present?	Yes	∐No ∐No	□n/a □n/a				urchased): 24789	Υ
CLIENT NOTIFICATION/RESOLUTION Person Contacted:			<u> </u>	Date/				res No
Comments/Resolution: COC 1/2 is project 105	24485.	Client v	vas not			SW-21 w	as not submitted.	:
*		_			· · · · · · · · · · · · · · · · · · ·			
Project Manager Review:  Jobs: Whenever there is a discrepancy affecting North Carolina old, incorrect preservative, out of temp, incorrect containers).	complianc	ce samples	S, a copy o	of this form			14/2020 Carolina DEHNR Certific	Affabe 27 of 29



### **Document Name:**

### Sample Condition Upon Receipt (SCUR) Exception Form

Document No.: ENV-FRM-MIN4-0142 Rev.01 Document Revised: 04Jun2020 Page 1 of 1

Pace Analytical Services -Minneapolis

SCUR Exceptions:	Sampl	es misson	y, EXtra	Samples	, Out of Phyworkorder #:
Sample ID	C	ontainer #/o	of		PM Notified?  Yes No

SCUR Exceptions: San	iples mi	ssing, e	extra	Sampl	cs, out	of PHWO	rkord	er #:		
Sample ID Out of Femp Sample IDs	Container Type	# of Container			PMN	otified?	]Yes 🗀	No.		
Missim Samples	(State of the State of the Stat		Flate Section (Supplement)	If yes,	indicate v	vho was co	ntacte	d/date/t	ime.	
SW-23-MKZ 7-10-	20					indicate re				
5W2	BRN	1						-		
	AGSV	2,							1	
SCD-26 (non vials)						ooler Proje I yes, fill out in				
Extra Samples			Polity in Triangle							<b>W</b> .'
				a como de la como de l La como de la como dela como de la como dela como de la como dela como dela como de la como dela como de la como dela como de		No Temp	Blank		eset (1021e) Constante d	
SW- 23	BP3N	4	R	ead Temp	Co	rrected Te	mp	Ave	rage Te	emp
	ABSV	Z								
One BRIN has time										
at 1645. Rest at 1830										
SW-23 has water sample	A 65V	2		: :			Remunical Investor (no	sides of the country of the	en a processor de la compansión de la comp	
OUT OF PM				e Type:			Con	tainer	#	of
- Tracking Number/	<del>Femperatur</del> e		100 mg 120 mg 100 mg 120 mg	Sa	mple ID		T)	/pe	Cont	ainers
SW-22 1BP3	N	3.0								
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a										
7 77 37 37 37			┪ ├──					<u>-</u>		
<u> </u>										
- 10-00-00-00-00-00-00-00-00-00-00-00-00-0	pH Adj	ustment	Log for	Preserv	ed Sam	ples		1		
		рН	_		Amoun				W.	
Sample ID	Type or Preserv		Date Adjusted	Time	t Added	Lot#	pΗ	In Compl		Indial.
Jample 15	rieseiv	. Receipt	Aujusteu	Adjusted	(mL)	Added	After	after add		Initials
								[] [E3		
1917								Yes [	No	
								Yes	No	
-								Yes [	No	
Comments:										
				·						· · · · · · · · · · · · · · · · · · ·
		,								



# Document Name: **Headspace Exception**

Document Revised: 26Mar2020 Page 1 of 1

Document No.:

ENV-FRM-MIN4-0140 Rev.00

Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
GP-50(15-18)	0	1	5	6	Y
GP-50 (35-38)	3	1	2	6	$\vee$
GP-50 (78-88)	0	2	y	6	}/
GP-SD (98-100)	3	0	3	6	Y
		3			
				18 18 18 18 18 18 18 18 18 18 18 18 18 1	
					Page 20 of 20





August 14, 2020

Mr. Shane Waterman Wenck Associates, Inc. 1802 Wooddale Drive Suite 100 Woodbury, MN 55125

RE: Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Dear Mr. Waterman:

Enclosed are the analytical results for sample(s) received by the laboratory on July 15, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Minneapolis

This report was revised on August 14, 2020, to include lead by 6020B on sample SW-21.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 

cc: Aaron Benker, Wenck
Ben Holcomb, Wenck Associates
Kelly Jaworski, Wenck Associates Inc







### **CERTIFICATIONS**

Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01 Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929

CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-

053-137

Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts DWP Certification #: via MN 027-053-137

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647

North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C

Wyoming UST Certification #: via A2LA 2926.01

Wisconsin Certification #: 999407970





### **SAMPLE SUMMARY**

Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524981001	SW-21	Water	07/15/20 14:30	07/15/20 15:09





### **SAMPLE ANALYTE COUNT**

Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Lab ID Sa	ample ID	Method	Analysts	Analytes Reported
10524981001 S	W-21	EPA 6010D	 IP	2
		EPA 6020B	WBS	1
		EPA 8270E by SIM	ZT	2

PASI-M = Pace Analytical Services - Minneapolis





Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Date: 08/14/2020 05:40 PM

Sample: SW-21	Lab ID: 1052	4981001	Collected: 07/15/2	20 14:30	Received: 07	7/15/20 15:09 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Meth	od: EPA 60	10D Preparation Me	ethod: E	PA 3010A			
Pace Analytical Services - Minneapolis								
Lead	ND	ug/L	10.0	1	07/16/20 14:52	07/19/20 14:49	7439-92-1	
Total Hardness by 2340B	87600	ug/L	3300	1	07/16/20 14:52	07/19/20 14:49		
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3020A								
	Pace Analytical	Services -	Minneapolis					
Lead	0.62	ug/L	0.10	1	08/11/20 15:04	08/12/20 16:14	7439-92-1	
8270E MSSV 14 Dioxane By SIM	Analytical Meth	od: EPA 82	70E by SIM Prepara	ation Me	ethod: EPA Mod. 3	3510C		
·	Pace Analytical	Services -	Minneapolis					
1,4-Dioxane (SIM) Surrogates	0.35	ug/L	0.25	1	07/15/20 16:32	07/16/20 20:34	123-91-1	
1,4-Dioxane-d8 (S)	33	%.	30-125	1	07/15/20 16:32	07/16/20 20:34		





Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Date: 08/14/2020 05:40 PM

QC Batch: 687105 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D Water

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524981001

METHOD BLANK: 3674459 Matrix: Water

Associated Lab Samples: 10524981001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Lead ug/L ND 10.0 07/19/20 14:45

LABORATORY CONTROL SAMPLE: 3674460

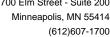
Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Lead ug/L 1000 976 98 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3674461 3674462

MS MSD

10524981001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits ND 20 Lead ug/L 1000 1000 979 980 98 98 75-125 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





2606-0017 Water Gremlin SRI-Revised Report Project:

Pace Project No.: 10524981

QC Batch: 691672

QC Batch Method: **EPA 3020A**  Analysis Method: EPA 6020B

Analysis Description:

6020B Water UPD5

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524981001

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

Lead

Lead

Date: 08/14/2020 05:40 PM

10524981001

Blank

Parameter Units Reporting Limit

Qualifiers Analyzed

ND 0.10 08/12/20 15:53 ug/L

LABORATORY CONTROL SAMPLE:

Parameter

3697910

Units

Spike Conc.

Result

LCS Result

LCS % Rec % Rec Limits

MS

% Rec

-57

Qualifiers

Lead ug/L 100 98.9 99 80-120

3697911

2780

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MSD

100

10524485006 Parameter Units Result

ug/L

MS Spike Conc.

100

Spike Conc.

MS Result

3697912

2720

MSD Result

2690

MSD % Rec

-83

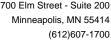
% Rec Limits

75-125

Max **RPD** 

RPD Qual 20 P6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

QC Batch: 686956 Analysis Method:

EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C Analysis Description:

8270E Water 14 Dioxane by SIM

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10524981001

METHOD BLANK: 3673408

Date: 08/14/2020 05:40 PM

Matrix: Water

Associated Lab Samples:

10524981001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (SIM)	ug/L	ND	0.25	07/16/20 16:46	
1,4-Dioxane-d8 (S)	%.	35	30-125	07/16/20 16:46	

LABORATORY CONTROL SAMPLE:	3673409					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (SIM)	ug/L		9.8	98	32-128	
1,4-Dioxane-d8 (S)	%.			30	30-125	

MATRIX SPIKE & MATRIX S	PIKE DUPLI	ICATE: 3673	410		3673411							
			MS	MSD								
		10524992001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (SIM)	ug/L	ND	10	10	11.2	11.5	110	113	32-130	3	30	
1,4-Dioxane-d8 (S)	%.						26	28	30-125			S0

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 3673	412		3673413							
	1	0524485006	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
_			- 1	- 1	_	_	_	_				
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (SIM)	ug/L	ND	20	20	21.7	22.3	108	112	32-130	3	30	
1,4-Dioxane-d8 (S)	%.						32	33	30-125			P1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 08/14/2020 05:40 PM

P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

S0 Surrogate recovery outside laboratory control limits.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2606-0017 Water Gremlin SRI-Revised Report

Pace Project No.: 10524981

Date: 08/14/2020 05:40 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524981001	SW-21	EPA 3010A	687105	EPA 6010D	687445
10524981001	SW-21	EPA 3020A	691672	EPA 6020B	691999
10524981001	SW-21	EPA Mod. 3510C	686956	EPA 8270E by SIM	687260

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Company: We Address:   Boo			, ,							IIIVOICE IIIIOITIIAIIOII.	mation.											
Segundass.	Company: Wenck ASSOCIATES		Report To: Shading	Spall	الد ا	Waterman	53			Attention:	3CC	accountnogniseach, com	ন্ত্ৰেজ	enckı	8				,	2301	2301906	
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Maple	de Plan, MN		Ben Holcomb	#		<u>رم</u>	`			Address:		•				NPDES	L S	GROUN	GROUND WATER	T DRI	DRINKING WATER	œ.
Email To:	Schooterman & Viench. com		urchase Or	rder No.:					on Ma	Pace Quote Reference:						T UST	L	RCRA		T OTHER	照 	
Phone.	Phone: Phone Post Fax:		Project Name:	e: Wc	Wader	Gre	Grewlin	SRI		Pace Project Manager:						Site Location	tion					
Request	Requested Due Date/TAT: Stay clard		Project Number:		90%	2606-0017	7			Pace Profile	 					STATE	TĒ:	Σ				
ŀ													$\vdash$	Requ	ested A	Requested Analysis Filtered (Y/N)	iltered (	(N/A				
Seci	Section D Required Client Information	Matrix Codes MATRIX / CODE	es DOE			. ö	COLLECTED	٥			Preser	Preservatives	<b>†</b> N /A									
- · · · · · · · · · · · · · · · · · · ·		Drinking Water Water Waste Water Product Soil/Solid	WM MZ	ee valid codes t	ōS <sup>S</sup>	COMPOSITE		COMPOSITE	ОГГЕСТІОИ	9			1		229Ab				(N/A)			
ø # <b>W</b> ∃	Sample IDs MUST BE UNIQUE	Wipe Air Tissue Other	PAR SP						D TA 9MBT B19N	PE CONTAINER:				4-010xw		· · · · · · · · · · · · · · · · · · ·			eninoldO laubi			•
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12											-											
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# Pace Analytical®

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Labeled by: CEG

Page 12 of 12

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt  Client Name:  Wenck Asso			Pr	oject #:			<u> 105249</u>		
Courier:	U:		— ☑CI al See Ex						
Tracking Number:			[		X.			<u></u>	
Custody Seal on Cooler/Box Present? Yes	No	Sea	als Intact	? 🔲Yes	⊠N∘	Biolog	gical Tissue Frozen?	Yes No N/A	
Packing Material: DBubble Wrap Bubble Ba	ags [	None	□Oth				Temp Blank?	_	
Thermometer:		Type of I			Blue	□None	□Dry □Melt	ed	
Did Samples Originate in West Virginia? ☐Yes ☐No				Temps Tak	en? 🗌 Yes	□No /Ľ	N/A		
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blank	<b>:</b>	23		ºc	Average Corrected	•	
Correction Factor: Cooler Temp Correcte	d w/tem	ıp blank	<u>:</u>	23		oc	(no temp blank	only): See Exceptions  C	
USDA Regulated Soil: / N/A, water sample/Other:		)		Date/In	itials of Po	erson Exan	nining Contents:		
Did samples originate in a quarantine zone within the Unit	ed States	: AL, AR,					foreign source (intern		
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m			□No	Hawai	ii and Puert	o Rico)?	□Yes □N		
If Yes to either question, fill out a I	Regulate	d Soil Ch	ecklist (F	-MN-Q-33	8) and inc	lude with S	CUR/COC paperwo	ork.	
				ļ			COMMENTS:		
Chain of Custody Present and Filled Out?	Yes	□No		1.			1.00	***	
Chain of Custody Relinquished?	Yes	∏No		2.					
Sampler Name and/or Signature on COC?	Yes	No_	□N/A	3.					
Samples Arrived within Hold Time?	Yes	□No		4.			*****		
Short Hold Time Analysis (<72 hr)?	∐Yes	ĮΝο					otal Coliform/E coli 🔲 E ite 🔲 Orthophos 🔲 Otl	BOD/cBOD Hex Chrome	
Rush Turn Around Time Requested?	∐Yes	Nο		6.				***	
Sufficient Volume?	Yes	□No		7.					
Correct Containers Used?	Yes	□No		8.					
-Pace Containers Used?	Yes	□No							
Containers Intact?	Yes	□No		9.			. 31.0.2	<del></del>	
Field Filtered Volume Received for Dissolved Tests?	□Yes	—— □No	` <b>∑</b> N/A	10 10 0	ediment vi	sible in the	dissolved container?	Yes No	
Is sufficient information available to reconcile the samples	Щтез		LXIV/A				Container Below:	See Exception	
to the COC?	Yes	□No		,		a.c,c o	oontainer below.		
Matrix: Water Soil Oil Other	4							_	
All containers needing acid/base preservation have been	Yes	□No	N/A	12. Samp	le#		****	···	
checked?	Hies					7			
						0	-		
All containers needing preservation are found to be in	Yes	□No	□N/A		NaOH	MH 🔼	O₃ ∏H₂SO₄	Zinc Acetate	
compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	`								
(rivo3, ri2304, \2ph, NaOn >9 Suilide, NaOn>12 Cyanide)				Positive fo	or Bos 🖂	Yes		See Exception	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	☐Yes	□No	<b>∑</b> N/A	Chlorine?	_		pH Paper Lot#		
DRO/8015 (water) and Dioxin/PFAS			./	Res. Chlor		0-6 Roll	0-6 Strip	0-14 Strip	
						21360		0 14 36115	
Extra labels present on soil VOA or WIDRO containers?	∐Yes	□No	<b>©</b> N/A	13.				See Exception	
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	N/A						
Trip Blank Present?	☐Yes	□No	MN/A	14.	- T.:- P! !	. 1 - 4 4 7 5	lana		
Trip Blank Custody Seals Present?	Yes	□No	□ N/A	Pace	e irip Blani	Lot # (if pu			
CLIENT NOTIFICATION/RESOLUTION						Field	Data Required?	∐Yes	
Person Contacted:		-		Date/Ti	me:				
Comments/Resolution:									
Project Manager Pauleum		11-							
Project Manager Review:	compliant	~P		of this faces	Date:	4-4	7/16/2020	Ministry Office 11	
hold, incorrect preservative, out of temp, incorrect containers).	compliant	e sample.	s, a copy o	י נוווג וסרווז יכ	will be sent	to the North	i Carolina DEHNK Cert	inication Office ( i.e. out of	

# Residential Well Laboratory Reports and Chain-of Custody Documentation





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
10526539001	798675	Drinking Water	07/28/20 13:22	07/28/20 14:33	





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526539001	798675	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

Date: 08/05/2020 01:21 PM

Sample: 798675	Lab ID: 105	26539001	Collected: 07/28/2	0 13:22	Received: 07	/28/20 14:33	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane  Analytical Method: EPA 522 Preparation Method: EPA 522  Pace Analytical Services - Ormond Beach								
	i ace Analytica	ai Services -	Official Deach					
1,4-Dioxane (p-Dioxane)	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 09:44	123-91-1	
Surrogates								

(612)607-1700



#### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

Date: 08/05/2020 01:21 PM

QC Batch: 653465

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526539001

METHOD BLANK: 3552677 Matrix: Water

Associated Lab Samples: 10526539001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/04/20 08:26 ug/L 1,4-Dioxane-d8 (S) 103 70-130 08/04/20 08:26 %

LABORATORY CONTROL SAMPLE: 3552678 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887 MS MSD 10526688001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 21.4 21 22.2 104 70-130 20 ug/L 21.9 104 1,4-Dioxane-d8 (S) % 111 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526539

Date: 08/05/2020 01:21 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526539

Date: 08/05/2020 01:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526539001	798675	EPA 522	653465	EPA 522	653821

CHAIN-OF-CUSTODY / Analytical Request Document

Face Analytical

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Ĩ WO#:10526539 Page: Residual Chlorine (Y/V) 2 Received on في LEWP IN C 128 1933 2507 19/2 10526539 2000 DATE Signed: 7/28/22 1 annika.asp@pacelabs.com, 622 1,4-dioxene NA OSHTON Jedio Methanol GISON Preservatives Nezszos Pace Quote:
Pace Project Manager: a
Pace Profile #: 39664, 4 HOBN Invoice Information: Attention: HCI Company Name: Address: HNO3 252 H5204 Section C 98 Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE SIGNATURE of SAMPLER: SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: 1/25/26 Project Name: Water Grenlin Well Sampling - 2606-0017 大路大 8 系 822 COLLECTED TIME 10-1/28/PE START Required Project Information: Report To: Kelly Jawarski SAMPLE TYPE (G-GRAB C-COMP) Purchase Order# MATRIX CODE (see valid codes to left) Section B Copy To: MATRIX
Distring Water
Water
Wasse Weter
Product
Product
Product
Oil
Wige
Air
Chie STD School One Character per box. (A-Z, 0-9 /, -). Sample lds must be unique 1800 Pioneer Creek Center SAMPLE ID ADDITIONAL COMME Wenck Associates, Inc. 22986 tait kjaworski@wenok.com cne: NONE rquested Due Date: STT) equired Client Information: sis to be performed at Pace FL ple Plain, MN 55359

Page 9 of 12

(N/A) Samples Intact

Sealed Cooler LVAN

(N/A)

# Pace Analytical®

#### **Document Name:**

#### Sample Condition Upon Receipt (SCUR) - MN

Document Revised: 27Mar2020 Page 1 of 1

Pace Analytical Services -Minneapolis

Page 10 of 12

Labeled by: CEC

#### Document No.: ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Client Name:  Wen ck			Pr	roject #:	WO#	: 10	526 <b>5</b> 39	3
Courier:	=	SPS ommerci	 ☑Cl al See Ex		PM: AKA CLIENT:	WENCK	Due Date: 0	8/04/20
Tracking Number:	-P			니 _ L			<del></del>	
	No	Sea	als Intact	t? Yes	⊠No B	liological T	issue Frozen? 🔲	res □No □N/A
Packing Material: Bubble Wrap Bubble B	ags [	None	☐Oth	ner:		ד	Гетр Blank? 🖊	JYes □No
Thermometer:         ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)           T4(0254) ☐ T5(0489)	1	Type of I	ce:	Z Wet □	]Blue	one 🔲 D	ory Melted	
Did Samples Originate in West Virginia?   Yes	We	ere All Co	ntainer	Temps Take	en? ∐Yes □No	Ñ/A	· · · · · · · · · · · · · · · · · · ·	
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ter	np blank	:	118	(	1	age Corrected Ten	•
Correction Factor: <u>-0; 2</u> Cooler Temp Correcte	ed w/ten	np blank	<u>;</u>	1,6		C (no	o temp blank only) 0C	: See Exceptions  1 Container
USDA Regulated Soil: ( / N/A, water sample/Other:		)		Date/Ini	tials of Person	Examining	Contents: 77	7282e
Did samples originate in a quarantine zone within the Unit				-			source (internationa	illy, including
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a		Yes d Soil Ch	No ecklist (l		and Puerto Rico)		Yes No	
res to dialor question, in out a		u 3011 C11	ecklist (1	- V  V-Q-336	and include w		MENTS:	
Chain of Custody Present and Filled Out?	<b>□</b>		<del></del>	1.		COIVII	AICIA12:	
Chain of Custody Relinquished?	✓ Yes ✓ Yes	∐No □No		1.				
Sampler Name and/or Signature on COC?	Yes	□No	∏N/A	3.				
Samples Arrived within Hold Time?	Yes	□No		4.		····	<del> </del>	
Short Hold Time Analysis (<72 hr)?	∐Yes	ΖÍΝο		5.			iform/E coli BOD/ci	BOD Hex Chrome
Rush Turn Around Time Requested?	Yes	□No		6.				
Sufficient Volume?	✓Yes	□No		7.				
Correct Containers Used?	Yes	∏No		8.				
-Pace Containers Used?	✓Yes	□No						
Containers Intact?	Yes	□No		9.				
Field Filtered Volume Received for Dissolved Tests?	□Yes	□No	ØN/A	10. Is see	diment visible in	the dissolv	ed container? Ye	s No
Is sufficient information available to reconcile the samples to the COC?	✓Yes	□No	,	<del> </del>	vrite ID/ Date/Tim		<del></del>	See Exception
Matrix: Water Soil Oil Other		_						<del></del>
All containers needing acid/base preservation have been checked?	Yes	∏No	Øn/a	12. Sample	e #			7.49 P.W. C. L
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∏No	ØN/A		_	] HNO₃	∐H₂SO₄	Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∏Yes	∏No	⊠N/A	Positive for Chlorine? Res. Chlori	□No		er Lot# 0-6 Strip	See Exception  O-14 Strip
Extra labels present on soil VOA or WIDRO containers?	∐Yes	□No	☑N/A	13.	<u> </u>		L	See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	Z/N/A					
Trip Blank Present?	☐Yes	□No	ØN/A	14.				
Trip Blank Custody Seals Present?	Yes	<u> ∐No</u>	IIN/A	Pace	Trip Blank Lot #	(if purchase	ed):	
CLIENT NOTIFICATION/RESOLUTION Person Contacted:			•	Date/Tim		Field Data	Required? Yes	s ∐No
Comments/Resolution:				·				- RANK- ,
////	1	1						
Project Manager Review:	16				Date: 7/29			
Note: Whenever there is a discrepancy affecting North Carolina nold, incorrect preservative, out of temp, incorrect containers).	complianc	e samples	s, a copy o	of this form w	ill be sent to the I	North Caroli	na DEHNR Certification	on Office ( i.e out of

FMT-ALL-C-002rev.00 24March2009

Face Analytical

×

Yes

Needed:

Of Origin: MN

# 35566637 Internal Transfer Chain of

X Samples Pre-Logged into eCOC.

LAB USE ONLY 8/4/2020 Results Requested By: Comments 7/28/2020 Owner Received Date: × 1,4-Dioxane in DW by 522 (Pace FL) Date/Time Preserved Containers ਸੀਹਿA NACO Workorder Name: B002606-19-017 Water Gremlin Drinking Pace Analytical Ormond Beach Matrix 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668 Received By 10526539001 Lab ID Subcontract To 02/120 7/28/2020 13:22 DaterTime Date/Time Collect Sample Type S Pace Analytical Minnesota 1700 Elm Street Workorder: 10526539 Released By Minneapolis, MN 55414 Phone (612)607-1700 Item | Sample ID Annika Asp 798675 Suite 200 Report To **Transfers** 

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

Custody Seal (Y) or N

Cooler Temperature on Receipt 4 % °C

Z

Samples Intact Y \or

Z

Received on Ice /Y) or

This chain of custody is considered complete as is since this informetion is available in the owner laboratory.

Pace Analytical

# Document Name: Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rey, 13

Document Revised: May 30, 2018 Issuing Authority; Pace Florida Quality Office

35566637

Due Date: 08/04/20

m (SCUR)

(Correction (Corre	on Factor) _	(Actual) (Actual) (Actual) (Actual) (Actual) Commercial	Samples on ice, cooling process has begu
(Correction (Corre	on Factor) _	W projects, all containers (Actual) (Actual) (Actual) (Actual) (Actual) (Actual)	Deliver:  pH:  Initials: BRN  verified to ≤6 °C  Samples on ice, cooling process has begut
(Correction (Corre	on Factor) _	W projects, all containers (Actual) (Actual) (Actual) (Actual) (Actual) (Actual)	pH:    Description   Description
(Correction (Corre	on Factor) _	W projects, all containers (Actual) (Actual) (Actual) (Actual) (Actual) (Actual)	verified to ≤6 °C  Samples on ice, cooling process has begue
(Correction (Corre	on Factor) _	(Actual) (Actual) (Actual) (Actual) (Actual) (Actual) (Actual)	Samples on ice, cooling process has begut
(Correction (Corre	on Factor) _	(Actual) (Actual) (Actual) (Actual) (Actual) Commercial	Samples on ice, cooling process has begue
(Correction (Corre	on Factor) _ on Factor) _ on Factor) _ on Factor) _ ient	(Actual) (Actual) (Actual) (Actual) (Actual)	Samples on ice, cooling process has begut
(Correction (Correction (Correction Correction Correcti	on Factor) _ on Factor) _ on Factor) _ ient	(Actual)(Actual)(Actual) Commercial  Pa	Samples on ice, cooling process has begut
(Correction) (Correction)	on Factor) _ on Factor) _ lient	(Actual) (Actual) Commercial Pa	<ul><li>Samples on ice, cooling process has begu</li><li>Samples on ice, cooling process has begu</li></ul>
(Correction	on Factor) _	(Actual) Commercial  Pa	<ul><li>Samples on ice, cooling process has begu</li><li>Samples on ice, cooling process has begu</li></ul>
; □ cı	ient 🗆	Commercial D Page	•
			ce Other
			ce Other
vernight			
	L Standa	aru Overnight LI Gr	ound 🔲 International Priority
, D.T.	hird Darty	Crodit Cord	D. Halanau
450	17	L Cledit Card	□ Unknown
	10		
□No	Seals	intact: Yes 🗌 N	No Ice: Wet Blue Dry None
gs 🔲	None	Other	
Shorted			horted Time; Qty:
/			tioning Time,
The state of	DAIG DAVA		
//	-11		
77	7		
1	-		
1	/		
111	30-		
11	-	-	
/ /			
17	-A	1	
DYes I	No □N/A		
EY95 C	□ No □N/A	Preserva	Preservation Information:
DYes F	I No. □N/A	Lot #/Tra	ice#
amates		Date: Initials:	Time:
□Yes □	No DNA		
□Yes □	No ZNA		
		Date/Time:	
mant-1		_	
ments):_			
	No Shorted  Ves	Third Party  Third Party  Seals Shorted Date:  Yes No NA   No	





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

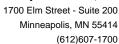
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Enclosures

Project Manager







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526691001	715644	Drinking Water	07/29/20 08:53	07/29/20 16:39





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526691001	715644	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

Date: 08/05/2020 01:30 PM

Sample: 715644	Lab ID: 10	526691001	Collected: 07/29/2	20 08:53	Received: 07	/29/20 16:39	Matrix: Drinking	Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
522 MSS 1,4 Dioxane	Analytical Method: EPA 522 Preparation Method: EPA 522									
	Pace Analyti	cal Services -	Ormond Beach							
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 13:28	3 123-91-1			
1,4-Dioxane-d8 (S)	107	%	70-130		08/03/20 13:32					

(612)607-1700



#### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin W Project:

Pace Project No.: 10526691

653465

QC Batch:

Analysis Method:

EPA 522

QC Batch Method: EPA 522 Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526691001

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

10526691001

Blank Reporting

Parameter Units Result ND ug/L

%

ug/L

%

Units

ug/L

%

10526688001

ND

Limit Analyzed

08/04/20 08:26

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

103

Spike

Conc.

0.20 70-130 08/04/20 08:26

LABORATORY CONTROL SAMPLE: 3552678

Parameter Units

LCS LCS Result % Rec % Rec Limits Qualifiers 70-130

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

LABORATORY CONTROL SAMPLE:

3552679

20

LCS

% Rec

Limits

70-130

70-130

Parameter 1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Spike Conc. 0.2

Spike

Conc.

LCS Result 0.21

20.3

% Rec 104

108

102

107

Qualifiers 50-150

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3552886 MS MSD

21.4

3552887

MS

104

111

% Rec

Max

Qual

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

Date: 08/05/2020 01:30 PM

Units Result ug/L

%

Spike Conc.

21

MS Result

22.2

MSD Result % Rec 21.9

MSD % Rec 104

110

Limits **RPD** 

RPD 70-130 20 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526691

Date: 08/05/2020 01:30 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526691

Date: 08/05/2020 01:30 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526691001	715644	EPA 522	653465	EPA 522	653821

CHAIN-OF-CUSTODY / Analytical Request Document

**Face Analytical** 

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

SAMPLE CONDINGNIS 10526691 Page: Residual Chlorine (Y/V) Received on LEWP In C 126 29/20/63 .: #OM 10526691 (19/2) Hein amika.asp@pacelabs.com, 622 1,4-dioxana NA ) seT seavienA HOSHON JOUR Methanol GISON Na2S2O3 mall Pace Quote:
Pace Project Manager:
Pace Profile #: 3aes4. HOPN Section C Irroice Information: НСІ Attention: Company Name: Address: HNO3 くなべ #USSH beviesergnU 7/6/2/0905 # OF CONTAINERS SAMPLE TEMP AT COLLECTION SIGNATURE of SAMPLER: Purchase Order #.
Project Name: Water Gremlin Well Sampling - 2606-0017
Project # MOUZZON - 19-017 PRINT Name of SAMPLER: \$\frac{1}{2} COLLECTED TIME 7212 START Required Project Information: DATE Report To: Kelly Jaworski Copy To: t (G=GRAB C=COMP) MATRIX CODE (see valid codes to left) 20 Section B MATRUX
Detailing Water
Water
Water
Water
Water
Product
SollSodict
Oil
Wijer
Ari
Chher
Tissue One Character per box. (A-Z, 0-91, -) Sample Ids must be unique School 1800 Pioneer Creek Center SAMPLE ID mpany: Wenck Associates, Inc. kjaworski@wenck.com quired Client Information: rais to be performed at Pace FL 3/1/4 ple Plain, MN 55359 quested Due Date: 7 2 0 0 4 0 0 7 0 0 7 ILEM #

Page 9 of 12

(N/A) Samples

Sealed Cooler (VVV)

Custod

(N/A)

DATE Signed: ~

## Pace Analytical\*

#### Document Name:

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt	Client Name:	٠ ،			Pr	oject #	: [.]	<b>O#</b> :1	I ME	2266	01	
орон кесеіре	- Wench	Associat	tcs				M	UH·.	LUL	1200	<u> </u>	
Courier:	Fed Ex	UPS SpeeDee			CI al See Ex			: AKA IENT: WE		Due Dat	e: 08	/05/20
Tracking Number:					[		<u> </u>					
<b>Custody Seal on Co</b>	oler/Box Present?	☐Yes 🔯	No	Sea	als Intact	? 🔲	∕es 🄼r	No <b>Biol</b> o	ogical Ti	ssue Frozer	1? ∐Y∈	es 🗌 No 🔀 N/A
Packing Material:	Bubble Wrap	Bubble Ba	gs 🗀	None	Oth	ier:	<u></u>	····	Т	emp Blank		Yes No
mermometer:	T1(0461)	39)		Type of I		(Wet	□Blue	□None	□D:	ry $\square$ Me	Ited	
Did Samples Origina	<del></del>						aken? □Y	es □No ∑	<b>₫</b> N/A			
Temp should be above from	eezing to 6°C Co	oler Temp Rea	d w/ten	np blank	· <u> </u>	<u>4.6</u>		oc		ge Correct		
Correction Factor:		emp Corrected		<del></del>	·	4.4		oc	(no	temp blan	k only): °C	See Exceptions 1 Container
USDA Regulated Soil	: ( N/A, water sam	ple/Other:	10: 1	)				f Person Exa				
Did samples originate ID, LA. MS, NC, NM, N II	in a quarantine zone \ Y, OK, OR, SC, TN, TX o f <b>Yes to either quest</b> i	or VA (check ma	ps)?	Yes	□No	Ha	waii and Pue			Yes 🗌	No	ly, including
		1					330, 4114 1	TOTAL WILL	<del></del>	MENTS:	OIK.	
Chain of Custody Prese	nt and Filled Out?		Yes	□No		1.						
Chain of Custody Relinc	quished?		Yes	□No		2.						
Sampler Name and/or S			Yes	□No	□N/A	3.						
Samples Arrived within	Hold Time?		¥¥ves	□No		4.						
Short Hold Time Analys	sis (<72 hr)?		□Yes	⊠No			Turbidity _	rm	Fotal Coli rite 🔲 Oi	form/E coli thophos 00	BOD/cB0	OD Hex Chrome
Rush Turn Around Time	e Requested?		Yes	□No		6. 5	TV SI	Day				
Sufficient Volume?			Yes	□No		7.						
Correct Containers Use			Yes	∏No		8.						
-Pace Containers Use	ed?		¥Yes	No	<del></del>	<u> </u>						
Containers Intact?			¥Yes	□No		9.						
Field Filtered Volume Ro			∐Yes	□No	XN/A			visible in the			?  \Yes	
Is sufficient information to the COC?		the samples	Yes	□No		11. 11	no, write ID/	/ Date/Time or	n Contain	er Below:		See Exception
Matrix: Water Soil							<del>,</del>	·····		<del></del>		
All containers needing a checked?	icid/ base preservation	n have been	∐Yes	□No	<b>⊠</b> N/A	12. Sa	mple #					
All containers needing p compliance with EPA re- (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, Na	commendation?		∐Yes	□No	⊠N/A		☐ NaOH	. □ ни	NO₃	∏H₂SO₄	Ε	Zinc Acetate
Exceptions: VOA, Colifor DRO/8015 (water) and [		Grease,	∐Yes	□No	<b>⊠</b> N/A	Chlorii	re for Res. [ ne? [ hlorine	Yes No 0-6 Roll	рН Рар	er Lot# 0-6 Strip		See Exception O-14 Strip
Extra labels present on s Headspace in VOA Vials		ntainers?	☐Yes ☐Yes	□No □No	ØN/A ØN/A	13.	-vs-v.					See Exception
Trip Blank Present? Trip Blank Custody Seals			☐Yes ☐Yes	□No □No	N/A N/A	14.	ace Trip Bla	ank Lot # (if p	urchase	d):		
CLIENT NOTI Person Contacted: Comments/Resolution	FICATION/RESOLUT	ION					/Time:			Required?	Yes	□No [¹
Droinet Man	ogar Basia				<del></del>							
Project Mana		North Carolina	omplier -	o carrel-			Date:		7/30/20	20		
Note: Whenever there is a hold, incorrect preservativ	e, out of temp, incorre	ct containers).	omplianc	e sample	s, a copy o	oi tois toi	rm will be se	ent to the Nort	in Carolir	na DEHNR Ce	rtification	n Office ( i.e out of

Page 10 of 12

State Of Origin: MN Cert. Needed: Workorder Name: BC02606-19-017 Water Gremlin W

× Yes

Results Requested By:

Pace Analytical

8/5/2020

7/29/2020

Requested Analysis

Owner Received Date:

Pace Analytical Ormond Beach

Subcontract To

Ormond Beach, FL 32174 Phone (386)672-5663

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Workorder: 10526691

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

EOSSZAN A TT

LAB USE ONLY

×

Drinking Matrix

10526691001 Lab ID

7/23/2020 08:53

PS

**Date/Time** Collect

Sample Type

Item Sample ID

715644

Comments

7/31/20 (CBC) Date/Time

7349

4 RRB/Pace

Received By

Date/Time 30/00

Released By

**Transfers** 

Received on Ice (V)or N

Z ō

Samples intact( )

Custody Seal (Y) or N

Cooler Temperature on Receipt 5.6 °C

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Project # **Project Manager:** 

PM: ADC Due Date: 08/05/20 CLIENT: PACMIN

Date and Initials of person:

Examining contents:

Client:			Deliver:
Thermometer Used: 7349	ate: 7/31/20	Time: 12/0	pH:
State of Origin:	For WV project	s, all containers verified	to ≤6 °C
Cooler #1 Temp. *C 5,5 (Visual) +6,1 (Cor			Samples on ice, cooling process has begun
	rection Factor)		Samples on ice, cooling process has begur
Cooler #3 Temp.°C(Visual)(Cor			Samples on ice, cooling process has begur
Cooler #4 Temp. *C(Visual)(Cor			Samples on ice, cooling process has begun
Cooler #5 Temp.°C (Visual) (Cor		*,	Samples on ice; cooling process has begur
Cooler #6 Temp.°C(Visual)(Cor	rection Factor)	(Actual)	Samples on ice, cooling process has begur
Courier: Fed Ex UPS USPS  Shipping Method: First Overnight Priority Overnight  Other  Recipient Sender  Tracking # 13 20 7523 4710	night ☐ Standard Over	night □ Ground	☐ Other ☐ International Priority Unknown
Packing Material: Bubble Wrap Bubble Bags	Seals intact;  None Other_  orted Date:		Ice Wet Blue Dry None  Time: Qty:
	Comi	ments:	
Chain of Custody Present	′es □ No □N/A		
Chain of Custody Filled Out	'es □ No □N/A		
Relinquished Signature & Sampler Name COC	es □ No □N/A		
Samples Arrived within Hold Time	'es □ No □N/A		
	es ∠No □N/A		
Sufficient Volume	es □ No □N/A		
Correct Containers Used	es □ No □N/A		
Containers Intact	es □ No □N/A		
Sample Labels match COC (sample IDs & date/time of collection)	es □ No □N/A	9	
All Containers needing preservation are found to be in	res □ No □N/A res □ No □N/A ates	Pre Preservative: Lot #/Trace #:_ Date:_ Initials:	servation Information: Time:
Headspace in VOA Vials? ( >6mm):	es □ No ☑N/A		
Trip Blank Present:	es □ No □N/A		
Client Notification/ Resolution: Person Contacted: Comments/ Resolution (use back for additional comme	nts):	Date/Time:	
			100
Project Manager Review:			Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526219001	715640	Drinking Water	07/24/20 10:26	07/24/20 12:15





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526219001	715640	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

Date: 07/31/2020 12:07 PM

Sample: 715640	Lab ID: 10	Lab ID: 10526219001		Collected: 07/24/20 10:26		/24/20 12:15 I	Matrix: Drinking Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522				
	Pace Analytic	al Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 09:48	123-91-1		
1,4-Dioxane-d8 (S)	100	%	70-130	4	07/29/20 12:26	07/20/20 00:40			



#### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

QC Batch Method:

QC Batch: 652249

652249 EPA 522 Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526219001

METHOD BLANK: 3546520

Date: 07/31/2020 12:07 PM

Matrix: Water

Associated Lab Samples: 105262

Parameter

10526219001

Blank Reporting

Result Limit And

Analyzed Qualifiers

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0

 1,4-Dioxane-d8 (S)
 %
 88
 70 

Units

0.20 07/30/20 08:29 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

MS MSD 10526212001 MS Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 2.1 2.1 1.7 80 70-130 2 20 ug/L 1.8 84 1,4-Dioxane-d8 (S) 90 % 91 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526219

Date: 07/31/2020 12:07 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526219

Date: 07/31/2020 12:07 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526219001	715640	EPA 522	652249	EPA 522	652612

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Samples Samples ン SAMPLECONDITIONS State / Location Sealed polsuo Page: Residual Chlorine (Y/V) (V/V) WO#: 10526219 Э Received on 13 ろが D iii qMaT 12200 10.15 1/09 p/12/2/ 7/6/2 DATE Signed: 7/24/26 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION ensxoib-A,1 SS3 9 N/A tseT sesylanA Other Methanol Preservatives Na2S2O3 39664, 4 HOBN Pace Project Manager: Invoice Information: НСІ Company Name: Address: Pace Quote: EONH Pace Profile #: HS204 Attention: 40*1*1 Unpreserved 500 SIGNATURE of SAMPLER # OF CONTAINERS SAMPLER NAME AND SKGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: DATE 经 슣 1020 COLLECTED Sep. RELINQUISHED BY / AFFILIATION TIME 17/21/P START Required Project Information: Report To: Kelly Jaworski Copy To: (G=GRAB C=COMP) SAMPLE TYPE Purchase Order#: (see valid codes to left) **BOOD XINTAM** Section B CODE DWY WYT P WY P P P SE SE SE TS 1 4 3 × MATRIX
Dirising Water
Waste Waste
Waste Waste
Product
Solfsolid
Oil
Wripe
Adr
Christve One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: rsis to be performed at Pace FL aple Plain, MN 55359 NONE quested Due Date: Page 9 of 12

## Pace Analytical®

#### **Document Name:**

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.: `

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

# ENV-FRM-MIN4-0150 Rev.00

MM2       7-29 - 20	Seal None Type of loce	s Intacti	CLIENI: WENCK    Yes   No Biological Tissue Frozen?   Yes   No   N/4
Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐  Thermometer: ☐ T1(0461) ☐ T2(1336) ☐T3(0459) ☐ T4(0254) ☐ T5(0489)  Did Samples Originate in West Virginia? ☐Yes ☐No West	None Type of Ice	Oth	er: Temp Blank? 🖂 Yes 🔲 No
Thermometer:         ☐ T1(0461)         ☐ T2(1336)         ☐ T3(0459)           ☐ T4(0254)         ☐ T5(0489)    Did Samples Originate in West Virginia? ☐ Yes No	Type of Ico		
T4(0254) ☐ T5(0489)  Did Samples Originate in West Virginia? ☐ Yes ☐ No West Virginia? ☐ Yes ☐ Ye	ere All Con	e: <u> </u>	Wet Blue None NDry Melted
			- Commence
Temp should be above freezing to 6°C Cooler Temp Read w/te			emps Taken? ☐Yes ☐No ☑N/A
Correction Factor:Cooler Temp Corrected w/ter	-		7, 4.6  OC  Average Corrected Temp  (no temp blank only):   See Exceptions  OC  OC  1 Container
USDA Regulated Soil: ( N/A, water sample/Other:	iib piatik :		Date/Initials of Person Examining Contents:
Did samples originate in a quarantine zone within the United State ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?	<b>□</b> Yes	□No	- at-/tibe of the transfer and the control
			COMMENTS:
Chain of Custody Present and Filled Out?	□No		1.
Chain of Custody Relinquished?	□No		2.
Sampler Name and/or Signature on COC?	□No	□N/A	3.
Samples Arrived within Hold Time?	□No		4.
Short Hold Time Analysis (<72 hr)?  ☐Yes	™o	•	5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Nitrate Orthophos Other
Rush Turn Around Time Requested?	□No		6. SHD SDay
Sufficient Volume?	□No		7.
Correct Containers Used?	□No		8.
-Pace Containers Used? ∑Yes	□No		
Containers Intact? Yes	□No		9.
Field Filtered Volume Received for Dissolved Tests?	□No `	<b>⊠</b> N/A	10. Is sediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	∏No	<b>'</b>	11. If no, write ID/ Date/Time on Container Below:  See Exception
Matrix: Water Soil Oil Other			
All containers needing acid/base preservation have been	□No	₩ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, $H_2SO_4$ , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	□No	MN∕A	☐ NaOH ☐ HNO₃ ☐ H₂SO₄ ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	□No	□N/A	Positive for Res.         Yes         See Exception           Chlorine?         No         pH Paper Lot#
Extra labels present on soil VOA or WIDRO containers?    Yes   Headspace in VOA Vials (greater than 6mm)?   Yes   Yes	□No □No	⊠N/A N/A	13. See Exception
Trip Blank Present? Yes Trip Blank Custody Seals Present? Yes	□No `	N/A DN/A	14. Page Trip Blank Let # (if purchased):
	Пио	∠IN/A	Pace Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION Person Contacted:			Field Data Required? ☐ Yes ☐ No Date/Time:
Comments/Resolution:			
Project Manager Payless	0		Balan - In-In-In-In-In-In-In-In-In-In-In-In-In-I
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carolina compliant	JUP.	2 605	<b>Date:</b>

Labeled by:

Page 10 of 12

# WO#: 35566007

x Samples Pre-Logged into eCOC.

Internal Transfer Chain of C

face Analytical "

×

of Origin: MN

No	Requested Analysis			LAD COLO			Communic	OTTO TITLE OF THE PARTY OF THE	Q	579	
Owner Received Date:		in DW by 522 (Pace FL)	Containers	×				Date/Time	one Throma loyo	6かと、と く・3	
Workorder Name: B002606-19-017 Water Gremlin	Subcontract To	Pace Analytical Omond Beach 8 East Tower Circle Omond Beach, FL 32174 Phone (386)672-5668	pevieseidn	10:26 10526219001 Drinking				Date/Time Received By	THETHE HAVE		
Workorder: 10526219 Workorder Name:		Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700	Sample	Sd Sd	-			Released By	16 //we		
Workorder	Report To	Annika Asp Pece Analytical Minneso 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700	Item Sample ID	1 715640	2	m 4	Ω.	Transfers	-	3 2	

This chain of custody is considered complete as is since this information is available in the owner laboratory.

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.



Project Manager Review:

# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

LIO# · 35566007

m (SCUR)

Date: \_

Project ; Project Manager Client:	PM: SMM CLIENT:		:: 07/31/20	Date and Initials of person:  Examining contents:  Label:  Deliver:  pH:
Thermometer Used:	349	Date: 7/28/2	Time:	1045 Initials: BRN
State of Origin:		☐ For W	/ projects, all containers	verified to ≤6 °C
211	isual) +. [	(Correction Factor)	a de	Samples on ice, cooling process has begun
4- 11	sual)	(Correction Factor)		Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Vi	sual)			Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Vi	sual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #5 Temp. °C(Vi	sual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #6 Temp.°C(Vi	sual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
				Othor
	,	PS Client C		
Shipping Method:   First Ove	ernight 🗹 Priori	ty Overnight □ Standa	rd Overnight	round ☐ International Priority
☐ Other	Condor.	Third Porty	C Crodit Card	□ Unknown
3illing: ☐ Recipient	Sender 12 a	□ Third Party 0 7523	Un 37	- CHRIOWII
Fracking #Custody Seal on Cooler/Box Pre				
acking Material: □Bubble Wra	ap Bubble I		Other	Shorted Time: Qty:
			Comments:	
Chain of Custody Present		ØŶes □ No □N/A		
hain of Custody Filled Out		ØYes □ No □N/A		
telinquished Signature & Sampler	Name COC	ÇXYes □ No □N/A		
amples Arrived within Hold Time		Z∕Yes □ No □N/A		
ush TAT requested on COC		□Yes □ No □N/A	Due.	7/31
ufficient Volume		ØYes □ No □N/A		
orrect Containers Used		ØYes □ No □N/A		
ontainers Intact		ØYes □ No □N/A		
ample Labels match COC (sample ID: ollection)	s & date/time of	7 □Yes □ No □N/A		
Il containers needing acid/base prese	rvation have been	ryes □ No □N/A		Preservation Information:
hecked. Il Containers needing preservation are	e found to be in	Tres LING LINA	Lot #/T	vative: race #:
ompliance with EPA recommendation:		[Yes □ No □N/A	Date: Initials:	Time:
Exceptions: VOA, Col eadspace in VOA Vials? ( >6mm)		□Yes □ No □N/A		
rip Blank Present:	J.	□Yes □ No □N/A		
ient Notification/ Resolution:		2100 2110 41111		
			_	
Person Contacted:				





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

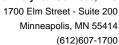
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526077001	780334	Drinking Water	07/23/20 14:42	07/23/20 15:25





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526077001	780334	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

Date: 07/29/2020 03:09 PM

Sample: 780334	Lab ID: 105	26077001	Collected: 07/23/2	20 14:42	Received: 07	/23/20 15:25 <b>N</b>	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	•		Preparation Methor	od: EPA	522			
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 17:23	123-91-1	
1,4-Dioxane-d8 (S)	78	%	70-130	1	07/27/20 10:45	07/20/20 17:22		

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526077001

METHOD BLANK: 3543368

1

Date: 07/29/2020 03:09 PM

Matrix: Water

Associated Lab Samples: 10526077001

Blank Reporting

Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

		10525818001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526077

Date: 07/29/2020 03:09 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526077

Date: 07/29/2020 03:09 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526077001	780334	EPA 522	651671	EPA 522	652021

Pace Analytical www.paceuss.com

Section B

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Regulatory Agency SAMPLECONDITIONS State / Location કુ MO#: 10526077 Page: ЮЯ Received on 〜 〜 〜 LEMP In C Filtered (Y/N) TIME 1525 8 2/11/2 DATE .0526077 annika.asp@pacelabs.com, ACCEPTED BY/AFFILIATION 622 1,4-dioxane .N/A 189T sesylanA lonshieM Preservatives Ne2S2O3 39664, 4 Lastan HOBN Pace Project Manager: Pace Profile #: 3966 Invoice Information: HCI Attention: Company Name: Address: ниоз Pace Quote: Section C H2SO4 \$ \$\frac{1}{2} HI6/2,0905 Tish KS Jupreserved SIGNATURE of SAMPLES: # ОF СОИТА!ИЕRS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: Project Name: Water Gremlin Well Sampling - 2606-0017 DATE 著 8 1/23/20 1442 A PRO COLLECTED Sep. RELINQUISHED BY / AFFILIATION TIME START 2516 2516 Required Project Information: DATE Report To: Kelly Jaworski
Copy To: ৫ (G=GRAB C=COMP) SAMPLE TYPE Purchase Order#: MATRIX CODE (see valid codes to left) CODE WY WY SE SE OCE TO T TS MATRIX
Drinking Water
Waster
Waste Water
Product
SoulSolid
Oil
Wipe
Air
Chief
Tissue Hillary Firm Lane One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center Æ SAMPLE ID mpany: Wenck Associates, Inc. quested Due Date: ラウン kjaworski@wenck.com 180334 equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359
nail: kjaworski@wen NONE 5 9 8 7 6 5 7 2 # MaTI

Page 9 of 12

(N/A)

Intact

seldmeS

Sealed Cooler LYM

Custod (N/X)

# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt  Wenck			Pro	oject #: '	WO	#:10	)52	26077		
Courier: Fed Ex UPS Pace SpeeDee  Tracking Number:	□us □co		   Cli   See Exc		PM: A		Du	e Date: 0		<u> </u> 
	]No	Sea	ils Intacti	r ZÍYes	□No	Biolog	rical Tis	sue Frozen?	Yes □No 🛭	AN/A
Packing Material: Bubble Wrap	_	None	∏Oth	/		2.0.08		emp Blank?	Yes No	
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)	_	Type of I			]Blue	□None	□Dr	_	<del>-</del> -	•
Did Samples Originate in West Virginia?   Yes	Wei	e All Co	ntainer T	emps Take	n? ∐Yes	□No Ø	N/A			
Temp should be above freezing to 6°C Cooler Temp Rea				15,	.7	oc		ge Corrected 1 temp blank or	Temp nly): □See Excep	ptions
Correction Factor: +CC Cooler Temp Correcte	d w/tem	p blank	: <u> </u>	5,1,		⁰C		⁰€	1 Contain	
USDA Regulated Soil: ( N/A, water sample/Other: ) Date/Initials of Person Examining Contents: 770 7 23 2 e)  Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No  If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.										
·							COMM	IENTS:		
Chain of Custody Present and Filled Out? Chain of Custody Relinquished?	✓ Yes ✓ Yes	□No □No		1. 2.						
Sampler Name and/or Signature on COC?	Z Yes		N/A	3.						
Samples Arrived within Hold Time?	Yes		<u> ПМ/А</u>	4.						
Short Hold Time Analysis (<72 hr)?	Yes	⊠No						orm/E coli □BO thophos □Othe	D/cBOD  Hex Chr	ome
Rush Turn Around Time Requested?	Yes	□No		6.						
Sufficient Volume?	Yes	□No		7.						_
Correct Containers Used?	∠ Yes	□No		8.						
-Pace Containers Used? Containers Intact?	Yes Yes	No □No		9.						
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	ZÎN/A		diment vi	sible in the	dissolve	ed container?		
Is sufficient information available to reconcile the samples to the COC?  Matrix: Water Soil Oil Other	∠Yes	□No	<u>/KIN/A</u>			ate/Time on			See Exce	eption
All containers needing acid/base preservation have been checked?	∐Yes	□No	ďn/a	12. Sampl	e #					
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	Øn/a		] NaOH	☐ HN€	0₃	∐H₂SO₄	Zinc Aceta	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∕ZYes	□No	□n/a	Positive for Chlorine? Res. Chlor		Yes No <u>I</u> 0-6 Roll	pH Pap	er Lot# 0-6 Strip	See Exc 0-14 Strip	eption
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No	IZIN/A IZIN/A	13.			<u> </u>		See Exc	eption
Trip Blank Present? Trip Blank Custody Seals Present?	□Yes □Yes	□No □No	ØN/A □N/A	14. Pace	Trin Blan	k Lot # (if pu	ırchase	d):		
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:			<u> </u>	Date/Tir	-		_		Yes No	
		~					7/0 1	10000		
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers).	compliand	e sample	es, a copy o	of this form v	Date: will be sent		7/24/ n Carolir		ication Office ( i.e	out of

Page 10 of 12

Labeled by: \_\_\_\_\_

# Internal Transfer Chai

x Samples Pre-Logged into eCOC

7/23/2020 × Yes Owner Received Date: State Of Origin: MN Cert. Needed: Workorder Name: B002606-19-017 Water Gremlin

Results Requested By:

Pace Analytical \*

7/30/2020

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

LAB USE ONLY

×

G1(T)

Matrix

Lab ID

Date/Time Collect

Sample Type

Item | Sample ID

780334

Drinking

10526077001

7/23/2009 14:42

PS

Unpreserved

Samples Intact ( ) or

or

Received on Ice //

Comments

Date/Time

Received By

Date/Time

Released By

Transfers

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

or (N

**Custody Seal** 

3. L'B

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 1 of 1

FMT-ALL-C-002rev 00 24March2009

Friday, July 24, 2020 12:11:17 PM

Page 11 of 12

Workorder: 10526077

Pace Analytical Minnesota

1700 Elm Street

Suite 200

Annika Asp

Report To

Minneapolis, MN 55414 Phone (612)307-1700

Ormond Beach, FL 32174 Phone (386)672-5668 8 East Tower Circle

Pace Analytical Ormond Beach

Subcontract To



Document Name Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rev 13

Document Revised, May 30, 2018 Issuing Authority: Pace Florida Quality Office

# Project # Project Manager:

Project Manager Review:

WO#: 35565758

PM: SMM

Due Date: 07/30/20

CLIENT: PACMIN

Date and Initials of person:

Examining con	itents:	$\gamma / \gamma$
Label:	1	11-
Deliver:	()	V
oll, 7 /		

Client:			Deliver:
Thermometer Used: 1348	Date:	S W Time:	1042 Initials: I.v.
		3 to Time.	11 Thurston
State of Origin:		/ projects, all containers verifi	ed to ≤6 °C
Cooler #1 Temp. °C Y (Visual)			Samples on ice, cooling process has begu
Cooler #2 Temp. °C(Visual)			Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #6 Temp.°C (Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex UPS U	USPS ☐ Client ☐ C	Commercial D Pace	Other
Shipping Method:	ority Overnight 🛮 Standar	d Overnight   Ground	☐ International Priority
□ Other			
Billing: Recipient Send	er	☐ Credit Card [	I Unknown
Tracking # 1686 / 303	9979		
Custody Seal on Cooler/Box Present:  Yes	s No Seals i	intact: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bubbl	_	Other	
Samples shorted to lab (If Yes, complete)	Shorted Date:		ed Time: Qty:
(	onorted bate,	Shorte	ed Time: Qty:
		Comments:	
Chain of Custody Present	Yes I No IN/A	1100	3
Chain of Custody Filled Out	PYes □ No □N/A		
Relinquished Signature & Sampler Name COC	Yes □ No □N/A		
Samples Arrived within Hold Time	Yes No No N/A		
Rush TAT requested on COC	□Yes ¬No □N/A		
Sufficient Volume	ØYes □ No □N/A		
Correct Containers Used	ØYes □ No □N/A		
Containers Intact Sample Labels match COC (sample IDs & date/time of	✓Yes □ No □N/A		
collection)	NO DN/A	Chain sample	time 2009
All containers needing acid/base preservation have been checked.	n /	P	reservation Information:
All Containers needing preservation are found to be in	Yes No No N/A	Preservative: Lot #/Trace #	
compliance with EPA recommendation:	□Yes ☑No □N/A	Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G leadspace in VOA Vials? ( >6mm):	7	Initials:	
rip Blank Present:	☐Yes ☐ No ☐N/A ☐Yes ☐ No ☐N/A		
Client Notification/ Resolution:	CITCO INTO LINIA	9	
Person Contacted:		Date/Time:	
omments/ Resolution (use back for additional	Commental Canal		inner and Pg)
reminents tresolution lase back for additional	comments): Survivio	arrived un	preserved (1)





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10527002001	780334	Drinking Water	07/31/20 11:37	07/31/20 15:00
10527002002	Dup073120	Drinking Water	07/31/20 00:00	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10527002001	780334	EPA 522	СТВ	2	PASI-O
10527002002	Dup073120	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

(612)607-1700





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

Date: 08/11/2020 10:31 AM

Sample: 780334	Lab ID: 1052	27002001	Collected: 07/31/2	0 11:37	Received: 07	//31/20 15:00 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	od: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.19	1	08/09/20 05:35	08/10/20 21:26	123-91-1	
1,4-Dioxane-d8 (S)	107	%	70-130	1	08/09/20 05:35	08/10/20 21:26	i	
Sample: Dup073120	Lab ID: 1052	27002002	Collected: 07/31/2	00:00	Received: 07	//31/20 15:00 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
						-		
522 MSS 1,4 Dioxane	Analytical Meth	od: EPA 52	22 Preparation Metho	od: EPA	522			
522 MSS 1,4 Dioxane	•		22 Preparation Metho Ormond Beach	od: EPA	522			
522 MSS 1,4 Dioxane  1,4-Dioxane (p-Dioxane)  Surrogates	•		•	od: EPA	522 08/09/20 05:35	08/10/20 21:11	123-91-1	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

QC Batch: 655137

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10527002001, 10527002002

METHOD BLANK: 3561567

Date: 08/11/2020 10:31 AM

Matrix: Water

Associated Lab Samples: 10527002001, 10527002002

Blank Reporting

Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/10/20 19:51 ug/L 1,4-Dioxane-d8 (S) % 107 70-130 08/10/20 19:51

LABORATORY CONTROL SAMPLE: 3561568

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.4 102 70-130 ug/L 1,4-Dioxane-d8 (S) 111 70-130 %

LABORATORY CONTROL SAMPLE: 3561569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.21	105 113	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561570 3561571

		10526991001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	23	23	23.4	22.8	102 110	99 106	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10527002

Date: 08/11/2020 10:31 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527002

Date: 08/11/2020 10:31 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10527002001	780334	EPA 522	655137	EPA 522	655495
10527002002	Dup073120	EPA 522	655137	EPA 522	655495

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B				v,	Section C			•					<b>L</b>					Γ
Required	lient Information:	quired Project In	formation:			ħ	Invoice Information:	ormation:								Page:	-	ŏ	-	
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Address:	fooddale Drive	CODY TO: Kelly JEWONS!	4 Jan	27.75		0	Company Name	аше:						T						
31			/			₹	Address:									Recut	Regulatory Agency	A.		
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Phone:	-4588 Fax:	Project Name: 522 Bisulfate vials	22 Bisulfate v	rials		α.	Pace Project Manager.	t Manage.		annika.asp@pacelabs.com	pacelabs	.com,				Stat	State / Location			
Requeste	Requested Due Date: Stal - S day Pr	ject #: 1500	2606-	9-017		٦	Pace Profile #:	#.												
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# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - **Minneapolis** 

Page 10 of 12

Labeled by:

Sample Condition Upon Receipt		Project #:	WO#:10527002
	= '	Client	PM: AKA Due Date: 08/07/20 CLIENT: WENCK
Tracking Number:			<u></u>
Custody Seal on Cooler/Box Present? Yes	No Seals I	ntact? Ye	s No Biological Tissue Frozen? Yes No No AN/A
Packing Material: Bubble Wrap	ole Bags None [	Other:	Temp Blank? Yes No
Thermometer:		∭Wet	□Blue □None □Dry □Melted
Did Samples Originate in West Virginia? ☐Yes ☐	No Were All Conta	iner Temps Ta	ken? 🗆 Yes 🗀 No 😂 🗖 /A
Temp should be above freezing to 6°C Cooler Tem	p Read w/temp blank:	1.4,	•
Correction Factor: Cooler Temp Cor	rected w/temp blank :	1.2,	(no temp blank only): See Exceptions
USDA Regulated Soil: ( N/A (water sample) Othe			nitials of Person Examining Contents: $RHL 7/31/2$
Did samples originate in a quarantine zone within the ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (che			amples originate from a foreign source (internationally, including aii and Puerto Rico)?
			38) and include with SCUR/COC paperwork.
			COMMENTS:
Chain of Custody Present and Filled Out?	√Ves □No	1.	
Chain of Custody Relinquished?	☑Yes □No	2.	
Sampler Name and/or Signature on COC?		]N/A 3.	
Samples Arrived within Hold Time?	Z∀es □No	4.	
Short Hold Time Analysis (<72 hr)?	□Yes □Kro		ecal Coliform
Rush Turn Around Time Requested?	Yes ØÑo	6.	100 ·
Sufficient Volume?	Yes □No	7.	
Correct Containers Used?	✓ Yes □No	8.	
-Pace Containers Used? Containers Intact?	Yes □No  Yes □No	9.	
Field Filtered Volume Received for Dissolved Tests?		,	sadiment visible in the disselved container?
Is sufficient information available to reconcile the sam			sediment visible in the dissolved container? Yes No , write ID/ Date/Time on Container Below: See Exception
to the COC?	₩es □No		
Matrix: ☐Water ☐Soil ☐Oil ☐Other ☐ All containers needing acid/base preservation have be		7√7A 12. Sam	nlo #
checked?	en □Yes □No 戶	]xi/A   12. Sam	pie #
All containers needing preservation are found to be in compliance with EPA recommendation?  (HNO₃, H₂SO₄, <2pH, NaOH >9 Sulfide, NaOH>12 Cyan	□Yes □No Æ	ÍN/A	□ NaOH □ HNO <sub>3</sub> □ H <sub>2</sub> SO <sub>4</sub> □ Zinc Acetate
		Positive	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes □No €	Ciliorine	
Dicy 6615 (Watery and Dioxiny) 175		Res. Chl	orine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	☐Yes ☐No ☐	10/A 13. 10/A	See Exception
Trip Blank Present?	□Yes □No ☑	NA 14.	
Trip Blank Custody Seals Present?	☐Yes ☐No	⅓Ñ/A Pa	ce Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION Person Contacted:		Date/	Field Data Required? Yes No
Comments/Resolution:		······	
During Market		· · · · · · · · · · · · · · · · · · ·	
Project Manager Review:	MANU (JJP	conv of this for-	Date: 8/3/2020  will be sent to the North Carolina DEHNR Certification Office (i.e out o
hold, incorrect preservative, out of temp, incorrect contain		copy of this forn	i wiii be sent to the Moral Carolina Denink Certification Office ( i.e. out o

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 $\begin{bmatrix} \mathbf{x} \end{bmatrix}$  Samples Pre-Logged into eCOC.

Pace Analytical "
www.pacelabs.com

Origin: MN

)						;	eded:	Yes	×		www.pacelabs.co
}	Workorder: 10527002	Workorder N	Workorder Name: B002606-19-017 Water Gremlin	19-017 Water	Gremlin	OWI	Owner Received Date:		7/31/2020	Results Requested Bv:	: 8/7/2020
Re	Report To		Sutrontract To	t To					Requested Analysis	Analysis	
Pa 17 NS Ph	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace A 8 East Omono Phone	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	d Beach	Preserved Containers	SS (Pace FL)				
Ite	Item Sample ID	Sample Collect Type Date/Ti	Collect	Lab ID	Matrix	A Cother R	nexoiG-₽, I				LAB USE ONLY
-	780334	PS	7/31/2020 11:37	10527002001	Drinking 1		×				
7	Dup073120	PS	7/31/2020 00:00	10527002002	Drinking 1	1	×				
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\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Samples Intact Y or

Y or

Received on Ice

Custody Seal Y or N

S

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.



### Document Name Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev 13

Document Revised: May 30, 2018 Issuing Authority Pace Florida Quality Office

m (SCUR)

**Project Project Manage** 

Due Date: 08/07/20 CLIENT: PACMIN

Date and Initials of person:

Examining conte	nts:
Label:	.10
Deliver:	
pH:	

Client. 1-344 Date: 8/4/70 Time: 11.22Thermometer Used: State of Origin: For WV projects, all containers verified to ≤6 °C Cooler #1 Temp. C (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #2 Temp. C (Visual) O. (Correction Factor) \( \( \) (Actual) Samples on ice, cooling process has begun Cooler #3 Temp.°C\_ (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #4 Temp.°C (Visual) \_(Correction Factor) Samples on ice, cooling process has begun Cooler #5 Temp.°C\_ (Visual) \_(Correction Factor) \_\_ (Actual) Samples on ice, cooling process has begun Cooler #6 Temp. °C (Visual) \_(Correction Factor) \_\_ (Actual) Samples on ice, cooling process has begun Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other\_ Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority ☐ Other Billing: □ Recipient ☐ Sender ☐ Third Party ☐ Credit Card □ Unknown Tracking # Custody Seal on Cooler/Box Present: Yes Seals intact: Yes No No Ice: (Wet Blue Dry None Packing Material: Bubble Wrap Bubble Bags None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty: \_ Comments: Chain of Custody Present ☐Yes ☐ No ☐N/A Chain of Custody Filled Out DY'es □ No □N/A **V**Yes Relinquished Signature & Sampler Name COC □ No □N/A Samples Arrived within Hold Time **☑**Yes □ No □N/A Rush TAT requested on COC ☑Yes □ No □N/A Sufficient Volume **V**Yes □ No □N/A Correct Containers Used Ves □ No □N/A Containers Intact DY'es □ No □N/A Sample Labels match COC (sample IDs & date/time of collection) **V**Yes □ No □N/A All containers needing acid/base preservation have been Preservation Information: checked □ No □N/A Preservative: All Containers needing preservation are found to be in Lot #/Trace #: compliance with EPA recommendation: Yes □ No □N/A Date: Time: Exceptions: VOA, Coliform, TOC, O&G, Carbamates Headspace in VOA Vials? ( >6mm): □ No □N/A □Yes Trip Blank Present: □Yes □ No IIN/A Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments): Project Manager Review:

Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526215001	768665	Drinking Water	07/24/20 09:34	07/24/20 12:15





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526215001	768665	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

Date: 07/31/2020 12:51 PM

Sample: 768665	Lab ID: 10	526215001	Collected: 07/24/2	20 09:34	Received: 07	/24/20 12:15	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 11:56	123-91-1	
1,4-Dioxane-d8 (S)	95	%	70-130	4	07/29/20 12:26	07/00/00 44.50		



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

QC Batch: 652249

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526215001

METHOD BLANK: 3546520

Date: 07/31/2020 12:51 PM

Matrix: Water

Associated Lab Samples: 10526215001

Parameter Units Result Limit Analyzed

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/30/20 08:29

 1,4-Dioxane-d8 (S)
 %
 88
 70-130
 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

		10526212001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
1,4-Dioxane (p-Dioxane)	ug/L		2.1	2.1	1.7	1.8	80	84	70-130	2	20		
1,4-Dioxane-d8 (S)	%						90	91	70-130				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526215

Date: 07/31/2020 12:51 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526215

Date: 07/31/2020 12:51 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526215001	768665	EPA 522	652249	EPA 522	652612

Pace Analytical www.paceauscon

Section B

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Semples Semples SAMPLECONDITIONS Sealed Cooler VXIAN Z WO#: 10526215 Custody Page: Rei Received on TEMP In C TIME 12.8 17 K 1/15/2 Menpe Franco 10526215 DATE Signed'7/24/24 DATE annika.asp@pacelabs.com, ACCEPTED BY LAFFILIATION enexolb-A,1 SS3 N/A teeT sesylanA Other Methanol Preservatives Nazszoa Pace Project Manager. Pace Profile #: 39664, 4 HOBN Invoice Information:
Attention:
Company Name: нсі EONH Pace Quote: Section C H2SO4 Address: 0305 Unpreserved PRINT Name of SAMPLER: Day SIGNATURE of SAMPLER: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION Project Name. Water Grenlin Well Sampling - 2606-0017 Project #: Kスクンシュンジューローウィン DATE 8 DATE COLLECTED Feb. RELINQUISHED BY LAFFILLATION. TIME 7/24/20 START Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE ourchase Order#: MATRIX CODE (see valid codes to left) Project Name: Copy To: MATRIX
Drinking Water
Water
Waste Water
Waste World
Product
SoulSolid
Oil
Wipe
Air
Other
Tissue ADDITIONAL COMMENTS One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. lail: kjaworski@wenck.com equired Client Information: rsis to be performed at Pace FL umpany: Wenck As Idress: 1800 Pion aple Plain, MN 55359 quested Due Date: NONE Page 9 of 12

(N/A)

(V/V)

# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Page 10 of 12

Labeled by: \_\_

ENV-FRM-MIN4-0150 Rev.00

Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt		ر	Pr	oject #:	WO#	::10	52621	5
Upon Receipt Wenck Associa	<u>stes,                                   </u>	Inc.	<u> </u>		PM: AK		Due Date:	
Courier:   Fed Ex   UPS   WL 7-24-26   Pace   SpeeDec   Tracking Number:   T\$34-38   C 37, 18		SPS Ommerci	MCI al gee Ex 28 [			: WENCK		01/01/20
	No	Sea	als Intact	 :?	⊠No	Biologi	cal Tissue Frozen?	Yes No No NA
Packing Material: Bubble Wrap Bubble B		None	∏otł	ner:	4-4		Temp Blank?	∑Yes □No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)		Type of	_		Blue	None	☐Dry ☐Melte	
Did Samples Originate in West Virginia? ☐Yes ☒No	We	re All Co	ntainer '	Temps Take	en? 🔲 Yes	□no ⊠n	/A	
Temp should be above freezing to 6°C Cooler Temp Re						°c /	Average Corrected	l Temp
Correction Factor: 1700 Cooler Temp Correcto	ed w/tem	p blank	27	, y. o		oc	(no temp blank	only): See Exceptions
USDA Regulated Soil: ( X N/A, water sample/Other:	naps)? [	Yes	∏No	A, Did saı Hawaii	mples origina i and Puerto (	ite from a fo Rico)?	ning Contents: reign source (intern: Yes  N UR/COC paperwo	0
						C	OMMENTS:	
Chain of Custody Present and Filled Out?	¥Yes	□No		1.				
Chain of Custody Relinquished?	Yes	□No	····	2.				
Sampler Name and/or Signature on COC?	Yes	No	□N/A	3.				
Samples Arrived within Hold Time?  Short Hold Time Analysis (<72 hr)?	Yes Yes	No		4. 5. ☐Fee	cal Coliform	HPC Tota	al Coliform/E coli B	OD/cBOD Hex Chrome
Rush Turn Around Time Requested?	✓Yes	□No			D S Dan		: ∐Ortnopnos ∐Otr	ner
Sufficient Volume?	Yes	□No		7.	7 3 240	1		
Correct Containers Used?	<b>✓</b> Yes	□No		8.				
-Pace Containers Used?	Yes	□No		0.				
Containers Intact?	Yes	□No		9.		****		
Field Filtered Volume Received for Dissolved Tests?	☐Yes	□No	\ <b>⊠</b> N/A	10. Is se	ediment visil	ole in the di	ssolved container?	☐Yes ☐No
Is sufficient information available to reconcile the samples	<u> </u>		year.				ontainer Below:	See Exception
to the COC?	✓Yes	□No			·	•		
Matrix: Water Soil Oil Other	<del></del>							
All containers needing acid/base preservation have been checked?	∐Yes	∏No	<del>[Z</del> N/A	12. Sampl	e #			
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∏No	⊠n/a		] NaOH	HNO:	3 ∏H₂SO₄	Zinc Acetate
	<b></b>	_		Positive fo	or Res. 🔲 Ye	s		See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	Yes	∐No	□n/a	Chlorine?	No	o pł	ł Paper Lot#	
DRO/8015 (water) and Oloxin/PFAS				Res. Chlor	ine 0-	6 Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	∐Yes	□No	<b>™</b> N/A	13.				See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	名N/A		•			
Trip Blank Present?	∐Yes	□No	<b>⊠</b> N/A	14.			7	, , , , , , , , , , , , , , , , , , , ,
Trip Blank Custody Seals Present?	☐Yes	□No	N/A	Pace	Trip Blank L	ot # (if pure	chased):	
CLIENT NOTIFICATION/RESOLUTION						Field [	Data Required? [	_Yes
Person Contacted: KJ				Date/Tir		7/27/202		
	d that n	o colle	ction ti	me was l	<u>isted. 7/2</u>	<u> 7 - Clien</u>	t provided the	collection time of
Project Manager Review:	14.1	Jun	)		Date	<del>-</del>	7/27/2020	
Note: Whenever there is a discrepancy affecting North Carolina	complianc	e sample	s, a copy o	of this form v	Date: will be sent to	the North	racina DEHNIP Cort	ification Office ( i.e. out of
old, incorrect preservative, out of temp, incorrect containers).	.j		,		e sent te	1101 (11		

# WO#: 35566014 Internal Transfer Chain of

Samples Pre-Logged into eCOC.

ace Analytical

×

Of Origin: MN

Needed:

WORKO	Workorder: 10526215	Workorder N	Workorder Name: B002606-19-017 Water Gremlin	-19-017 Water	Gremlin	OWI	Owner Received Date:	e: 7/24/2020	Results Requested By:	7/31/2020
Report To	0		Subcontract To	t To				Requested Analysis	Analysis	
Annika Asp Pace Analy 1700 Elm S Suite 200 Minneapolis Phone (612	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace A 8 East Ormon Phone	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	d Beach	Preserved Containers	e in DW by 522 (Pace FL)			
Item Sar	Sample ID	Sample Type	Sample Collect Type Date/Time	Lab ID	Matrix	AG1U(T)	лвжоіG-∳,1			LAB USE ONLY
1 768665	365	PS	7/24/2020 00:00	10526215001	Drinking 1		×			
2										
က										
4 1										
٥		-							Comments	
Transfers	s Released By	0.	Date/Time	Received By			Date/Time			
1	1	4 le Maco	1/03/10	W AS	11)ace	9	2/28/20	وهره		
N 10		1						1-3 phe-1	6	
Cooler	Cooler Temperature on Receipt	Receipt	SnO O.	Custody Seal Y	Y or N	Rece	Received on Ice Y	N	Samples Intact Y	Z

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Project Manager Review:

Document Name; Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13 Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

# WO#:35566014

erm (SCUR)

Date:

Project Manage CLIENT:	Due Date:	07/31/20	Date and Initials of person:  Examining contents:  Label:  Deliver:  pH:
Thermometer Used: 1349	Date: 7/28/3	Time: 100	15 Initials: BRN
Shipping Method:	(Correction Factor) (Correction Factor) (Correction Factor) (Correction Factor) (Correction Factor) (Correction Factor) (SPS Client Corrity Overnight Standar	/ projects, all containers verified (Actual) (Actual) (Actual) (Actual) (Actual) (Actual) Commercial Pace of Overnight Ground Ground	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted Comments:	1 Time: Qty:
Chain of Custody Present	ØYes □ No □N/A		
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name COC	Øyes □ No □N/A		
Samples Arrived within Hold Time	ØYes □ No □N/A		
Rush TAT requested on COC	DYes □ No □N/A	Due 713	
Sufficient Volume	CK/co CINIC CINICA		
	☐Yes ☐ No ☐N/A		
Correct Containers Used	UYes □ No □N/A		
Containers Intact Sample Labels match COC (sample IDs & date/time of collection)	<i>U</i> ,		
Containers Intact Sample Labels match COC (sample IDs & date/time of collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in	TYES NO NA	Preservative:_ Lot #/Trace #:_	eservation Information:Time:
Containers Intact Sample Labels match COC (sample IDs & date/time of collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G,	TYES NO NA	Preservative:_ Lot #/Trace #:_ Date:	
Containers Intact Sample Labels match COC (sample IDs & date/time of collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, deadspace in VOA Vials? ( >6mm):	UYes   No   N/A  Carbamates	Preservative:_ Lot #/Trace #:_ Date:	
Containers Intact Sample Labels match COC (sample IDs & date/time of collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in compliance with EPA recommendation:	UYes   No   N/A  Carbamates  UYes   No   N/A  OYes   No   N/A  OYes   No   N/A	Preservative:_ Lot #/Trace #:_ Date:	Time:





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

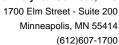
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526690001	712565	Drinking Water	07/29/20 12:55	07/29/20 16:39





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526690001	712565	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

Date: 08/05/2020 01:30 PM

Sample: 712565	Lab ID: 10	526690001	Collected: 07/29/2	20 12:55	Received: 07	/29/20 16:39 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 13:12	123-91-1	
1,4-Dioxane-d8 (S)	103	%	70-130	4	08/03/20 13:32	00/04/00 40:40	1	

(612)607-1700



#### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

QC Batch: 653465

Analysis Method:

EPA 522

Analyzed

QC Batch Method: EPA

EPA 522

Analysis Description: 522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526690001

METHOD BLANK: 3552677

1,4-Dioxane (p-Dioxane)

Date: 08/05/2020 01:30 PM

Matrix: Water

Associated Lab Samples: 1053

10526690001

Blank Reporting
Parameter Units Result Limit

ug/L ND 0.20 08/04/20 08:26 % 103 70-130 08/04/20 08:26

LABORATORY CONTROL SAMPLE: 3552678

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887

MS MSD 10526688001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 21.4 21 22.2 104 70-130 20 ug/L 21.9 104 1,4-Dioxane-d8 (S) % 111 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

#### **DEFINITIONS**

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J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526690

Date: 08/05/2020 01:30 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526690

Date: 08/05/2020 01:30 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526690001	712565	EPA 522	653465	EPA 522	653821



CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

MONE For Proper Name Water Country Well Sampling - 2000-0017 Proper Name Proper Name Water Country Well Sampling - 2000-0017 Proper Name P	ection A			Section B				••••	J. 12117-01	·		saı	LEGA	LDC	OCUN	ien	T. Al	l rele	vani	fields	must b	e con	plete	d acc	urate	lv	٠		
SAMPLE ID  ON CHARGE OF THE CONTROL				Required	Project	Informatic	on:						•				6									· <b>y</b> ·	7.1 1.1		
Friend Scales   Supervision Colors   Supervision Co				Report To:									formati	ion;										** ·					
# Inches   Property		1800 Pioneer Creek Center		Copy To:									Marra										7	7	L	Page :			
NOTE:			-										vame:										[					Of	
The state of the late of the l	one;																						20000			*-			
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SAMPLE ID  Out Character per bias.  Out Charac	drester	one name 211 2 Charl		Project #:	RO	0240	S- 19-	- 1	- 2000-00		Comp	Projec		_	an	nika.a	BSP(I)	pacel	abs.co	m.			(Decor)				MAC CONTRACTOR	GARAGE	
SAMPLE ID  Construction for the control of the cont											ras	COUR	0 #:	3966	4, 4														
SAMPLE ID  Construction for the control of the cont	- 1				12					7								30.23				Culting to	and the same of						
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Compile the most be unique   Compile the mo	- 1	0.48454			용	≨		1		181	- 1	1	1 1	- 1	1	1 1	1			11	11			_	++				
Compile the most be unique   Compile the mo	ı	SAMPLE ID	SolfSolid	SL.		11 .	TA	1	1.	ğ	- 1		11	- [	1	1 1	7		-	11	11		ll	1.		III			25525
WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WOWN   WO	ı	One Character per box.	Wipe	OL WP		۳ ا	NAKI	<u> </u>	:ND	11	2	1	11	- 1	1		Q.	<b>S</b>	1	11	11		1 1		11	121			
WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WO#: 10526690   WOWN   WO	. 1	(A-Z, 0-01, -)	Air	AR	Iğl	E	1	1	l	È	¥   ,	.	1	- 1			$\mathfrak{X}$	<b>2</b>	1	11	11		I			اچًا			
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# Pace Analytical\*

hold, incorrect preservative, out of temp, incorrect containers).

#### Document Name:

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Labeled by: MK1 Page 10 of 12

Sample Condition Client Name:			Pro	oject #:	1	JO# · 1 (	052669	300 <u> </u>
Wench Associ	atcs				, ,	MOH · TA		
Courier: Fed Ex UPS Pace Speed	U: Dee		 ∭Cli al See Ex			PM: AKA CLIENT: WENC		08/05/20
Tracking Number:			[	j [				
Custody Seal on Cooler/Box Present?	⊠Nο	Sea	ls Intact	?   Yes	Σh	lo <b>Biological</b>	Tissue Frozen?	Yes No N/A
Packing Material: Bubble Wrap Bubble		None	□Oth	er:		<del></del>		Yes □No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(04. ☐ T4(0254) ☐ T5(0489)	59)	Type of I	ce: )	()Wet [	Blue	□None □	Dry Melted	
Did Samples Originate in West Virginia?   Yes   Yes	lo <b>We</b>	re Ali Co	ntainer 1	Temps Tak	en? ∐Ye	es □No ⊠N/A		
Temp should be above freezing to 6°C Cooler Temp	Read w/ten	np blank		4.6		oC Ave	rage Corrected Te	mp
Correction Factor: Cooler Temp Corre		p blank		4.4		ºC (r	o temp blank onl	y): See Exceptions  1 Container
USDA Regulated Soil: ( N/A, water sample/Other:		)					g Contents: <i>M</i>	
Did samples originate in a quarantine zone within the L ID; LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check If Yes to either question, fill out	maps)? [	Yes	□No	Hawa	i and Pue	erto Rico)?	n source (internation  Yes No	nally, including
in res to clarici question, ini out	a veguiare	a 3011 C11	eckiist (F	-14114-Q-33	o) and n		MENTS:	
Chain of Custody Present and Filled Out?	₩Yes	□No		1		COIV	IIVILITIS.	
Chain of Custody Relinquished?	Yes	No □No	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1. 2.				
Sampler Name and/or Signature on COC?	¥Yes	□No	□n/a	3.				
Samples Arrived within Hold Time?	₹¥Yes	No	11.77.	4.				
Short Hold Time Analysis (<72 hr)?	□Yes	⊠No		5.   Fe	cal Colifor	rm	oliform/E coli BOD/ Orthophos Other	cBOD Hex Chrome
Rush Turn Around Time Requested?	Yes	□No		6. ST	V 5 i	Day		
Sufficient Volume?	Yes	□No	· · · · · · · · · · · · · · · · · · ·	7.				
Correct Containers Used?	Yes	□No		8.				
-Pace Containers Used?	¥Yes	□No						
Containers Intact?	¥Yes	□No	<del></del>	9.				
Field Filtered Volume Received for Dissolved Tests?	☐Yes	□No	XIN/A			visible in the disso		Yes No
Is sufficient information available to reconcile the sample to the COC?	es Yes	□No		11. If no,	write iD/	Date/Time on Conta	iner Below:	See Exception
Matrix: Water Soil Oil Other			·	12.2				(0100)
All containers needing acid/base preservation have been checked?	∐Yes	□No	<b>⊠</b> N/A	12. Samp	le#			
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanida	∐Yes	□No	<b>⊠</b> N/A		] NaOH	∏ HNO₃	∐H₂SO₄	Zinc Acetate
(11103), 112304, (2pri, 14801173 Suitide, 148011712 Cyalliqu	=)		_	Positive f	or Res. [	Yes		See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	∐Yes	□No	<b>⊠</b> N/A	Chlorine?	=	=	per Lot#	
DRO/8015 (water) and Dioxin/PFAS				Res. Chlo	rine	0-6 Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	Yes	□No	₹ÎN/∆	13.		L	<u> </u>	See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	利N/A N/A					
Trip Blank Present? Trip Blank Custody Seals Present?	□Yes	□No	⊠N/a	14.			35	
CLIENT NOTIFICATION/RESOLUTION	Yes	No.	Z <b>\</b> N/A	Pace	e I rip Bla	nk Lot # (if purchas		es No
Person Contacted:				Date/Ti	me:	. icia bati		C3 □140 ′
Comments/Resolution:				•				
Print Market								
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carol	na compliano	e samnle	a conv	of this form	Date:		2020	tion Office / ! : - f
1 11 1	a compliant	~ authie	, a copy c	a mis iotili	will ne 26	iii to tile North Card	mia DEHINK Certifica	tion Oπice ( i.e out of

#### Internal Transfer Chain of

Samples Pre-Logged into eCOC.

WO#: 35567058

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	rkorder: 10526690	Workorder N	lame: BC02606		r Gremlir	n W		Own	er Re	ceive	ed D	ate:	7/29/2				quested	Ву:	8/5/2020
Ann Pac 170 Suit Min	ika Asp e Analytical Minnesota 0 Elm Street e 200 neapolis, MN 55414 ne (612)607-1700		8 Eas Ormo	Analytical Ormot t Tower Circle nd Beach, FL 3 e (386)672-566	2174					7	DW by 522 (Pace FL)		Req	uested	Analys	is			
_						P	reserv	ed Cor	tainers	6	ane								
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	NA2S203	kG1T			2	1,4-Uloxa							ı	AB USE ONLY
1	712565	PS	7/29/2020 12:55	10526690001	Drinking	1				]	x								
2																			
3								_		_	-						$\perp$		
5								+	+	-	1	-	-	$\vdash$	_	++	+	-	
5							_		$\perp$	_	-	_			_	Comme	nts	_	
Tran	sfers Released By		Date/Time	Received I	 Зу				Date/	/Time									
1 2		ree	7/30/20 1	2:40 RRBI		49			7/3	1120	11:3	0							
3																			
Coc	oler Temperature on F	Receipt 5.6	°C Cus	stody Seal (	or N			Rec	havia	on le	-0	(V)	r N			Sample	es Intac	+(V)	or N

Of Origin: MN

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



#### Document Name: Sample Condition Upon Receipt Form Document No.:

F-FL-C-007 rev. 13

(Correction Factor) \_ 5,6

(Correction Factor)

\_(Correction Factor) \_\_\_\_\_

\_(Correction Factor) (Actual)

(Actual)

\_\_(Actual)

☐ Credit Card

Seals intact: Yes No

Comments:

Date:

Other

(Correction Factor)

\_\_\_\_(Correction Factor) \_\_\_\_

☐ Third Party

None

□ No □N/A

□ No □N/A

□ No □N/A ∕ÓYes □ No □N/A

□Yes ZNo □N/A

A Yes □ No □N/A ÄYes □ No □N/A

Yes □ No □N/A

Yes No No NA

ZYes □ No □N/A

□ No □N/A

Shorted Date:

Fed Ex ☐ UPS ☐ USPS ☐ Clieḥt ☐ Commercial ☐ Pace

□No

Yes

Yes

Yes

Document Revised: May 30, 2018 Issuing Authority

**Project Project Manage** 

State of Origin:

☐ Other\_

☐ Recipient

Custody Seal on Cooler/Box Present: Yes

Samples shorted to lab (If Yes, complete)

Relinquished Signature & Sampler Name COC

Sample Labels match COC (sample IDs & date/time of

All containers needing acid/base preservation have been

All Containers needing preservation are found to be in

compliance with EPA recommendation:

Chain of Custody Present

Sufficient Volume

Containers Intact

cullection)

checked.

Correct Containers Used

Chain of Custody Filled Out

Samples Arrived within Hold Time Rush TAT requested on COC

Packing Material: Bubble Wrap Bubble Bags

Cooler #1 Temp.\*C 5,5 (Visual)

Cooler #2 Temp.°C

Cooler #3 Temp.°C

Cooler #4 Temp.°C\_\_\_

Cooler #5 Temp.°C

Cooler #6 Temp.°C

Billing:

Tracking #

Due Date: 08/05/20 PM: ADC

CLIENT: PACMIN

Client.

(Visual)

\_(Visual)

(Visual)

(Visual)

Sender

4710

(Visual)

### Pace Florida Quality Office m (SCUR) Date and Initials of person: **Examining contents** Label: Deliver: Initials: For WV projects, all containers verified to ≤6 °C Samples on ice, cooling process has begun Samples on ice; cooling process has begun Samples on ice, cooling process has begun Other\_ □ International Priority □ Unknown None Shorted Time: Qty:\_ Preservation Information: Preservative: Lot #/Trace #:

Exceptions: VOA, Coliform, TOC,	O&G, Carbamates		Initials:	
leadspace in VOA Vials? ( >6mm):	□Yes	□ No ØN/A		
rip Blank Present:	□Yes	II No IZNIA		
lient Notification/ Resolution: Person Contacted:			Date/Time:	
comments/ Resolution (use back for additi	onal comments):			

Project Manager Review:

Date:





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Enclosures

Project Manager







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526540001	809116	Drinking Water	07/28/20 13:59	07/28/20 14:33





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526540001	809116	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

Date: 08/05/2020 01:21 PM

Sample: 809116	Lab ID: 10	526540001	Collected: 07/28/2	20 13:59	Received: 07	/28/20 14:33	Matrix: Drinking Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA :	522					
	Pace Analytic	al Services -	Ormond Beach							
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	08/03/20 13:32	08/04/20 09:29	123-91-1			
1,4-Dioxane-d8 (S)	102	%	70-130		08/03/20 13:32	00/04/00 00 00				

(612)607-1700



#### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

QC Batch: 653465

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Analyzed

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526540001

METHOD BLANK: 3552677

Date: 08/05/2020 01:21 PM

Matrix: Water

Associated Lab Samples: 10526540001

Blank Reporting

Parameter Units Result Limit

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 08/04/20 08:26

 1,4-Dioxane-d8 (S)
 %
 103
 70-130
 08/04/20 08:26

LABORATORY CONTROL SAMPLE: 3552678

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887

MS MSD 10526688001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 21.4 21 22.2 104 70-130 20 ug/L 21.9 104 1,4-Dioxane-d8 (S) % 111 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526540

Date: 08/05/2020 01:21 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526540

Date: 08/05/2020 01:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526540001	809116	EPA 522	653465	EPA 522	653821

Face Attalytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Samples Samples  $\tilde{3}$ Custod Page: MO#:10526540 Residual Chlorine (Y/N) Received on ٥ TEMP IN C 55 Ś 15/2 S 10526540 amika.asp@pacelabs.com, 622 1,4-dioxene NA (And Face Vielra) HOSTON JOUR Nethanol GISON Preservatives Pace Quote:
Pace Project Manager: ar
Pace Profile #: 39664, 4 Ne2S2O3 HOBN Invoice Information:
Attentior:
Company Name:
Address: ЮН EONH くが H2804 Section C 998 DevieserquU # OF CONTAINERS SAMPLER NAME AND SKRVATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: Project Name: Water Grenlin Well Sampling - 2606-0017 TIME 8 DATE COLLECTED TIME 3 START Required Project Information: DATE Report To: Kelly Jaworski SAMPLE TYPE (G=GRAB C=COMP) Purchase Order #: MATRIX CODE (see valid codes to left) **^37** Section B Copy To: MATRUX
Distribing Water
Water
Water
Water
Water
Product
SoulSodd
Oa
Wipe
Air
Other
Tissue SFD STOW One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID ADDITIONAL COMM equired Client Information: mpany: Wenck Associates, Inc. 人の公司 kjaworski@wenck.com sis to be performed at Pace FI. ple Plain, MN 55359 one: NONE T 0 8 4 5 9 L 8 6 0 E 2

Page 9 of 12

(N/A)

TAYAT Cooler belse2

(V/V)

# ace Analytical °

**Project Manager Review:** 

#### **Document Name:**

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -

#### ENV-FRM-MIN4-0150 Rev.00 **Minneapolis** Sample Condition **Client Name:** Project #: WO#:10526540 **Upon Receipt** Lenck PM: AKA Courier: Fed Ex UPS USPS Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions Tracking Number: Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes Biological Tissue Frozen? Yes No N/A Packing Material: Bubble Wrap ☑Bubble Bags Temp Blank? Yes None Other: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: ☑Wet Blue Type of ice: None Dry Melted T4(0254) T5(0489) Were All Container Temps Taken? ☐Yes Did Samples Originate in West Virginia? ☐Yes ☐No □No ☑N/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: OC. **Average Corrected Temp** (no temp blank only): See Exceptions Correction Factor: -0, 2 \_ Cooler Temp Corrected w/temp blank :\_ OC. ☐ 1 Container USDA Regulated Soil: ( N/A, water sample/Other: Date/Initials of Person Examining Contents: \_ Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? No Hawaii and Puerto Rico)? Yes □No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Yes Chain of Custody Present and Filled Out? □No Chain of Custody Relinquished? **∠**Yes No 2. **Yes** Sampler Name and/or Signature on COC? □No □N/A 3. Samples Arrived within Hold Time? Yes □No ΖΊNο Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Short Hold Time Analysis (<72 hr)? Yes ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other Yes Rush Turn Around Time Requested? 6. □No Sufficient Volume? 7. **Z**ÎYes □No **Correct Containers Used?** Yes □No 8. -Pace Containers Used? √Yes □No Containers Intact? Yes No 9. Field Filtered Volume Received for Dissolved Tests? □Yes □No ₽N/A Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? **∠**Yes □No Matrix: Water Soil Oil Other All containers needing acid/base preservation have been Yes No ✓N/A 12. Sample # checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO<sub>3</sub> H<sub>2</sub>SO<sub>4</sub> ØN/A Zinc Acetate Yes □No compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception □No ∐Yes Exceptions: VOA, Coliform, TOC/DOC Oil and Grease. Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. ☑n/a ☑n/a ☐ Yes **See Exception** □No Headspace in VOA Vials (greater than 6mm)? Yes □No Trip Blank Present? ∐Yes □No ØN/A 14. Trip Blank Custody Seals Present? Yes □No ĬÎN/A Pace Trip Blank Lot # (if purchased): **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Page 10 of 12

Labeled by: \_\_\_\_ CEC

7/29/20

Date:

of Origin: MN Cert. Needed:

Pace Analytical \*

Yes

×

7/28/2020

8/4/2020

Requested Analysis

Results Requested By:

Owner Received Date:

Workorder Name: B002606-19-017 Water Gremlin

X Samples Pre-Logged into eCOC.

Workorder: 10526540

Annika Asp

Report To

Subcontract To

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

ਸੀਹਿਮ

LAB USE ONLY

×

Drinking Matrix

10526540001

7/28/2020 13:59

PS

Lab ID

Date/Time Collect

Sample Type

Item | Sample ID

809116

Z

Samples Intact | Y or

Received on Ice (Y) or

25/20/16

D. C

1000

02/62/ Date/Time

Received By

Released By

**Transfers** 

Date/Time

Comments

\*\*\*In order to maintain client confidentiality, location/hame of the sampling site, sampler's name and signature may not be provided on this COC document.

Custody Seal (Y) or N

ပ

Cooler Temperature on Receipt 4 4

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009

Wednesday, July 29, 2020 11:34:05 AM

Page 11 of 12

Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Pace Analytical Ormond Beach

8 East Tower Circle

Ormond Beach, FL 32174 Phone (386)672-5668

Pace Analytical

Document Name Sample Condition Upon Receipt Form Document No. F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#	#:3556636	m (SCUR)
Projec PM: SI	MM Due Date: 08/04/	Date and Initials of person:
Project Manage CLIENT	T: PACMIN	Examining contents:
Clien		Label: Deliver:
	1110	pH:
Thermometer Used: 1337	Date: 7/30/20	Time: 1120 Initials: BRN
State of Origin:		containers verified to ≤6 °C
Cooler #1 Temp.°C 1 (Visual)	(Correction Factor) U,U	(Actual) Samples on ice, cooling process has beg
Cooler #2 Temp. °C(Visual)		(Actual) Samples on ice, cooling process has be
Cooler #3 Temp.°C(Visual)		(Actual) Samples on ice, cooling process has beg
Cooler #4 Temp.°C(Visual)		
Cooler #5 Temp.°C(Visual)		
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has beg
Courier: Fed Ex UPS U	USPS Client Commercia	Pace Other
Shipping Method:  First Overnight	riority Overnight	
☐ Other	otalidad Overlight	t □ Ground □ International Priority
Billing: Recipient Ser	nder (	t Card ☐ Unknown
Tracking # 1520 752	-3 4597	
1		
Custody Seal on Cooler/Box Present:	Seals intact:	Yes No Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bub	ble Bags None Other	_
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted Time: Qty:
	Commen	ts:
Chain of Custody Present	ØY98 ØNo □N/A	
Chain of Custody Filled Out	DYES DINO DINA	
Relinquished Signature & Sampler Name COC	Lyes DNO DNIA	
Samples Arrived within Hold Time	□Yes □ N/A	
Rush TAT requested on COC	□Yes © No □N/A	
Sufficient Volume	Zyes ONO ON/A	
Correct Containers Used	EXES ONO DIN/A	
Containers Intact	Elygs INO IN/A	
Sample Labels match COC (sample IDs & date/time o collection)	DYES FINO FINA	
All containers needing acid/base preservation have be checked.	een //	Preservation Information:
All Containers needing preservation are found to be in		Preservative: Lot #/Trace #
compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O8	☑Yes □ No □N/A	DateTime:
Headspace in VOA Vials? ( >6mm):	□Yes □ No □N/A	Initials:
rip Blank Present:	□Yes □ No ☑N/A	
	TICS EINO ENA	
Client Notification/ Resolution:  Person Contacted:	Date	/Time:
		/Time;
Comments/ Resolution (use back for addition	al comments):	
	-	
Project Manager Review:		Doto
· ·		Date





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

#### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







#### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320

Arizona Certification# AZ0819 Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





#### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

Lab ID	Sample ID	Matrix	Date Collected	Date Received		
10526541001	791726	Drinking Water	07/28/20 10:26	07/28/20 14:33		





#### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526541001	791726	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





#### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

Date: 08/05/2020 01:20 PM

Sample: 791726	Lab ID: 105	26541001	Collected: 07/28/2	20 10:26	Received: 07	/28/20 14:33	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA :	522			
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	08/03/20 13:32	08/04/20 09:13	3 123-91-1	
1,4-Dioxane-d8 (S)	103	%	70-130	1	08/03/20 13:32	08/04/20 09:13	3	

(612)607-1700



#### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

QC Batch: 653465

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526541001

METHOD BLANK: 3552677 Matrix: Water

Associated Lab Samples: 10526541001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/04/20 08:26 ug/L 1,4-Dioxane-d8 (S) % 103 70-130 08/04/20 08:26

LABORATORY CONTROL SAMPLE: 3552678

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679

Date: 08/05/2020 01:20 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887

			MS	MSD								
		10526688001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	21.4	21	22.2	21.9	104	104	70-130	1	20	
1,4-Dioxane-d8 (S)	%						111	110	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



#### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **WORKORDER QUALIFIERS**

WO: 10526541

Date: 08/05/2020 01:20 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





#### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526541

Date: 08/05/2020 01:20 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526541001	791726	EPA 522	653465	EPA 522	653821

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

			7											7	T-	<del></del>	7							S <b>74</b> 0			F	S	BlqmB2 lostni (V/Y)
accurately.		Page:			Regulation Agents		State (Location			(N/,	idual Chiorine (Y	зеУ	3	 .0526541										SAMPLCOMBIDAS		Sile N	9	y in C	
"" we completed accurately.								Requested Arrainsis Fillesed (YM)						 01:#0M		10526541							DATE	2	433	5631 82/5			12/20
						annika.asp@pacelabs.com,		ŀ	, N/A		Sesyland	X											ACCEPTED BY LATERATION	(wenck	MUNT	pace		DATESimad	
	invoice Information:	XX:	Company Name:	:5		anager:	39664, 4		Preservatives		Methenol Necson Hol Huos Habot Habot	X												1202				Dary Lasson	
Section C	Invoice	Attention:	Compa	Address:	200	Page P	Pace Profile #:	-	N		SAMPLE TEMP A # OF COUTAINER Unpreserved												TIME	10 1	2	(F)	JRE	6	
						pling - 2606-0017			,	END	DATE TIME	5						<del> </del>						Pp 7/6/20	7/28/	11001	AME AND SIGNATURE	PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	
	mation:	orski				or Gremin Well San	10-41-400 - 10-01 /		COLLECTED	START		RIS		,									RETINUUSHEB BY / AERLATION	Bottle Pres	- 701	) ) )	SAMPLER NAM	PRINT Nam SIGNATUR	
	ect Infor	ely Jaw		į			2			(G=GRAB C=	BAYT BIAMA8	હ											PISION	P20	4	矛			
Section B	Required Project Information:	Report To: x	Copy 16:	Orner Ondo	Project Name	Project #	L'indeall.		900	Market WT Water WY Product P Product Scalisode St. Od	A P. Ct.	<u> </u>											REI	A.	100	\$ -			
<b>&amp;</b>	quired Client Information:		ante Plain MN 55350	tali bisuncki@usork mm	NONF	quested Due Date:				SAMPLE ID	One Character per by (A-2, 0-91,) Sample Ids must be u	974164											ADDITIONAL COMMENTS	ysk to be performed at Pace FL					
- ction A	e la	Market 19.	G dic	1	ğ	duest					# Mati	÷	N	· ·	ý,	ي	2		o	9	÷	2		ysis to t			Pa	age 9 o	† 12

## Pace Analytical®

hold, incorrect preservative, out of temp, incorrect containers).

#### **Document Name:**

#### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

Sample Condition Client Name:		,	Dr	oject #: 1104 . 4 05005 4 4
Upon Receipt Wenck			PI	<sup>%</sup> W0#:10526541
Courier: Fed Ex UPS Pace SpeeDee		SPS		
Tracking Number:		Jillileici		
Custody Seal on Cooler/Box Present?	ĴNo	Sea	als Intact	? ☐Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☐N/A
Packing Material: Bubble Wrap Bubble Ba		None	∐Otł	,
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)		Type of	Ice:	ØWet □Blue □None □Dry □Melted
Did Samples Originate in West Virginia? ☐Yes ☐No	We	re All Co	ontainer '	Temps Taken? □Yes □No ☑N/A
Temp should be above freezing to 6°C Cooler Temp Rea	ad w/ten	np blank	(:	/ S OC Average Corrected Temp
Correction Factor: <u>-0,2</u> Cooler Temp Correcte	d w/ten	p blank	<u>:</u>	(no temp blank only): See Exceptions  OC C 1 Container
USDA Regulated Soil: ( N/A, water sample/Other:				Date/Initials of Person Examining Contents: 7N 7282e
Did samples originate in a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check ma			CA, FL, G/ □No	A, Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?
				-MN-Q-338) and include with SCUR/COC paperwork.
				COMMENTS:
Chain of Custody Present and Filled Out?	Yes	□No		1.
Chain of Custody Relinquished?	Yes	□No		2.
Sampler Name and/or Signature on COC?	Yes	□No	□N/A	3.
Samples Arrived within Hold Time?	Yes	□No		4.
Short Hold Time Analysis (<72 hr)?	∐Yes	ØN₀		5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Nitrate Nitrite Orthophos Other
Rush Turn Around Time Requested?	Yes	□No		6.
Sufficient Volume?	✓Yes	□No		7.
Correct Containers Used?	✓Yes	□No		8.
-Pace Containers Used? Containers Intact?	Yes	□No	*****	
	Yes 	∐No		9.
Field Filtered Volume Received for Dissolved Tests?	Yes	No	ZN/A	10. Is sediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No		11. If no, write ID/ Date/Time on Container Below: See Exception
Matrix: Water Soil Oil Other	<del></del> _			
All containers needing acid/base preservation have been checked?	∐Yes	∏No	⊠n/a	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation?	∐Yes	□No	ØN/A	☐ NaOH ☐ HNO <sub>3</sub> ☐ H <sub>2</sub> SO <sub>4</sub> ☐ Zinc Acetate
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)				
		п.	A.v.	Positive for Res. Yes See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	∐No	ØN/A	Chlorine? No pH Paper Lot#
DNO/BOLD (Water) and DIOXIN/F1 AD				Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Y <b>e</b> s	□No	☑N/A	13. See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	ØN/A	
Trip Blank Present? Trip Blank Custody Seals Present?	☐Yes	□No	N/A	14.
	Yes	□No	IIN/A	Pace Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Field Data Required? ☐Yes ☐No
Comments/Resolution:				Date/Time:
7/11	1	- 1		
Project Manager Review:	11	14		Date: 7/29/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Page 10 of 12 Labeled by: CEG

# Internal Transfer Chain of Cus Samples Pre-Logged into eCOC.

Workorder Name: BC02606-19-017 Water Gremlin

Subcontract To

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Face Analytical ®

Ilts Requested By:

8/4/2020

Requested Analysis

Pace Analytical Ormond Beach

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Workorder: 10526541

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

Phone (386)672-5663

Minneapolis, MN 55414 Phone (612)607-1700

Matrix Lab ID Date/Time Collect Sample Type

AGIR

10526541001 7/23/2020 10:26 PS

Item | Sample ID

791726

LAB USE ONLY

Drinking

Date/Time

Released By

**Transfers** 

Received By 02/12/

nace

ပ Cooler Temperature on Receipt 111

Custody Seal (Y) or N

Z

Samples Intact (Y) or

Z

Received on Ice N or

Comments

Date/Time

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature May not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12



### Document Name Sample Condition Upon Receipt Form Document No. F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority Pace Florida Quality Office

**Project Project Manage** 

Thermometer Used:

Cooler #1 Temp. C

Cooler #2 Temp.°C

Cooler #3 Temp. C

Cooler #4 Temp.°C\_

Cooler #5 Temp.°C

Cooler #6 Temp.°C\_

Shipping Method:

Billing:

Tracking #

State of Origin:

□ Other

☐ Recipient

Custody Seal on Cooler/Box Present:

Samples shorted to lab (If Yes, complete)

Relinquished Signature & Sampler Name COC

Sample Labels match COC (sample IDs & date/time of

All Containers needing preservation are found to be in

All containers needing acid/base preservation have been

Exceptions: VOA, Coliform, TOC, O&G, Carbamates

Comments/ Resolution (use back for additional comments):

Packing Material: Bubble Wrap

Chain of Custody Present

Chain of Custody Filled Out

Rush TAT requested on COC

Correct Containers Used

Sufficient Volume

Containers Intact

Trip Blank Present:

collection)

checked.

Samples Arrived within Hold Time

compliance with EPA recommendation:

Headspace in VOA Vials? ( >6mm):

Client Notification/ Resolution: Person Contacted:

Project Manager Review:

m (S

	WU#	35566	635	m (SCUR)
Project	PM: SMM	Due [	Date: 08/04/20	Date and Initials of person:
lanage	CLIENT:	PACMIN		Examining contents:
Client.	_			Label: Deliver:
	ranow = r	1 , ,		pH:
Jsed: T	337_	Date: 7/3	0/20 Time:	Initials: BRN
Origin:			For WV projects, all containe	ers verified to ≤6 °C
1.1 (V	isual) +3	_(Correction Fact	or) (Actual	Samples on ice, cooling process has begu
(V	isual)	_(Correction Fact	or)(Actual	Samples on ice, cooling process has begu
			or)(Actual	_ , , , , , , , , , , , , , , , , , , ,
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☐ First Ove	ernight 🖽 Priority		tandard Overnight 🔲	
Other				
Recipient	Sender	☐ Third Par	ty	☐ Unknown
LO_	156	4546		
ler/Box Pre	sent: Eyes	□No s	Seals intact: Yes	No Ice: Wet Blue Dry None
Bubble Wra	ap Bubble B		Other	
ab (If Yes, c		Shorted Date:		Shorted Time: Qty:
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& Sampler	Name COC	dyes □ No [		
Hold Time		Yes Dyo	JN/A	
n COC		□Yes □ No □	□N/A	
		✓Yes □ No □	DN/A	
d		Dyes D No	JN/A	
2 ( )		LY98 INO I	□N/A	
(sample IDs	s & date/time of	DYES NO D	IN/A	
d/base preser	vation have been	DY95 □ No □	JNI/A	Preservation Information:
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mmendation: ns: VOA, Colit	form, TOC, O&G, Ca	☑Yes ☐ No ☐ arbamates	Date:_ Initials	Time:
s? ( >6mm):		□Yes □ No ☑	/ /	
,		□Yes □ No □	/	
solution:			6	
cted:			Date/Time:	
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ı (use back	for additional co	mments):		





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Enclosures

Project Manager







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

Lab ID Sample ID		Matrix	Date Collected	Date Received	
10526361001	1299 Goose Lk RD	Drinking Water	07/27/20 12:54	07/27/20 14:00	





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526361001	1299 Goose Lk RD	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

Date: 07/31/2020 12:07 PM

Sample: 1299 Goose Lk RD	Lab ID: 105	26361001	Collected: 07/27/2	20 12:54	Received: 07	/27/20 14:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	•		2 Preparation Metho	od: EPA	522			
1,4-Dioxane (p-Dioxane)  Surrogates	0.95	ug/L	0.21	1	07/29/20 12:26	07/30/20 11:40	123-91-1	
1,4-Dioxane-d8 (S)	95	%	70-130	4	07/29/20 12:26	07/20/20 44.40		



### **QUALITY CONTROL DATA**

EPA 522

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

QC Batch: 652249

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Analysis Method:

Associated Lab Samples: 10526361001

METHOD BLANK: 3546520 Matrix: Water

Associated Lab Samples: 10526361001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) 88 70-130 07/30/20 08:29 %

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

 1,4-Dioxane (p-Dioxane)
 ug/L
 2
 1.9
 94
 70-130

 1,4-Dioxane-d8 (S)
 %
 98
 70-130

LABORATORY CONTROL SAMPLE: 3546522

%

1,4-Dioxane-d8 (S)

Date: 07/31/2020 12:07 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524 MS MSD 10526212001 MS Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 2.1 2.1 1.7 80 70-130 2 20 ug/L 1.8 84

90

91

70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526361

Date: 07/31/2020 12:07 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526361

Date: 07/31/2020 12:07 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526361001	1299 Goose Lk RD	EPA 522	652249	EPA 522	652612

Face Analytical

Section B

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ MO# 10526361 SAMPLECONDIDING Samples Sealed Cooler LYM Custody Page: Residual Chlorine (Y/V) (N/A) Received on ŝ TEMP In C 821 3,X Mistery. 12/10//2 S. 1-7. DATE annika.asp@pacelabs.com ACCEPTED BY LAFFILIATION 672 1,4-dioxane N/A 186T 868VIBNA Other Methanol Preservatives Nazszos 39664, 4 Pace Quote: Pace Project Manager: Pace Profile #. 39664, HOBM C. SOL Invoice Information: Attention: HCI Company Name: КОИН H2SO4 Section C Address: 2/27/20 1250 Unpreserved ひんかなしょう # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION SIGNATURE of SAMPLER PRINT Name of SAMPLER: Water Grenlin Well Sampling - 2606-0017 17.87 END DATE COLLECTED RELINQUISHED BY / AFFILIATION MARIA TIME START Project #: (( ハンごしい) Required Project Information: Report To: Kelly Jaworski SAMPLE TYPE (G=GRAB C=COMP) Purchase Order#: Project Name: (see valid codes to left) MATRIX CODE 91 Copy To: MATROX
Drinking Water
Waster
Waster
Waster
Product
SoilSoild Soil
Oil
Wipe
Aur
Other
Tissue One Character per box. (A-Z, 0-91, -) Sample Ids must be unique ADDITIONAL COMMENTS Yac Y 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: rsis to be performed at Pace FL 1299 aple Plain, MN 55359 one: NONE advested Due Date: Page 9 of 12 ILEW #

(N/A) ntact

# ace Analytical

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

### ENV-FRM-MIN4-0150 Rev.00 Sample Condition **Client Name:** Project #: WO#:10526361 **Upon Receipt** Due Date: 08/03/20 Courier: □USPS Fed Fx CLIENT: WENCK Pace SpeeDee Commercial See Exceptions **Tracking Number:** МNo **⊠**No Biological Tissue Frozen? ☐ Yes ☐ No 🗖 N/A Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Type of Ice: X Wet Blue None □Drv Melted T4(0254) 🔀 T5(0489) Did Samples Originate in West Virginia? ☐Yes XNo Were All Container Temps Taken? ☐Yes ☐No XN/A Cooler Temp Read w/temp blank: Temp should be above freezing to 6°C **Average Corrected Temp** (no temp blank only): See Exceptions Cooler Temp Corrected w/temp blank: °C ☐1 Container USDA Regulated Soil: ( N/A, water sample/Other: Date/Initials of Person Examining Contents: MHZ Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? □No Hawaii and Puerto Rico)? Yes □No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: Chain of Custody Present and Filled Out? Yes Yes □No 1. Chain of Custody Relinquished? □No 2. Sampler Name and/or Signature on COC? Yes □No □N/A 3. Samples Arrived within Hold Time? Yes □No 4. 5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome **∑**No Short Hold Time Analysis (<72 hr)? □Yes ☐Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other\_ **Rush Turn Around Time Requested?** ▼Yes □No Sufficient Volume? Yes □No 7. Yes **Correct Containers Used?** 8. □No -Pace Containers Used? Yes □No Yes Containers Intact? 9. □No Field Filtered Volume Received for Dissolved Tests? ☐Yes □No **⊠**N/A 10. Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? ∑Yes □No Matrix: X Water ☐ Soil ☐ Oil ☐ Other All containers needing acid/base preservation have been **1**€N/A 12. Sample # □Yes □No checked? All containers needing preservation are found to be in □ NaOH ☐ HNO₃ ∏H<sub>2</sub>SO₄ **₩**N/A Zinc Acetate Yes compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception □Yes Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, □No ★ZN/A Chlorine? ٦N٥ pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. N/A N/A See Exception ☐ Yes □No Headspace in VOA Vials (greater than 6mm)? ☐ Yes □No N/A N/A Trip Blank Present? 14. ☐ Yes □No

Comments/Resolution: **Project Manager Review:** www Date: 7/27/2020 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Date/Time:

☐ Yes

□No

hold, incorrect preservative, out of temp, incorrect containers).

CLIENT NOTIFICATION/RESOLUTION

Trip Blank Custody Seals Present?

Person Contacted:

Labeled by: \_\_\_\_ MM7 @Page 10 of 12

Field Data Required? Yes No

Pace Trip Blank Lot # (if purchased):

Yes e Of Origin: MN cert. Needed:

× 7/27/2020

Pace Analytical "

Workorder Name: B002606-19-017 Water Gremlin

x Samples Pre-Logged into eCOC.

Workorder: 10526361

Subcontract To

Pace Analytical Ormond Beach

Owner Received Date:

Results Requested By:

8/3/2020

1,4-Dioxane in DW by 522 (Pace FL)

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Phone (612)607-1700

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Preserved Containers

FOSSZAN

Matrix

Lab 10 Date/Time Collect Sample Type

LAB USE ONLY

7/27/2020 12:54 S

1299 Goose Lk RD Sample ID

Item

×

10526361001

Drinking

Received By Date/Time Released By **Transfers** 

Received on Ice Z ō **Custody Seal** ပ Cooler Temperature on Receipt

Z ō

Samples Intact Y

Z

0

Comments

1040

RUSUL

Date/Time

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Monday. July 27. 2020 4:17:15 PM

Page 1 of

FMT-ALL-C-002rev.00 24March2009



Document Name: Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Project i Project Manager

Project Manager Review:

PM: SMM

Due Date: 08/03/20

CLIENT: PACMIN

D	ate a	nd In	itials	of per	son:
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n (SCUR)

Examining contents:					
_abel:	7				
Deliver:					
H:					

Client:	Deliver:
Thermometer Used: 1349 Date: 7/28/20 1	pH: Fime: 1045 Initials: BRN
31/ 3/	ontainers verified to ≤6 °C
0-1-40 7	ctual) Samples on ice, cooling process has begun
Control of Town 10	ctual) Samples on ice, cooling process has begun
Co-do-#4 To 00	ctual) Samples on ice, cooling process has begun
Cooler #5 Temp. *C(Visual)(Correction Factor)(Ai	ctual) Samples on ice, cooling process has begui
Cooler #6 Temp. 'C(Visual)(Correction Factor)(Ad	
(Visual)(Correction Factor)(A	ctual) Samples on ice, cooling process has begun
Courier: Fed Ex UPS USPS Client Commercial	Pace Other
Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight	
Other	
Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit C	
Tracking# 320 7523 4033	· ·
Custody Seal on Cooler/Box Present: Yes No Seals intact: Ye	s No Ice: Wel Blue Dry None
Packing Material: Bubble Wrap Bubble Bags None Other	
Samples shorted to lab (If Yes, complete)  Shorted Date:	Shorted Time: Qty:
Silonou Bulo.	Shorted fille.
Comments:	
Chain of Custody Present	
Chain of Custody Filled Out   ☐Yes ☐ No ☐N/A	
Relinquished Signature & Sampler Name COC	
Samples Arrived within Hold Time	
Rush TAT requested on COC	, , , , , , , , , , , , , , , , , , ,
Sufficient Volume Ves No N/A	
Correct Containers Used Ves No N/A	
Containers Intact  Sample Labels match COC (sample IDs & date/time of	
collection)	
All containers needing acid/base preservation have been checked. □Yes □ No □N/A	Preservation Information:
All Containers needing preservation are found to be in	Preservative:ot #/Trace #:
Production of the party of the	Date: Time:
Headspace in VOA Vials? ( >6mm): □Yes □ No □N/A	mudia.
Trip Blank Present:	
Client Notification/ Resolution:  Person Contacted:	me:
Comments/ Resolution (use back for additional comments):	

Date:





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525700001	1337 Goose LK Rd	Drinking Water	07/20/20 14:05	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525700001	1337 Goose LK Rd	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

Date: 07/27/2020 10:35 AM

Sample: 1337 Goose LK Rd	Lab ID: 105	25700001	Collected: 07/20/2	0 14:05	Received: 07	/21/20 11:00 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA (	522			
	Face Analytica	ii Services -	Official Beach					
1,4-Dioxane (p-Dioxane)  Surrogates	0.80	ug/L	0.21	1	07/23/20 10:53	07/24/20 15:00	123-91-1	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

QC Batch: 650880

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525700001

METHOD BLANK: 3539245

Matrix: Water

Associated Lab Samples: 10525700001

 Parameter
 Units
 Blank Reporting Result
 Limit Limit
 Analyzed

 (p-Dioxane)
 ug/L
 ND
 0.20
 07/24/20 11:

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/24/20 11:14

 1,4-Dioxane-d8 (S)
 %
 76
 70-130
 07/24/20 11:14

%

LABORATORY CONTROL SAMPLE: 3539246

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (p-Dioxane) 2 1.7 83 70-130 ug/L 1,4-Dioxane-d8 (S) 88 70-130 %

LABORATORY CONTROL SAMPLE: 3539247

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .17J 83 50-150 1,4-Dioxane-d8 (S) % 79 70-130

MATRIX SPIKE SAMPLE: 3539248 35562061001 MS MS % Rec Spike Parameter Units Result Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 0.33 1.8 70-130 M1 2.1 69 ug/L

SAMPLE DUPLICATE: 3539249

Date: 07/27/2020 10:35 AM

1,4-Dioxane-d8 (S)

35563844001 Dup Max Parameter Units Result Result RPD RPD Qualifiers 1,4-Dioxane (p-Dioxane) < 0.12 ND 20 ug/L 1,4-Dioxane-d8 (S) % 83 81

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**

70-130 S5

69



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525700

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 07/27/2020 10:35 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525700

Date: 07/27/2020 10:35 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525700001	1337 Goose LK Rd	EPA 522	650880	EPA 522	651289

10525700

CHAIN-OF-CUSTODY / Analytical Request Document

ŏ Regulatory Agency State / Location Page: Residual Chlorine (Y/N) The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Received on 3.7 TEMP In C 120 1632 THE 001/02/12/1 Requested Analysis Filte DATE amika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION enexoib-A,1 SSS N/A teeT sesylanA Methanol Preservatives Na2S2O3 Pace Quote:
Pace Project Manager.
Pace Profile #: 39664, NaOH Invoice Information: HCI PRINT Name of SAMPLER DEAL LOSS ON Company Name: ниоз H2SO4 Attention: Address: 5060 Unpreserved TIME SIGNATURE of SAMPLER: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 7/20/20 Project Name: Water Gremlin Well Sampling - 2505-0017 CATE TIME 是新 20:41 02/02/ COLLECTED 000 RELINQUISHED BY ! AFFILIATION TIME START Required Project Information: DATE Report To: Kelly Jaworski 6 SAMPLE TYPE (G=GRAB C=COMP) Purchase Order #: MATRIX CODE (see valid codes to left) Copy To: CODE WY WY WP OL OL ARR MATRIX Drinking Water Waste Water Waste Waste Product Soul/Soild Oil Wripe Aar Other Tissue One Character per box (A-Z, 0-9 /, -) Sample Ids must be unique ADDITIONAL COMMENTS 五级石 Fax rquested Due Date: 5 dow 5 do 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: rais to be performed at Pace FL ple Plain, MN 55359 NONE 33 0 # MBTI

Pace Analytical \*

Page 9 of 13

(N/A)

Salqmbles

Sealed Cooler (VAVA)

Custody

9ATE Signed:

(N/A)



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority: Pace Florida Quality Office

# Sample Condition Upon Receipt Form (SCUR)

Project # Project Manager: Client:	Date and Initials of person:  Examining contents: The Label:  Deliver:
Thermometer Used: 1349 Date: 12	Time: UT Initials: In-
Cooler #1 Temp. °C	(Actual) Samples on ice, cooling process has begun
	Comments:
Chain of Custody Present	
Chain of Custody Filled Out	
Relinquished Signature & Sampler Name COC QYes \( \text{No} \text{ No} \( \text{NN} \) No \( \text{NN} \)	
1	
2,00 2,10 210	
Containers Used   Containers Intact  Containers Intact	
ample Labels match COC (sample IDs & date/time of	
ollection)    Yes   No   N/A   containers needing acid/base preservation have been hecked.   Containers needing preservation are found to be in ompliance with EPA recommendation:    Exceptions: VOA, Coliform, TOC, O&G, Carbamates	Preservation Information: Preservative:
eadspace in VOA Vials? ( >6mm): □Yes □ No \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
rip Blank Present:	
lient Notification/ Resolution: Person Contacted:  omments/ Resolution (use back for additional comments):	Date/Fime:
Project Manager Review:	Date:Page 10 of



### **Document Name:**

# Service Center Transfer Checklist Document Number:

ENV-FRM-MIN4-0135 Rev.00

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

# **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗀	AZ 🗌		
Client:	Wenck				
<b>Destination Lab:</b>	MPLS 🗀	VM 🗆 [	Duluth 🗆		
National	☐ Othe	Page 1	FL		
Received w/ Cus	tody Seal ?	Yes 🖾	No □		
Custody Seal Inta	ect?	Yes	No □		
Temperature	°C		Corr. Factor	Corr. Temp	
IR Gun:	T5		Samples or	n ice, in coo	l down
Rus	sh 🗵 Shor	t Hold 🗆	N/A □		
Containers	Intact ?	Yes	No 🗆		
Repacked and	Re-Iced?	Yes	No 🗆		
Notes:					-,

anni Osp

7/22/2020

X	Samples Pre-Logged	into eCOC.						ate Of O	-					1	Pace	Analytical www.pacelabs.com
	rkorder: 10525700	Workorder N	lame: B002606	6-19-017 Wate	er Gremlir	1		rt. Need vner Red			es : 7/	X <b>No</b> 21/2020		ults Re	equested By	7/28/2020
Rep	ort To		Subcontra	ct To					30 A	1		Request	d Analy	rsis		
Pac 170 Suit Min	ika Asp e Analytical Minnesota 0 Elm Street e 200 neapolis, MN 55414 ne (612)607-1700		8 Eas Ormo	Analytical Ormo t Tower Circle nd Beach, FL e (386)672-566	32174				( II cond) cca nd MO	DV 322 (Pace						
_						Pr	eserved C	ontainers	11.1			1 1				
Item	Sample (D	Sample Type	Collect Date/Time	Lab ID	Matrix	Other			200	1.4-DIOX4						LAB USE ONLY
1	1337 Goose LK Rd	PS	7/20/2020 14:05	10525700001	Drinking	1				X	10					
2																
3																
4																1
5																
-	r. la. ia		la	L				1-			- 11			Commi	ents	
2	sfers Released By	31	Date/Time	Received E	Pad		0)	-	Dί	100						
Coc	ler Temperature on R	eceipt 3-	C 1 Cus	tody Seal	or N		Re	ceived	on lo	e / Y	or N			Samp	les Intact	or N

WO#: 35564853

Wednesday, July 22, 2020 12:33:47 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev 13

Document Revised; May 30, 2018 Issuing Authority; Pace Florida Quality Office

WO#: 35564853

Project #

Project Manager:

Due Date: 07/28/20

CLIENT: PACMIN

Date and Initials of person:

(SCUR)

Examining conter	nts: TIMA
Label:	11,000
Deliver:	
pH;	0

			Deliver:
	1.1.	`	P-10-
Thermometer Used: 1349	Date: 7214	Time:	Initials: Lr
State of Origin:	For WV proje	ects, all containers veri	fied to ≤6 °C
Cooler #1 Temp. C 36 (Visual)	(Correction Factor) 37	(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begi
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begin
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begi
	rity Overnight		☐ Other  ☐ International Priority  ☐ Unknown
Tracking # 1320 152	3 2501		
Custody Seal on Cooler/Box Present: Yes  Packing Material: Bubble Wrap Bubble  Samples shorted to lab (If Yes, complete)			lce: Wet Blue Dry None ed Time: Qty:
		nments:	od fillo
Chain of Custody Present	VQYes □ No □N/A	illients.	
Chain of Custody Filled Out	`DYes □ No □N/A	-	0
Relinquished Signature & Sampler Name COC	Yes ONO ON/A	MOOMY	al
Samples Arrived within Hold Time	`QYes □ No □N/A		
Rush TAT requested on COC	□Yes ☐ No □N/A		
Sufficient Volume	Yes □ No □N/A		
Correct Containers Used	QYès □ No □N/A		
Containers Intact Sample Labels match COC (sample IDs & date/time of	QYes □ No □N/A		
collection)	No □N/A		
collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:	No DN/A	Preservative Lot #/Trace # Date:	
collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in	No □N/A  No □N/A  Carbamates	Preservative Lot #/Trace #	t
collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G,	No □N/A  No □N/A  No □N/A  Carbamates	Preservative Lot #/Trace # Date:	t





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525703001	122006	Drinking Water	07/20/20 10:50	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525703001	122006	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

Date: 07/27/2020 01:21 PM

Sample: 122006	Lab ID: 10	525703001	Collected: 07/20/2	20 10:50	Received: 07	/21/20 11:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/23/20 10:53	07/24/20 16:05	5 123-91-1	
1,4-Dioxane-d8 (S)	80	%	70-130		07/23/20 10:53	07/04/00 40 00	•	



### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

QC Batch: 650880

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525703001

METHOD BLANK: 3539245 Matrix: Water

Associated Lab Samples: 10525703001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/24/20 11:14 ug/L 1,4-Dioxane-d8 (S) % 76 70-130 07/24/20 11:14

LABORATORY CONTROL SAMPLE: 3539246

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

 1,4-Dioxane (p-Dioxane)
 ug/L
 2
 1.7
 83
 70-130

 1,4-Dioxane-d8 (S)
 %
 88
 70-130

LABORATORY CONTROL SAMPLE: 3539247

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .17J 83 50-150 1,4-Dioxane-d8 (S) % 79 70-130

MATRIX SPIKE SAMPLE: 3539248

35362061001 Spike MS MS % Rec

Parameter Units Result Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 0.33 1.8 70-130 M1 2.1 69 ug/L 70-130 S5 1,4-Dioxane-d8 (S) % 69

SAMPLE DUPLICATE: 3539249

Date: 07/27/2020 01:21 PM

35563844001 Dup Max Parameter Units Result Result RPD RPD Qualifiers 1,4-Dioxane (p-Dioxane) < 0.12 ND 20 ug/L 1,4-Dioxane-d8 (S) % 83 81

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525703

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 07/27/2020 01:21 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525703

Date: 07/27/2020 01:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525703001	122006	EPA 522	650880	EPA 522	651289

10525703

# CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ SAMPLE CONDITIONS Regulatory Agency State / Location Page: Residual Chlorine (Y/V) Received on 57 TEMP In C Requested Analysis Filtered (Y/N) 2891 11211201120 7/20 DATE annika.asp@pacelabs.com, ACCEPTED BY LAFFILLATION enexoib-4,1 SS3 T349 N/A teeT sesylenA Methanol Preservatives Na2S2O3 39664, 4 ИаОН Pace Quote: Pace Project Manager; TMA Invoice Information: HCI AN LOSON Company Name: Pace Profile # ниоз Section C H2SO4 Attention: Address. 2060 Unpreserved 1632 TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 7/6/20 PRINT Name of SAMPLER: SIGNATURE of SAMPLER: Project Name: Water Gremlin Well Sampling - 2606-0017 DATE TIME 層 DEFE 05:30 COLLECTED Per RELINQUISHED BY I AFFILIATION TIME START 5/20/20 Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE Purchase Order #. MATRIX CODE (see valid codes to left) Section B Copy To: T S O S W P D S I MATRIX
Drinking Water
Water
Waste Water
Product
Soul/Soild
Oil
Wipe
An
An One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique ADDITIONAL COMMENTS 1800 Planeer Creek Center quested Due Date: SAS STORY SAMPLE ID Wenck Associates, Inc. Koos nail: kjaworski@wenck.com 122006 equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359 34 ITEM #

Page 9 of 13

(N/A) Intaci Semples

COOLEC peleas Custody

(N/X)

DATE SECTION



Project Manager Review:

### Document Name: Sample Condition Upon Receipt Form Document No... F-FL-C-007 rev. 13

Document Revised; May 30, 2018 Issuing Authority: Pace Florida Quality Office

# Sample Condition Upon Receipt Form (SCUR)

Project #		11(1)(1)	Date and Initials of person:  Examining contents:
Project Manager:		.,00	Label:
Client:			Deliver:
	1 .		pH:
Thermometer Used: 1349	Date:	Time:	Initials:
State of Origin:	_ For WV	projects, all containers veri	ified to ≤6 °C
Cooler #1 Temp.°C(Visual)(	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
	шара Пан . Па		Other
1		ommercial Pace	Other
Other	riority Overnight	1 Overnight 🗀 Groun	d ☐ International Priority
3illing: ☐ Recipient 📉 Send	der ☐ Third Party	☐ Credit Card	□ Unknown
1202 12	22 2501	- Oledit Card	Official
racking #	25 2501		
Suctody Coal on Cooley/Day Droganty VV	es No Seals i	ntact: Yes No	Ice:( Wet) Blue Dry None
custody Sear on Cooler Box Present:	oc Line ocais ii	103 - 140	ice: vvel y blue Dry None
Custody Seal on Cooler/Box Present:		ther	ice: Wet y Blue Dry None
Packing Material: Bubble Wrap Bubb	ble Bags	ther	
Packing Material: Bubble Wrap Bubb	ble Bags □None □0 Shorted Date:	therShor	ted Time: Qty:
Packing Material: Bubble Wrap Bubble Bamples shorted to lab (If Yes, complete)	ble Bags	ther	
Packing Material: Bubble Wrap Bubble Backing Material: Bubble Backing Material: Bubble Backing Material: Bubble Backing Material: Bubble Bubble Wrap Bubble Bubble Backing Material: Bubble Bubb	ble Bags	therShor	
Packing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Bub	Shorted Date:  Yes   No   N/A    Yes   No   N/A	therShor	
Packing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Bubble Bubble Backing Material: Bubble Bubble Wrap Bubble Bubble Wrap Bubble Bubbl	Shorted Date:  Yes No NA Yes No NA	therShor	
Packing Material: Bubble Wrap Bubble Bamples shorted to lab (If Yes, complete) Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC	Shorted Date:  Shorted Date:  Yes   No   N/A    Yes   No   N/A    Yes   No   N/A    Yes   No   N/A	therShor	
Packing Material: Bubble Wrap Bubble Backing Material: Bubble Wrap Bubble Bamples shorted to lab (If Yes, complete) Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time	Shorted Date:  Yes   No   N/A	therShor	
Chain of Custody Present Chain of Custody Filled Out Celinquished Signature & Sampler Name COC Champles Arrived within Hold Time Custody Filled Out Complete	Shorted Date:  Shorted Date:  Yes   No   N/A	therShor	
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used	Shorted Date:  Shorted Date:  Yes   No   DN/A	therShor	
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Comples And Coc (sample IDs & date/time of	Shorted Date:  Shorted Date:  Yes   No   N/A	therShor	ted Time:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Contain	Shorted Date:  Shorted Date:  Yes No No N/A	Sample ID	an Coc "122006", on conta
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Comples March COC (sample IDs & date/time of collection) Containers needing acid/base preservation have be necked.	Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID	on COC "122006", on conto
Packing Material: Bubble Wrap Bubble Bamples shorted to lab (If Yes, complete)  Phain of Custody Present  Phain of Custody Filled Out  Pelinquished Signature & Sampler Name COC  Pamples Arrived within Hold Time   Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID	on COC "122006", on conto	
hain of Custody Present hain of Custody Filled Out elinquished Signature & Sampler Name COC amples Arrived within Hold Time ush TAT requested on COC ufficient Volume orrect Containers Used ontainers Intact ample Labels match COC (sample IDs & date/time of election) I containers needing acid/base preservation have be ecked. Containers needing preservation are found to be in impliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&	Shorted Date:  Shorted Date:  Yes   No   N/A    Yes   No   N/A	Sample ID  Preservative Lot #/Trace	on Coc (12706), on contains (1345 Goose L.K.
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Celinquished Signature & Sampler Name COC Camples Arrived within Hold Time Cush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Containers Intact Containers needing acid/base preservation have be elecked. Containers needing preservation are found to be incompliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm)	Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID  Preservative Lot #/Trace	on Coc (12706), on contains (1345 Goose L.K.
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Containers Used Containers Intact Containers Inta	Shorted Date:  Shorted Date:  Yes   No   N/A    Yes   No   N/A	Sample ID  Preservative Lot #/Trace	on Coc (12706), on contains (1345 Goose L.K.
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Conficient Volume Correct Containers Used Containers Intact Containers Intact Containers Intact Containers needing acid/base preservation have be necked. Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm):  rip Blank Present:  Ilient Notification/ Resolution:	Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID  Preservative Lot #/Trace	on Coc (12706), on contains (1345 Goose L.K.
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Conficient Volume Correct Containers Used Containers Intact Containers Intact Containers Intact Containers needing acid/base preservation have be necked. Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm):  rip Blank Present:	Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID  Preservative Lot #/Trace	on Coc (12706), on contains (1345 Goose L.K.
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Celinquished Signature & Sampler Name COC Camples Arrived within Hold Time Cust TAT requested on COC Conficient Volume Correct Containers Used Containers Intact Containers Intact Containers needing acid/base preservation have be elecked. Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm): Cip Blank Present:  Continer Notification/ Resolution:	Shorted Date:  Shorted Date:  Yes   No   N/A	Sample ID Preservative Lot #/Trace Date: Initials:	on Coc (12706), on contains (1345 Goose L.K.

Date:

Page 10 of 13



### **Document Name:**

Service Center Transfer Checklist

Document Number:

ENV-FRM-MIN4-0135 Rev.00

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

## **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗀	AZ 🗌		
Client:	Wenck				
<b>Destination Lab:</b>	MPLS 🗀	VM 🗆 [	Duluth 🗆		
National	☐ Othe	Page 1	FL		
Received w/ Cus	tody Seal ?	Yes 🖾	No □		
Custody Seal Inta	ect?	Yes	No □		
Temperature	°C		Corr. Factor	Corr. Temp	
IR Gun:	T5		Samples or	n ice, in coo	l down
Rus	sh 🗵 Shor	t Hold 🗆	N/A □		
Containers	Intact ?	Yes	No 🗆		
Repacked and	Re-Iced?	Yes	No 🗆		
Notes:					4,

annu Osp

7/22/2020

Internal Transfe		of Custo	dy —							Pace Analytical
X Samples Pre-Logged	d into eCOC.					State Of Or Cert. Needs	_	es X No	1-	www.pacelabs.com
Workorder: 10525703	Workorder N	lame: B002606		er Gremlir	1	Owner Rec			Results Reque	ested By: 7/28/2020
Report To		Subcontra	ct To					Requeste	d Analysis	
Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		8 Eas Ormo	Analytical Ormoter Tower Circle and Beach, FL 3 (286)672-566	32174		erved Containers	e in DW by S22 (Pace FL)			
Item Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other		1,4-Dioxane			LAB USE ONLY
1 122006	PS	7/20/2020 10:50	10525703001	Drinking	1		X			
2										
3										
5							+			
5		1		1					Comments	
Transfers Released By 1 2		Date/Time	Received B	Υμι	l	Date/Ti	ime 2010	V	Oshimona	
Cooler Temperature on F		1300	stody Seal			Received o			Samples I	

\*In order to maintain client confidentiality, location/hame of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Wednesday, July 22, 2020 11:51:13 AM

FMT ALL C 002rev.00 24March2000

Page 1 of 1



Document Name: Sample Condition Upon Receipt Form Document No. F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

dition Upon Receipt Form (SCUR)

**Project** Project Manage CLIENT: PACMIN

Project Manager Review:

Due Date: 07/28/20

Date and Initials of person:

Client	Deliver:
	pH;
Thermometer Used: 1349 Date: 121W Time:	Initials: Tree
State of Origin: For WV projects, all container	s verified to ≤6 °C
Cooler #1 Temp. "C 3 (Visual) (Correction Factor) 5 (Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp.°C(Visual)(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp. °C(Visual)(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Visual)(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS USPS Client Commercial Pa	
Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ G	round   International Priority
Other Codd Codd	C. Halmana
Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit Card	☐ Unknown
Tracking #1320 7523 2501	
Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes	No Ice: Wet) Blue Dry None
Packing Material: Bubble Wrap Bubble Bags None Other	
dening Material. —Dobble Wap S Dobble Days []Notic	
	Shorted Time: Qty:
Samples shorted to lab (If Yes, complete)  Shorted Date:  Comments:	Shorted Time: Qty:
Samples shorted to lab (If Yes, complete)  Shorted Date:  Comments:	Shorted Time: Qty:
Samples shorted to lab (If Yes, complete)  Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Shorted Date:  One of Custody Present  One of Custody Filled Out	Shorted Time: Qty:
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out	Shorted Time: Qty:
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Shorted Date:  Comments:  Comm	Shorted Time: Qty:
Shorted Date:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Shorted Date:  Comments:  No DN/A  Ves DNo DN/A  Ves DNO DN/A	Shorted Time:
Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Rush TAT requested on COC  Shorted Date:  Comments:  No DN/A  DYes DNO DN/A  President Date:  Comments:  No DN/A  DYes DNO DN/A  President Date:  Comments:   Shorted Time: Qty:	
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Fille	Shorted Time:
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Rush TAT requested on COC  Correct Containers Used  Containers Intact  Shorted Date:  Comments:   Shorted Time:	
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Fille	nal
Shorted Date:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of ollection)  Ill containers peeding acid/base preservation have been	D on coc "122006", on con
Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Cush TAT requested on COC  Cyes No N/A  Currect Containers Used  Correct Containers Used  Containers Intact  Cample Labels match COC (sample IDs & date/time of ollection)  Containers needing acid/base preservation have been hecked.	D on COC (127016", on Compreservation Information: (1345 Gase LK vative:
Comments:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Rush TAT requested on COC  Correct Containers Used  Containers Intact  Containers Intact  Containers Intact  Containers Intact  Containers Intact  Containers needing acid/base preservation have been hecked.  Ill Containers needing preservation are found to be in	D on COC (122006", on compreservation Information: (11245 Gance LK
Chain of Custody Present  Chain of Custody Filled Out  Containers Index	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:
Comments:  Chain of Custody Present  Chain of Custody Filled Out  Cyes	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:
Comments:  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  Ill containers needing acid/base preservation have been hecked.  Ill Containers needing preservation are found to be in ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):    Shorted Date:   Comments:   Comments:   Comments:   No   N/A	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:
Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  It containers needing acid/base preservation have been checked.  It Containers needing preservation are found to be in ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Initials:  It addspace in VOA Vials? ( >6mm):  Yes No IN/A  It ip Blank Present:  Comments:  No IN/A  Preser  Lot #/T  Date: Initials:  Initials:  Initials: I	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:
Chain of Custody Present  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Comments:  No DN/A  Preser  Lot #/T  Date:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Comments:  Commen	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:
Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Client Notification/ Resolution:	D on COC (122006", on Cov)  Preservation Information: (17345 Goose L K vative: race #:

Date:

Page 13 of 13





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525822001	112320	Drinking Water	07/22/20 09:25	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525822001	112320	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

Date: 07/29/2020 03:08 PM

Sample: 112320	Lab ID: 10	525822001	Collected: 07/22/2	20 09:25	Received: 07	/22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	cai Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 16:5	123-91-1	



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin W Project:

Pace Project No.:

10525822

QC Batch: 651671 Analysis Method:

EPA 522

QC Batch Method: EPA 522 Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

10525822001 Associated Lab Samples:

Parameter

METHOD BLANK: 3543368 Matrix: Water

Associated Lab Samples:

10525822001

Reporting

Blank Units Result

ug/L

%

ug/L

Units

%

Limit Analyzed

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ND 98

Spike

Conc.

0.20 07/28/20 12:00 70-130 07/28/20 12:00

LCS

% Rec

LABORATORY CONTROL SAMPLE: 3543369

Parameter Units

LCS Result

18.6

% Rec Limits 93 70-130

99

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

%

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS Conc.

0.2

20

LCS

% Rec

70-130

70-130

1,4-Dioxane (p-Dioxane)

Parameter

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

ug/L

3543371

Result 0.20 % Rec 102

Limits Qualifiers 50-150

1,4-Dioxane-d8 (S)

Parameter

MSD Spike

3543372

MS

96

MSD

% Rec Max

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L

MS 10525818001 Spike Result Conc.

MS Result

MSD Result

% Rec

% Rec 96

Limits

**RPD** RPD 3 20 Qual

Date: 07/29/2020 03:08 PM

%

ND 20.4 Conc. 20.2

19.6

19.0 101

94 101

70-130 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525822

Date: 07/29/2020 03:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525822

Date: 07/29/2020 03:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525822001	112320	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document

ŏ Regulatory Agency 8 SAMPLE CONDITIONS State / Location Page: WO#:10525822 Residual Chlorine (Y/V) 7 Received on The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. TEMP In C 4 9:5 THE WASH 7/2212 2/6/20 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION 522 1,4-dioxane ころう N/A teeT seavisnA Methanol Preservatives Nazszoa 39664, 4 HOBN Pace Project Manager: Section C Invoice Information: ЮН Company Name: Address: Pace Quote: коин Pace Profile #: STATE OF THE PARTY **H**2SO4 Attention: 0905 Unpreserved PRINT Name of SAMPLER: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 12/22 C 7/6/20 Purchase Order #
Project Name: Water Gremlin Well Sampling - 2506-0017
Project # BOO26 OC - (4 - 017 SIGNATURE of SAMPLER: DATE TIME 925 8 DATE COLLECTED RELINQUISHED BY! AFFILIATION TIME 7/22/22 START Mas ないない Required Project Information: DATE Kelly Jaworski ন (G=GRAB C=COMP) SAMPLE TYPE MATRIX CODE (see valid codes to left) Section B Report To: Copy To: MATROX
Drinking Water
Waste Waste Waste
Product
SoulSoid
Cil
Wipe
Air
Chher
Tissue One Character per box.
(A-Z, 0-91, -)
Sample Ids must be unique 5 084 to ADDITIONAL COMMENTS 1800 Pioneer Creek Center Fax SAMPLE ID mpany: Wenck Associates, Inc. 232 kjaworski@wenck.com Kassine 1 equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359 NONE quested Due Date: 1370

Pace Analytical www.paceaescon

Page 9 of 12

(N/A)

Samples

Sealed Cooler (VIV) Custod

(N/X)

# Pace Analytical®

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Page 10 of 12

Labeled by: \_

Pace Analytical Services -Minneapolis

Sample Condition Upon Receipt	Client Name:		- <b>4</b>	Pro	oject #:	WO#:10525822
	Wench Associat	(2) N	ነር\			
Courier:	☐Fed Ex ☐UPS ☐Pace ☐SpeeDe	Us eCo		Cli		PM: AKA Due Date: 07/29/20 CLIENT: WENCK
Tracking Number:		<u>,                                     </u>				<i>j</i>
Custody Seal on Coo	oler/Box Present? Yes	<b>√</b> No	Sea	ls Intact	? ∐Yes	Mo Biological Tissue Frozen? ☐Yes ☐No 図N/A
Packing Material:	☐Bubble Wrap Bubble B	ags	None	∐Oth	er:	Temp Blank? ☐Yes ☐No
Thermometer:	] T1(0461)	)	Type of I	ce: 🕽	<b>₫</b> Wet [	Blue None Dry Melted
Did Samples Originate	e in West Virginia? 🗌 Yes 🔌 No	Wei	e All Co	ntainer 1	Temps Take	en? □Yes □No ☑N/A
Temp should be above fre	ezing to 6°C Cooler Temp Re	ad w/tem	p blank	:_ Z,.	) <u>, 2.5</u>	OC Average Corrected Temp
Correction Factor:	Cooler Temp Correct	ed w/tem	p blank	: 2.1	, 2.5	(no temp blank only): ☐ See Exceptions  OC ☐ 1 Container
	( N/A, water sample/Other:				Date/In	itials of Person Examining Contents: <u>MHZ 7-27-2</u> 0
	n a quarantine zone within the Uni , OK, OR, SC, TN, TX or VA (check n			_	A, Did sa	mples originate from a foreign source (internationally, including
				No ecklist (F		i and Puerto Rico)?
	1	·····				COMMENTS:
Chain of Custody Presen	it and Filled Out?	Yes	□No		1.	
Chain of Custody Reling	uished?	Yes	□No		2.	
Sampler Name and/or S	<del></del>	Yes	□No	□N/A	3.	
Samples Arrived within I	Hold Time?	Yes	□No		4.	
Short Hold Time Analysi	is (<72 hr)?	□Yes	Mo		5.	cal Coliform
Rush Turn Around Time	Requested?	∑ves	∏No		6.5 De	ry DAT ,
Sufficient Volume?		Yes	□No		7	
Correct Containers Used	<b>!?</b> .	Yes	□No		8.	,
-Pace Containers Use	d?	Yes	∐No			
Containers Intact?		¥Yes	∏No		9.	
	ceived for Dissolved Tests?	Yes	□No	<b>⊠</b> N/A	10. Is s	ediment visible in the dissolved container? Yes No
is sufficient information to the COC?	available to reconcile the samples	₩es	□No		11. If no,	write ID/ Date/Time on Container Below: See Exception
Matrix: ₩Water ☐ Soil						
All containers needing ac checked?	cid/base preservation have been	∐Yes	∏No	<b>"<u>IZ</u>ÍN/</b> A	12. Samp	le#
compliance with EPA rec	reservation are found to be in commendation? OH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∏No	ØN/A		NaOH ☐ HNO₃ ☐ H₂SO₄ ☐ Zinc Acetate
Exceptions: VOA, Coliford DRO/8015 (water) and D	m, TOC/DOC Oil and Grease, iloxin/PFAS	∐Yes	∏No	<b>⊅</b> N/A	Positive for Chlorine?	
					1,00,0,110	0 5 Kilp 0-14 Strip
Headspace in VOA Vials	oil VOA or WIDRO containers? (greater than 6mm)?	☐Yes ☐Yes	□No □No	ØN/A N/A	13.	See Exception
Trip Blank Present? Trip Blank Custody Seals	Present?	□Yes □Yes	□No □No	N/A N/A	14. Pace	e Trip Blank Lot # (if purchased):
CLIENT NOTII Person Contacted: Comments/Resolution:	FICATION/RESOLUTION				Date/Ti	Field Data Required? Yes No me:
,	* _				·	·
Project Mana		(A A )		60		Date: 7/00/0000
Note: Whenever there is a		a complianc	e sample	s, √ copy o	of this form	will be sent to the North Carolina DEHNR Certification Office (i.e out of

FMT-ALL-C-002rev.00 24March2009

# MO#:35565183

Internal Transfer Ch X Samples Pre-Logged into eC

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

7/22/2020

Pace Analytical \*

LAB USE ONLY 7/29/2020 Results Requested By: Requested Analysis × 1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers G1U Unpreserved Workorder Name: B002606-19-017 Water Gremlin W Pace Analytical Ormond Beach Drinking Matrix 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668 10525822001 Lab ID Subcontract To 7/22/2020 09:25 Date/Time Collect Sample Type PS Pace Analytical Minnesota Workorder: 10525822 Minneapolis, MN 55414 Phone (612)607-1700 1700 Elm Street Sample ID Annika Asp 112320 Report To Suite 200

Samples Intact Y or \*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document Received on Ice (V) or Z Custody Seal (Y) or Cooler Temperature on Receipt 5.3 °C

This chain of custody is considered complete as is since this informetion is available in the owner laboratory.

Comments

01110CKC11

TIMA Pace

834

Received By

Date/Time

Released By

Transfers

term

Date/Time



Project Manager Review:

Document Name: Sample Condition Upon Receipt Form
Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

# Sample Condition Upon Receipt Form (SCUR)

Project # PM: SMM Client:	Due Date: PACMIN	07/29/20	Date and Initials of person:  Examining contents: The label:  Deliver: pH:
Thermometer Used: 1349	Date: 7 23	w Time:_	1(14 Initials: I-r
State of Origin:	☐ For WV	projects, all containers v	perified to <6°C
□ Other	Correction Factor)  (Correction Factor)  (Correction Factor)  (Correction Factor)  (Correction Factor)  (Correction Factor)  (Correction Factor)	(Actual) (Actual) (Actual) (Actual) (Actual) (Actual) (Actual)	Samples on ice, cooling process has begue Other
Billing: Recipient Sender	☐ Third Party	☐ Credit Card	☐ Unknown
Tracking # 1320 ~	1523 285	4	
Samples shorted to lab (If Yes, complete)  Chain of Custody Present	Shorted Date:(	Sho	orted Time: Qty:
Chain of Custody Filled Out	'Eyès □ No □N/A		
Relinquished Signature & Sampler Name COC	NYes   No   N/A		
Samples Arrived within Hold Time	TYPES IN THE	12/10	7
Rush TAT requested on COC	TYes (2) W HN/A	0	79120 Trua
Sufficient Volume	QYes □ No □N/A	11.0100	21120 11001
Correct Containers Used	Yes □ No □N/A		
Containers Intact	SYes 🗆 No 🗆 N/A		
Sample Labels match COC (sample IDs & date/time of collection)	NYes   No   N/A	. 0	
All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G,	TYPE IN NO JOHNA	Preservatir Lot #/Trace Date: Initials:	
Headspace in VOA Vials? ( >6mm):	□Yes □ No N/A	illinais,	
Trip Blank Present:	□Yes □ No □NA		
Client Notification/ Resolution: Person Contacted: Comments/ Resolution (use back for additional c		Date/Time:	
	,		

Date:





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager









### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526997001	112320	Drinking Water	07/31/20 09:23	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526997001	112320	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

Date: 08/11/2020 10:30 AM

Sample: 112320	Lab ID: 10	526997001	Collected: 07/31/2	20 09:23	Received: 07	7/31/20 15:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	cal Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.19	1	08/09/20 05:35	08/10/20 21:58	3 123-91-1	
1,4-Dioxane-d8 (S)	101	%	70-130		08/09/20 05:35			



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

QC Batch: 655137

QC Batch Method: EPA 522 Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

10526997001 Associated Lab Samples:

METHOD BLANK: 3561567

1,4-Dioxane (p-Dioxane)

1,4-Dioxane-d8 (S)

Matrix: Water

Associated Lab Samples: 10526997001

Parameter

Units

ug/L

%

Blank Reporting

Result Limit

ND

107

Analyzed

0.20 08/10/20 19:51 70-130 08/10/20 19:51

LABORATORY CONTROL SAMPLE: 3561568

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

70-130

70-130

Qualifiers

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

Units

20

20.4

102 111

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

3561569

Spike Conc. LCS

LCS % Rec % Rec Limits

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

Units

0.2

23

Result 0.21 105

50-150 70-130 Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3561570 MS

23

3561571 MS

MSD

MS MSD

102

110

% Rec

Max **RPD** RPD

Qual

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

Units ug/L %

10526991001 Spike Result Conc. ND

MSD Spike Conc.

Result

23.4

Result % Rec 22.8

113

% Rec 99

106

Limits 70-130

3 20 70-130

Date: 08/11/2020 10:30 AM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526997

Date: 08/11/2020 10:30 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526997

Date: 08/11/2020 10:30 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526997001	112320	EPA 522	655137	EPA 522	655495

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B	Section C	
Companies	tient mormanon:	Required Project Information:	Invoice information:	Page: 1 Of 1
Addition.	Wenck Associates, Inc.	report to: Waterman Shane	Attention:	
Address.	2080 Wooddale Drive	COPY TO: KELLY J GLUDY K	Company Name:	
Email:		Purchase Order #:	Address:	Regulatory Agency
Phone:	Esv	Dariot Name: From Fr. 1822 - 1		
Reguester		Project # CACA # 12 A A A	Face Project wanager: annika.asp@pacelabs.com,	State / Location
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	10-11-0000 OXC	c	
		-		Sept. High Co. 1 (18)
	MATRIX	SO Their to left	Preservatives	
	SAMPLE ID Seutschid	See valid codes	HO.	(N/A) e
# M3TI	One Character per box. Wise Ar (A.Z. 0-9 I., -) Other Sample Ids must be unique Tissue	S & P & P & P & P & P & P & P & P & P &	OP CONTAINER Inposerved Incos	esidual Chlorin
+	112320	$+ \sim$		Ę
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		PELINOUSHED BY ACTUATION DATE	TIME ACCEPTED BY / METILATION	DATE TIME SAMPLECONDITIONS
	1370 Gosse Lices	1/14:14.00 De 72/2	0 16:00 San Lan (wenck	SISI 12/51/
		Partin work 1/34	is 1500 PH-/Pacc +	13/20 1500 128 Y N Y
Pag		SAMPLER WANE AND SIGNATURE	ATURE	+
e 9 of		PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	Dan Latson Date Signed: 7	ANN)  EMP in C  EMP in C  EMP in C
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# Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

Page 10 of 12

Sample Condition Upon Receipt	Client Name:			P	roject #:	W	O# : 1	LØ5	26997	7
Courier:	= =	]UPS [ ]SpeeDee [	USPS Commer		Client Exceptions		: AKA IENT: WE		Due Date: 0	8/07/20
Tracking Number:							- 177 - · · · · · · · · · · · · · · · · · ·			<u>, , , , , , , , , , , , , , , , , , , </u>
Custody Seal on Co	oler/Box Present?	res 🗷 No	S	eals Intac	:t? ∐Y€	es 🍱	No <b>Biol</b> o	gical Tis	sue Frozen?	Yes □No □N/A
Packing Material:	Bubble Wrap	Bubble Bags	□None	□ot	her:				emp Blank?	_
Thermometer:	☐ T1(0461) ☐ T2(1336) ☐ ☐ T4(0254) ☐ T5(0489)	]T3(0459)	Type o	f Ice:	_}₩et	Blue	□None	□Dŋ	_	
Did Samples Origina	te in West Virginia? □Ye	s Avo	Were All (	ontainer	Temps Ta	ken? □Y	es □No E	<b>]√/</b> /A		
Temp should be above fr	eezing to 6°C <b>Cooler</b> 1	Temp Read w	temp blar	k:	1.4,	5.0	°C	Averag	ge Corrected Te	mp
Correction Factor:	-0.2 Cooler Temp	Corrected w/	temp blan	k :	1.2,	4.8	⁰c			): See Exceptions  1 Container
USDA Regulated Soil	: ( N/A water sample)	Other:		)					ontents: RH	
ID, LA. MS, NC, NM, N	in a quarantine zone within Y, OK, OR, SC, TN, TX or VA f <b>Yes to either question, f</b>	(check maps)?	∐Yes	∏No	Haw	aii and Pue	erto Rico)?		ource (internation Yes  No	ally, including
					1	Jo, and i	ilcidae With	COMM		····
Chain of Custody Prese	nt and Filled Out?		) Yes □No		1.		-,,	COMM	LIVIS.	
Chain of Custody Reling					2.		<del></del>			
Sampler Name and/or S	Signature on COC?		res □No	□N/A						
Samples Arrived within	Hold Time?		1		4.					
Short Hold Time Analys	sis (<72 hr)?	Y	es Divo		5.   F	ecal Colifor	rm	otal Colifo	rm/E coliBOD/o	BOD Hex Chrome
Rush Turn Around Time	Requested?		es 🛮 No		6.					74'
Sufficient Volume?		<u> É</u>	es □No		7.					
Correct Containers Used	1?	<b>4</b>	es □No		8.					
-Pace Containers Use	d?	<b>_</b>	es 🗌 No		<u> </u>		•			
Containers Intact?			es No		9.					
	eceived for Dissolved Tests		es 🔲 No	N/A	10. is	sediment	visible in the	dissolved	container?	es 🗌 No
to the COC?	available to reconcile the s	samples	es □No		11. If no	, write ID/	Date/Time on	Container	Below:	See Exception
Matrix: Water Soil	OilOthercid/base preservation have		- <u>-</u>				******			· · · · · · · · · · · · · · · · · · ·
checked?	cid/base preservation have	e been ∏y,	es □No	<b>₽</b> N7A	12. Samı	ole#				
compliance with EPA rec	reservation are found to be commendation? OH >9 Sulfide, NaOH>12 Cy	L	es 🔲 No	.⊠N/A		NaOH	□HÑ	O <sub>3</sub>	∐H₂SO₄	Zinc Acetate
Exceptions: VOA, Coliforn DRO/8015 (water) and D	m, TOC/DOC Oil and Greas	e, 🗀 Ye	es 🔲 No	ØN/A	Positive Chlorine	? [	<del></del>	pH Paper		See Exception
, (,					Res. Chlo	riņe	0-6 Roll	(	0-6 Strip	0-14 Strip
Extra labels present on se Headspace in VOA Vials (	oil VOA or WIDRO containe (greater than 6mm)?	ers? ∐ye	===	N/A N/A	13.					See Exception
Trip Blank Present? Trip Blank Custody Seals	Present?		s 🔲 No	ØN/A ØN/A	14.	a Trin Pla	nk l at # /if n	urahasad\		
	ICATION/RESOLUTION	<u></u>	- LINU	<u>,⊬,</u> 14/A	. rac	C HIP DIG	nk Lot # (if pu			
Person Contacted:	ION I TONY NESULUTION				Date/T	ime	Field	l Data Re	equired?Ye	s
Comments/Resolution:					. Date/1	e.				
	$\cap$	\	$\cap$				1,00			
Project Mana		Mu	フ( 人	40		Date:	Я	/3/20	20	
Note: Whenever there is a hold, incorrect preservative	discrepancy affecting North , out of temp, incorrect cont	Carolina compli ainers).	ance sample	es, alcopy o	of this form	will be ser	nt to the North	Carolina	DEHNR Certificati	on Office ( i.e out of

Samples Pre-Logged into eCOC.

Workorder: 10526997

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Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Of Origin: MN Cert. Needed:

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Face Analytical ®

8/7/2020

Results Requested By:

20

Owner Received

1,4-Dioxane in DW by 522 (Pace FL)

Minneapolis, MN 55414 Phone (612)607-1700

Phone (386)672-5668

Preserved Containers

AG1R

LAB USE ONLY

×

Drinking Matrix

10526997001 LabiD

7/31/2020 09:23

PS

Collect Date/Time

Sample Type

Item Sample ID

112320

ō

Samples Intact Y

Received on Ice Y or N

十3九0 177

2021

41412

pa

Received By

**Date** Time

Released By

Transfers

Date/Time

Comments

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

Z

0

Custody Seal Y

ပ္ပ

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009

Monday, August 03, 2020 2:37:52 PM

Page 11 of 12

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev\_13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

rm (SCUR)

Project Manager Review:

Project Manag CLIEN	M Due Date: 0		
Project Manag CLIENT	r Pacmin	Examining contents:_ Label:	A
Clier		Deliver:	
Thermometer Used:	Q Date: 8/4/2	O Time: 1122 Initials: (E	J
State of Origin:	☐ For WV p	ojects, all containers verified to ≤6 °C	
Cooler #1 Temp. C (Visual)	(Correction Factor)	(Actual) Samples on ice, coolin	g process has begu
Cooler #2 Temp. c (Visual)	(Correction Factor)	7 (Actual) Samples on ice, coolin	g process has begu
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling	g process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling	g process has begu
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling	g process has begu
Cooler #6 Temp. C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling	g process has begu
Courier: Fed Ex UPS	USPS Client Cor	amercial Race Other	
Shipping Method:  First Overnight			
Other	Thomy Overlight 12 Standard	Tremational Phoney	
Billing:   Recipient Se	ender   Third Party	☐ Credit Card ☐ Unknown	
1 .	326 7523		
Custody Seal on Cooler/Box Present:	/		
,		act: Yes No Ice: Wet Blue Dry	None
Packing Material: UBubble Wrap		er	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted Time: Q	ity:
		omments:	
Chain of Custody Present	DYes □ No □N/A		
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name COC	-		
Samples Arrived within Hold Time	✓Yes □ No □N/A	6.6.417	
Rush TAT requested on COC	✓Yes □ No □N/A	DCE 811	
Sufficient Volume	DYes □ No □N/A		
Correct Containers Used	Ves □ No □N/A		
Containers Intact Sample Labels match COC (sample IDs & date/time			
collection)	r Yes □ No □N/A		
All containers needing acid/base preservation have checked.	been   ☐Yes □ No □N/A	Preservation Information:	
All Containers needing preservation are found to be	in //	Preservative: Lot #/Trace #:	
compliance with EDA cooperage detices	Yes No N/A	Date:Time:	
compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, C	D&G, Carbamates	Initials:	-
Exceptions: VOA, Coliform, TOC, C		Initials:	3
Exceptions: VOA, Coliform, TOC, C		Initials;	
	□Yes □ No □N/A	Date/Time:	2
Exceptions: VOA, Coliform, TOC, College of the Present:  Client Notification/ Resolution:  Person Contacted:	□Yes □ No □N/A □Yes □ No □N/A	T	
Exceptions: VOA, Coliform, TOC, CHeadspace in VOA Vials? ( >6mm):  Trip Blank Present:  Client Notification/ Resolution:	□Yes □ No □N/A □Yes □ No □N/A	T	

Date:





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525688001	736637	Drinking Water	07/20/20 09:48	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525688001	736637	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

Date: 07/27/2020 10:34 AM

Sample: 736637	Lab ID: 10	525688001	Collected: 07/20/2	20 09:48	Received: 07	/21/20 11:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/23/20 10:53	07/24/20 14:43	3 123-91-1	
1,4-Dioxane-d8 (S)	74	%	70-130		07/23/20 10:53	07/04/00 44 40		



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin Project:

Pace Project No.:

QC Batch Method:

1,4-Dioxane-d8 (S)

10525688

QC Batch:

650880

EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Blank

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525688001

METHOD BLANK: 3539245

Matrix: Water

76

Associated Lab Samples: 10525688001

Parameter Units 1,4-Dioxane (p-Dioxane)

Result ND ug/L %

Reporting Limit

Analyzed

Qualifiers

70-130

70-130

Qualifiers

0.20 07/24/20 11:14 70-130 07/24/20 11:14

LABORATORY CONTROL SAMPLE: 3539246

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits 1,4-Dioxane (p-Dioxane) 2 1.7 83 ug/L 1,4-Dioxane-d8 (S) 88 %

LABORATORY CONTROL SAMPLE: 3539247

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .17J 83 50-150 1,4-Dioxane-d8 (S) % 79 70-130

MATRIX SPIKE SAMPLE: 3539248

1.8	69	70-130	
1	1 1.8	1.8 69	

SAMPLE DUPLICATE: 3539249

Date: 07/27/2020 10:34 AM

		35563844001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.12	ND		20	
1.4-Dioxane-d8 (S)	%	83	81			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525688

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### ANALYTE QUALIFIERS

Date: 07/27/2020 10:34 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525688

Date: 07/27/2020 10:34 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525688001	736637	EPA 522	650880	EPA 522	651289

10525688

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical

ŏ Regulatory Agency SAMPLE CONDITIONS Samples State / Location Sealed Cooler (X/N) Custody Page: Residual Chlorine (Y/V) Received on The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. TEMP In C 7/20 1632 7/21/201100 Requested Analysis Filter DATE DATE Signed 7 (22/28 Sac annika.asp@pacelabs.com, T349 ACCEPTED BY / AFFILIATION enexoib-4,1 SSS N/A teeT sesylenA Other Methanol Preservatives Na2S2O3 39664, HOPN Pace Project Manager: Pace Profile #: 3966 Invoice Information: 0 150A HCI Company Name: Address: Pace Quote: ниоз H2SO4 1632 20%0 Unpreserved TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 2/2/2 PRINT Name of SAMPLER: Water Gremlin Well Sampling - 2605-0017 SIGNATURE OF SAMPLED DATE - INE DATE Ship COLLECTED Project Name: Water Gremlin Well Sampli Project #: Ron 2 (.0) 6 - 19 - 01 7 RELINQUISHED BY / AFFILIATION TIME 6/2/20/20 START Required Project Information: DATE Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE Purchase Order #. 30 (see valid codes to left) MATRIX CODE Report To: Section B Copy To: CODE WT VW SP OL OL AR AR TS 736637 MATRIX
Dinking Water
Water
Waste Water
Product
Product
Oil
Wipe
Aur
Other
Tissue One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique ADDITIONAL COMMENTS quested Due Date: Std (-day 1800 Pioneer Creek Center ما SAMPLE ID Wenck Associates, Inc. SIDS IT kjaworski@wenck.com equired Client Information: ysis to be performed at Pace FL iple Plain, MN 55359 NONE 004 impany. Page 9 of 13 # MHTI 9

(N/A)

(N/A)



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority: Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project #		11/1/	Date and Initials of person:
Project Manager:		1100	Examining contents:
Client:			Label:Deliver:
	4		pH:
Thermometer Used: 1349	Date:	W Time:	Initials;
State of Origin:		rojects, all containers ver	ifjed to ≤6 °C
Cooler #1 Temp. °C 36 (Visual)(	3 (Correction Factor) 3	(Actual)	Samples on ice, cooling process has begur
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler#3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
	USPS Client Cor		Other
	Priority Overnight   Standard (	Overnight   Groun	d ☐ International Priority
☐ OtherBilling: ☐ Recipient 📉 Sen	ndor III Third Dade	D 0 4% 04	
1222 7	3 = 0 =	☐ Credit Card	□ Unknown
Tracking #	23 2501		
Packing Material: UBubble Wrap Bub	ble Bags None Oth	er	
	Shorted Date:	Shor	ted Time: Qty:
Samples shorted to lab (If Yes, complete)	Shorted Date:		ted Time: Qty:
Samples shorted to lab (If Yes, complete) Chain of Custody Present	Shorted Date:	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Filled Out	Shorted Date:	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC	Shorted Date:  C:  C:  CYCC □ NO □N/A  DYes □ NO □N/A	Shor	ted Time: Qty:
Packing Material: Bubble Wrap Bub Samples shorted to lab (If Yes, complete) Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC	Shorted Date:  C  C  V  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC	Shorted Date:  C  C  V  Yes   No   N/A    V  Yes   No   N/A    V  Yes   No   N/A    V  Yes   No   N/A	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume	Shorted Date:  C  VYCC   NO   N/A    VYCS   NO   N/A	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used	Shorted Date:  C:  CYCO	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time	Shorted Date:  Colored Date:  Colore	Shor	ted Time: Qty:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Tample Labels match COC (sample IDs & date/time of collection) If containers needing acid/base preservation have be	Shorted Date:  Colored Date:  Colore	Shor	Preservation Information:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Contain	Shorted Date:  Colored Date:  Colore	Shor	Preservation Information:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Ramples Arrived within Hold Time Rush TAT requested on COC Rufficient Volume R	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date:	Preservation Information:
Chain of Custody Present Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of collection) If containers needing acid/base preservation have be secked. If Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC sufficient Volume correct Containers Used containers Intact cample Labels match COC (sample IDs & date/time of collection) Il containers needing acid/base preservation have be elected. I Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& eadspace in VOA Vials? ( >6mm):	Shorted Date:  Column   Column	Preservative Lot #/Trace Date:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Containers Arrived within Hold Time Cush TAT requested on COC Cufficient Volume Cush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Complete Labels match COC (sample IDs & date/time of collection) Containers needing acid/base preservation have be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& colleged on VOA Vials? (>6mm):  ip Blank Present:	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Containers Intact Comples Labels match COC (sample IDs & date/time of collection) Containers needing acid/base preservation have be necked. Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Coliform Blank Present:  Container Notification/ Resolution:	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date: Initials:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Containers Intact Containers Intact Containers needing acid/base preservation have be necked. Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm); Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:	Shorted Date:  Column   Column	Preservative Lot #/Trace Date:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Cufficient Volume Correct Containers Used Containers Intact Containers Intact Containers Intact Containers needing acid/base preservation have be necked. Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O& Ceadspace in VOA Vials? ( >6mm); Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:  Control Resolution:	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date: Initials:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Ramples Arrived within Hold Time Rush TAT requested on COC Rufficient Volume Rorrect Containers Used Rontainers Intact Rample Labels match COC (sample IDs & date/time of collection) Romainers needing acid/base preservation have be recked. Romainers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB readspace in VOA Vials? ( >6mm):  Rip Blank Present: Reference Contacted:	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date: Initials:	Preservation Information:
Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Camples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Containers Intact Containers needing acid/base preservation have be encked. Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OB Containers needing Preservation are found to be incompliance with EPA recommendation:	Shorted Date:  Colored Date:  Colore	Preservative Lot #/Trace Date: Initials:	Preservation Information:



### **Document Name:**

# Service Center Transfer Checklist Document Number:

ENV-FRM-MIN4-0135 Rev.00

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

# **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗀	AZ 🗌		
Client:	Wenck				
<b>Destination Lab:</b>	MPLS 🗀	VM 🗆 [	Duluth 🗆		
National	☐ Othe	Page 1	FL		
Received w/ Cus	tody Seal ?	Yes 🖾	No □		
Custody Seal Inta	ect?	Yes	No □		
Temperature	°C		Corr. Factor	Corr. Temp	
IR Gun:	T5		Samples or	n ice, in coo	l down
Rus	sh 🗵 Shor	t Hold 🗆	N/A □		
Containers	Intact ?	Yes	No 🗆		
Repacked and	Re-Iced?	Yes	No 🗆		
Notes:					4,

anno Osp

7/22/2020

ĸ	Samples Pre-Logged	I into eCOC.						Of Orig Needed	jin: MN I: ☐ Ye	s x No		Pace	Analytical
Wo	rkorder: 10525701	Workorder N	lame: B002606	6-19-017 Wate	er Gremlir	1			ved Date:		Result	s Requested By	7/28/2020
Rep	ort To		Subcentra	ct To		5,5		- 8		Requeste			
Pac 170 Sui Min	nika Asp De Analytical Minnesota O Elm Street te 200 neapolis, MN 55414 one (612)607-1700		8 Eas Ormo	Analytical Ormit Tower Circle and Beach, FL : e (386)672-566	32174		erved Conta	ainers	ne in DW by 522 (Pace FL)				
ttom	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other			1,4-Díoxa				LAB USE ONLY
1	641778	PS	7/20/2020 15:58	10525701001	Drinking	1			Х				
2													
3													
4													
5							$\Box \Box$					omments	
Tran	sfers Released By		Date/Time	Received I	Bv _		- 1	Date/Tim	e		G	minents	
1				M	WIII	0	orbi	170	Tubo				
2				10,01	1100		414	1	100				
_		- Es - 121.		1	1							_	

In order to maintain client confidentiality, Ideation/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 35564856

Wednesday, July 22, 2020 12 21.37 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



Project Manager Review:

Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #	WO#:3556	4856	—)ate and Initials of person:
Project Manager:	PM: SMM Due	Date: 07/28/20	xamining contents: TMA
Client:	CLIENT: PACMIN		abel:
Offent.			eliver:
Thermometer Used: 1349	Date:	W Time: (()	Initials: I.r.
State of Origin:	For WV	projects, all containers verified	d to ≤6 °C
Cooler #1 Temp.°C_36 (Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begin
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has begi
Cooler #4 Temp.°C(Visual)			Samples on ice, cooling process has begi
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex UPS	USPS Client C	ommercial D Pace	Other
Shipping Method: ☐ First Overnight 🖻	Priority Overnight   Standard	d Overnight   Ground	☐ International Priority
1	ender   Third Party	☐ Credit Card ☐	Unknown
Tracking # 1320 15	523 2501		
Custody Seal on Cooler/Box Present:	Yes ∐No Sealsi	ntact: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bu		other	
Samples shorted to lab (If Yes, complete)	Shorted Date:		Time: Qty:
, and the second second second	Chorted Date	Shorted	Time: Qty:
Shain of Custody Dynamit		Comments:	
Chain of Custody Present	QYes □ No □N/A		
Chain of Custody Filled Out	DYes □ No □N/A	M- M (14.0 4	0
Relinquished Signature & Sampler Name COC	, \	unongina	X
camples Arrived within Hold Time	DYes 🗆 No 🗆 N/A	0	
sufficient Volume	□Yes □ No □N/A		
	Yes 🗆 No 🗆 N/A		
correct Containers Used	OYes ONO ON/A		
ontainers Intact ample Labels match COC (sample IDs & date/time	of □ No □N/A		
ollection) Il containers needing acid/base preservation have	Yes □ No □N/A		
necked.	Yes □ No □N/A	Pre Preservative:	eservation Information:
Il Containers needing preservation are found to be ompliance with EPA recommendation:	in NYes □ No □N/A	Lot #/Trace #	
Exceptions: VOA, Coliform, TOC, C		Date: Initials:	Time:
eadspace in VOA Vials? ( >6mm):	□Yes □ No NN/A		
ip Blank Present:	□Yes □ No NN/A		
ient Notification/ Resolution: Person Contacted:		Date/Time:	
omments/ Resolution (use back for additio		-	

Date:





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

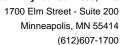
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320

Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525701001	641778	Drinking Water	07/20/20 15:58	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525701001	641778	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

Date: 07/27/2020 01:21 PM

Sample: 641778	Lab ID: 105	25701001	Collected: 07/20/2	20 15:58	Received: 07	/21/20 11:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	0.23	ug/L	0.21	1	07/23/20 10:53	07/24/20 15:33	3 123-91-1	



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin Project:

Pace Project No.: 10525701

QC Batch: 650880

QC Batch Method: EPA 522 Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525701001

METHOD BLANK: 3539245

Matrix: Water

Associated Lab Samples:

10525701001

Blank Parameter Units Result Reporting Limit

Qualifiers Analyzed

1,4-Dioxane (p-Dioxane) ND ug/L 1,4-Dioxane-d8 (S) % 76

0.20 07/24/20 11:14 70-130 07/24/20 11:14

LABORATORY CONTROL SAMPLE: 3539246

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.7 83 70-130 ug/L 1,4-Dioxane-d8 (S) 88 70-130 %

LABORATORY CONTROL SAMPLE: 3539247

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	.17J	83 79	50-150 70-130	

MATRIX SPIKE SAMPLE: 3539248

		35562061001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.33	2.1	1.8	69	70-130	M1
1,4-Dioxane-d8 (S)	%				69	70-130	S5

SAMPLE DUPLICATE: 3539249

Date: 07/27/2020 01:21 PM

		35563844001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.12	ND		20	
1,4-Dioxane-d8 (S)	%	83	81			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525701

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 07/27/2020 01:21 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525701

Date: 07/27/2020 01:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525701001	641778	EPA 522	650880	EPA 522	651289

Pace Analytical

# CHAIN-OF-CUSTODY / Analytical Request Document

ŏ Regulatory Agency SAMPLE CONDITIONS State / Location Page: Residual Chlorine (Y/N) The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Received on 3,7 TEMP In C 1632 00/1/02/11/1 Requested Analysis Filter 7/20 DATE annika, asp@pacelabs.com, 1349 ACCEPTED BY / AFFILIATION 622 1,4-dioxane N/A tesT sesylenA Methanol Preservatives Na2S2O3 39664 HOBN Pace Project Manager. Invoice Information: T S I ЮН arson Company Name: HNO3 Pace Profile #: Address: Pace Quote: **₩SSO4** Attention: SIGNATURE of SAMPLER: They 1632 Unpreserved 10905 TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 7/6/20 PRINT Name of SAMPLER: Project Name: Water Gremlin Well Sampling - 2606-0017 DATE 出る 2 DATE COLLECTED RELINQUISHED BY / AFFILIATION TIME 7/20/20 START Required Project Information: DATE Kelly Jaworski 6 (G=GRAB C=COMP) SAMPLE TYPE Purchase Order#. MATRIX CODE (see valid codes to left) Report To: Section B Copy To: MATRIX
Denking Water
Water
Waste Water
Product
Soul/Soid
Oil
Wipe
Air
Chee One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique ADDITIONAL COMMENTS Fax Grass IX Rd 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359 Talt: kjaworski@went one: NONE NONE squested Due Date: 1430 ITEM # 0

(N/A) Samples

COOLET Delaes Custody

(N/A)

85



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority Pace Florida Quality Office

# Sample Condition Upon Receipt Form (SCUR)

Project # Project Manager: Client:	Date and Initials of person:  Examining contents:  Label: Deliver:
Thermometer Used: 1349 Date: 7	pH:
Cooler #1 Temp.°C	(Actual) Samples on ice, cooling process has begun
	Comments:
Chain of Custody Procent	
Chain of Custody Filled Out	
Relinquished Signature & Sampler Name COC  Gamples Arrived within Hold Time  Dyes  No  NAME  NAME  NO  NAME  N	
Rush TAT requested on COC   Yes No N/A  Sufficient Volume   Yes No N/A	
Correct Containers Used	
Containers Intact	
ample Labels match COC (sample IDs & date/time of ollection)	
Il Containers needing acid/base preservation have been hecked.  Il Containers needing preservation are found to be in ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates	Preservation Information: Preservative:
eadspace in VOA Vials? ( >6mm):	
ip Blank Present: □Yes □ No N/A	
lient Notification/ Resolution: Person Contacted:  pomments/ Resolution (use back for additional comments):	Date/Time:
Project Manager Review:	Date: Page 10



## Document Name:

# Service Center Transfer Checklist Document Number:

**ENV-FRM-MIN4-0135 Rev.00** 

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

# **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗆	AZ 🗆	
Client:	Wenck			
Destination Lab:	MPLS 🗀	VM 🗆 D	uluth 🗆	
National	☐ Othe	Page F	L	
Received w/ Cus	tody Seal ?	Yes	No □	
Custody Seal Inta	ect?	Yes 🗖	No □	i
Temperature	°C		orr. Factor Corr. Temp	
IR Gun:	T5	×	Samples on ice, in c	ool down
Rus	sh 🗵 Shor	t Hold □ N	I/A □	
Containers	Intact ?	Yes	No 🗆	
Repacked and	Re-Iced?	Yes	No 🗆	
Notes:	mu Osp	7	/22/2020	

ĸ	Samples Pre-Logged	I into eCOC.						Of Orig Needed	jin: MN I: ☐ Ye	s x No		Pace	Analytical
Wo	rkorder: 10525701	Workorder N	lame: B002606	6-19-017 Wate	er Gremlir	1			ved Date:		Result	s Requested By	7/28/2020
Rep	ort To		Subcentra	ct To		5,5		- 8		Requeste			
Pac 170 Sui Min	nika Asp De Analytical Minnesota O Elm Street te 200 neapolis, MN 55414 one (612)607-1700		8 Eas Ormo	Analytical Ormit Tower Circle and Beach, FL : e (386)672-566	32174		erved Conta	ainers	ne in DW by 522 (Pace FL)				
ttom	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other			1,4-Díoxa				LAB USE ONLY
1	641778	PS	7/20/2020 15:58	10525701001	Drinking	1			Х				
2													
3													
4													
5							$\Box \Box$					omments	
Tran	sfers Released By		Date/Time	Received I	Bv _		- 1	Date/Tim	e		G	minents	
1				M	WIII	0	orbi	170	Tubo				
2				10,01	1100		414	1	100				
_		- Es - 121.		1	1							_	

In order to maintain client confidentiality, Ideation/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 35564856

Wednesday, July 22, 2020 12 21.37 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



Project Manager Review:

Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #	WO#:3556	4856	—)ate and Initials of person:
Project Manager:	PM: SMM Due	Date: 07/28/20	xamining contents: TMA
Client:	CLIENT: PACMIN		abel:
Offent.			eliver:
Thermometer Used: 1349	Date:	W Time: (()	Initials: I.r.
State of Origin:	For WV	projects, all containers verified	d to ≤6 °C
Cooler #1 Temp.°C_36 (Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begin
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has begi
Cooler #4 Temp.°C(Visual)			Samples on ice, cooling process has begi
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex UPS	USPS Client C	ommercial D Pace	Other
Shipping Method: ☐ First Overnight 🖻	Priority Overnight   Standard	d Overnight   Ground	☐ International Priority
1	ender   Third Party	☐ Credit Card ☐	Unknown
Tracking # 1320 15	523 2501		
Custody Seal on Cooler/Box Present:	Yes ∐No Sealsi	ntact: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bu		other	
Samples shorted to lab (If Yes, complete)	Shorted Date:		Time: Qty:
, and the second second second	Chorted Date	Shorted	Time: Qty:
Shain of Custody Dynamit		Comments:	
Chain of Custody Present	QYes □ No □N/A		
Chain of Custody Filled Out	DYes □ No □N/A	M- M (14.0 4	0
Relinquished Signature & Sampler Name COC	, \	unongina	X
camples Arrived within Hold Time	DYes 🗆 No 🗆 N/A	0	
sufficient Volume	□Yes □ No □N/A		
	Yes 🗆 No 🗆 N/A		
correct Containers Used	OYes ONO ON/A		
ontainers Intact ample Labels match COC (sample IDs & date/time	of □ No □N/A		
ollection) Il containers needing acid/base preservation have	Yes □ No □N/A		
necked.	Yes □ No □N/A	Pre Preservative:	eservation Information:
Il Containers needing preservation are found to be ompliance with EPA recommendation:	in NYes □ No □N/A	Lot #/Trace #	
Exceptions: VOA, Coliform, TOC, C		Date: Initials:	Time:
eadspace in VOA Vials? ( >6mm):	□Yes □ No NN/A		
ip Blank Present:	□Yes □ No NN/A		
ient Notification/ Resolution: Person Contacted:		Date/Time:	
omments/ Resolution (use back for additio		-	

Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526357001	635128	Drinking Water	07/27/20 08:40	07/27/20 14:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526357001	635128	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

Date: 07/31/2020 12:08 PM

Sample: 635128	Lab ID: 10	526357001	Collected: 07/27/2	20 08:40	Received: 07	/27/20 14:00 N	//atrix: Drinkin	g Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
1,4-Dioxane (p-Dioxane) Surrogates	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 12:45	123-91-1	P4
1,4-Dioxane-d8 (S)	86	%	70-130	1	07/29/20 12:26	07/30/20 12:45		



### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

QC Batch: 652249

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526357001

METHOD BLANK: 3546520 Matrix: Water

Associated Lab Samples: 10526357001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) % 88 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Date: 07/31/2020 12:08 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

			MS	MSD								
		10526212001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.1	2.1	1.7	1.8	80	84	70-130	2	20	
1,4-Dioxane-d8 (S)	%						90	91	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### WORKORDER QUALIFIERS

WO: 10526357

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### ANALYTE QUALIFIERS

Date: 07/31/2020 12:08 PM

P4 Sample field preservation does not meet EPA or method recommendations for this analysis.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526357

Date: 07/31/2020 12:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526357001	635128	EPA 522	652249	EPA 522	652612



SAMPLE ID  One Character per box.  One Character per b	Pace Analytical www.paceuss.com  :ction A :quired Client Information:  :mpany: Wenck Associates, Inc.  Idress: 1800 Pioneer Creek Center  aple Plain, MN 55359  aii: kjaworski@wenck.com  ione: NONE Far	Section B Required Project Information: Report To: Kelly Jaworski Copy To: Purchase Order #:	Section C Invoice Information:  Attention:  Company Name:  Address:  Pace Quote:	Page: 1 Of 1
MO#: 10526357	SAMPLE ID  One Character per box.  (A-Z, 0-91, -)  Sample Ids must be unique  MATRIX Drinking W Water Waste Wat Product Oil One Character per box.  (A-Z, 0-91, -)  Sample Ids must be unique	Project #: \(\(\frac{1}{2}\)\) \(\frac{1}{2}\)\ \(1	Pace Profile #: 39664, 4  Requested Analysis Filters  Preservatives	State / Location
ADDITIONAL COMMENTS  RELINGUISHED BY/AFFLIATION  DATE  TIME  ACCEPTED BY/AFFLIATION  DATE  TIME  SAMPLE CONDITIONS  SAMPLER NAME AND SIGNATURE  ACCEPTED BY/AFFLIATION  DATE  TIME  SAMPLE CONDITIONS  1/1/20  1/2	2 3 4 5 6 6 7 8 8		WO#:	10526257
	ADDITIONAL COMMENTS sis to be performed at Pace FL	Dan Sulle Per 7/6/20 Dan Sullenck 7/27/20	9905 Pay 20-/Wenck 7/19/20 12 8:50 WOOD 7212019	SAMPLE CONDITIONS  (4)  (5)  (5)  (4)  (5)  (4)  (5)  (5)



### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

# ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Client Name:  Wenck Associated	رمهسر در	_	Pro	oject #:	W	0#:	10	52635	<b>57</b>	
Courier: ☐ Fed Ex ☐ UPS ☐ Pace ☐ SpeeDec	U:	SPS	 Cli  See Exe			: AKA [ENT: W	ENCK	Due Date:	08/03/20	
Tracking Number:			[	j L	(100				ingeres <u>La ser</u> a de la composição	
Custody Seal on Cooler/Box Present? Yes	No	Sea	als Intact	?   Yes	⊠No	Biol	ogical Ti	issue Frozen? [	_Yes	ÌN/A
Packing Material: Bubble Wrap Bubble B	ags [	None	□Oth	er:	•			emp Blank?	Yes □No	
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☑ T5(0489)	1	Type of	lce:	]Wet □E	Blue	□None	□D	-	<i>,</i> —	
Did Samples Originate in West Virginia? ☐Yes ☒No	We	re All Co	ontainer 1	emps Taken	ı? ∐Yes	□No Ĵ	XN/A			
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ter	np blank	c: 40	,19		°C	Avera	age Corrected T	emp	
Correction Factor: Cooler Temp Correcto	ed w/ten	np blank	<u>: 38</u>	,17		°C	(no	temp blank on	ly): See Excep	
USDA Regulated Soil: ( 🔀 N/A, water sample/Other:			)		ials of P	erson Exa	mining	Contents:	11/2 7-27	'-2c
Did samples originate in a quarantine zone within the Uni ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a	naps)?	Yes	□No	Hawaii a	and Puerl	to Rico)?		source (internation  Yes No  COC paperwork		
				T				MENTS:		<del></del>
Chain of Custody Present and Filled Out?	Ƴ⊠Yes	□No	·	1.					***	
Chain of Custody Relinquished?	Yes	□No		2.						
Sampler Name and/or Signature on COC?	Yes	□No	□n/a	3.						
Samples Arrived within Hold Time?	¥Yes	□No		4.						
Short Hold Time Analysis (<72 hr)?	∐Yes	∕⊠No						iform/E coli BOI	D/cBOD Hex Chro	ome
Rush Turn Around Time Requested?	XYes	□No		6.5 Da	14 ta	<del>†</del> ,				
Sufficient Volume?	Yes	□No		7.	J					
Correct Containers Used?	yes	□No		8.						
-Pace Containers Used?	₹₹Yes	□No								
Containers Intact?	Yes	□No		9.						
Field Filtered Volume Received for Dissolved Tests?	∐Yes	□No	<b>⊠</b> N/A	10. Is sed	liment v	isible in th	e dissolv	ed container?	]Yes □No	
Is sufficient information available to reconcile the samples to the COC?	₹¥es	□No	•	11. If no, w	rrite ID/ C	Date/Time o	n Contair	ner Below:	See Exce	ption
Matrix: Water Soil Oil Other							wa.u			
All containers needing acid/base preservation have been checked?	∐Yes	□No	<b>7</b> ⊠N/A	12. Sample	#					
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	∀ <b>Z</b> N/A		NaOH	□н	NO₃	∐H₂SO₄	Zinc Acetat	:e
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	∏No	√⊠N/A	Positive for Chlorine? Res. Chlorin		Yes No 0-6 Roll	рН Раг	per Lot#	See Exce	ption
						3 0 11011		Joseph	0-14-201h	
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No □No	⊠N/A ⊠N/A	13.					See Exce	ption
Trip Blank Present? Trip Blank Custody Seals Present?	∐Yes ∐Yes	□No □No	IZN/A IZN/A	14. Pace T	Trin Alan	nk Lot # (if	nurchace	adl:		
	FT 1.62	INO	ZYN/A	race I	ושוט אווי				lv [].	
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Date/Tim	۱۵۰	Fie	id Data	Required?	YesNo	
Comments/Resolution:				. Date/ 11111	··· —			***************************************		
**	<del></del>									
Project Manager Review:	ww.	Ou	0		Date:		7/27	/2020		
Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers).	complian	ce sample	a copy	of this form wi		t to the No	rth Carol	ina DEHNR Certifi	cation Office ( i.e o	out of

Labeled by: Page 10 of 12

7.	Yes
MN	
te Of Origin:	rt. Needed:
=	
5566016	

Pace Analytical "

×

Workol	Workorder: 10526357	Workorder N	Workorder Name: B002606-19-017		Water Gremlin	Owner	Owner Received Date:	te: 7/27/2020	Results Requested Bv: 8/3/2020	8/3/2020
Report To	0		Subcontract To	t To				Requeste	100	
Annika Asp Pace Analyi 1700 Elm S Suite 200 Minneapolis Phone (612	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace / 8 East Ormon Phone	Pace Analytical Ormond Be 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	nd Beach	Preserved Containers	A S22 (Pace FL)			
Item Sar	Sample ID	Sample Type	Sample Collect Type Date/Time	Lab ID	Matrix	60787A¥	iexoid-4,1			LAB USE ONLY
1 635128	28	PS	7/27/2020 08:40	10526357001	Drinking 1		×			
2										
т										
4										
2										
Transfers	Released By	,	Date/Time	Pocoived By			Date (Time		Comments	
-		19 (fau	HCHOW IL	de	ASIL	14.18	7/2/2/20 1040	st to		
2	3						5,7	7349		
8										
Cooler	Cooler Temperature on Receipt	Receipt	sno o.	Custody Seal Y	or N	Recei	Received on Ice Y	or N	Samples Intact Y	Or N

<sup>\*\*\*</sup>In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Project Manager Review:

Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised; May 30, 2018 Issuing Authority: Pace Florida Quality Office

m (SCUR)

Date:

PM: SMM

	als of person:
<b>Examining cont</b>	ents:
Label:	7
Deliver:	
nH:	

Project Manage CLIENT	M Que Date: 0 : PACMIN	8/03/20	Date and Initials of person: Examining contents:
Clien.			Label:
			pH:
Thermometer Used: 1349	Date: 7/28/2.C	Time:	15 Initials: BRN
State of Origin:	For WV pro	jects, all containers verifie	d to ≤6 °C
Cooler #1 Temp. C 3, U (Visual) +.	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #2 Temp. C5 (Visual)	(Correction Factor) 5	(Actual)	Samples on ice, cooling process has begur
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #4 Temp. C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #5 Temp. C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp. C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS	USPS ☐ Client ☐ Com	mercial 🗆 Pace	Other
	riority Overnight		☐ International Priority
□ Other/			-
Billing: ☐ Recipient ☐ Send	der   Third Party	Credit Card	Unknown
Tracking#	20 7523	4033	
Custody Seal on Cooler/Box Present:		ct: Yes No	tce: Wel Blue Dry None
Packing Material: Bubble Wrap Bubb	ole Bags    None   Othe	r	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted	Time: Qty:
	Co	mments:	
Chain of Custody Present	ØYes □ No □N/A		
Chain of Custody Filled Out	□/res □ No □N/A		
Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Samples Arrived within Hold Time	ZYes □ No □N/A		
Rush TAT requested on COC	□Yes ⊅ No □N/A		
Sufficient Volume	Øes □ No □N/A		
Correct Containers Used	□/Yes □ No □N/A		
Containers Intact	□/res □ No □N/A		
Sample Labels match COC (sample IDs & date/time of collection)	IŽYes □ No □N/A		
All containers needing acid/base preservation have been	en ,	Pro	eservation Information:
hecked. If Containers needing preservation are found to be in	DYes □ No □N/A	Preservative:_	
ompliance with EPA recommendation:	7/3 Ves INO □N/A	Lot #/Trace #:_ Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G		Initials:	
deadspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
rip Blank Present:	□Yes □ No ŪN/A		
lient Notification/ Resolution: Person Contacted:		Date/Time:	
omments/ Resolution (use back for additiona	- ( 01-	n hul = /	
2 27 004	- 03 PM range	6 by by	





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

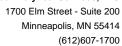
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

Lab ID Sample ID		Matrix	Date Collected	Date Received	
10526999001	635128	Drinking Water	07/31/20 08:58	07/31/20 15:00	





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526999001	635128	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

Date: 08/11/2020 10:31 AM

Sample: 635128	Lab ID: 10	526999001	Collected: 07/31/2	20 08:58	Received: 07	//31/20 15:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.19	1	08/09/20 05:35	08/10/20 20:55	5 123-91-1	
1,4-Dioxane-d8 (S)	103	%	70-130		08/09/20 05:35		_	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

QC Batch: 655137

QC Batch Method: EPA 522 Analysis Method:

EPA 522

Analysis Description:

Laboratory:

522 MSS 1,4 Dioxane

08/10/20 19:51

70-130

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526999001

METHOD BLANK: 3561567 Matrix: Water

Associated Lab Samples:

10526999001

Blank Reporting

107

Parameter Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/10/20 19:51 ug/L

Spike

Conc.

20

LABORATORY CONTROL SAMPLE:

Parameter

3561568

Units

10526991001

Result

ND

Units

ug/L

%

%

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

1,4-Dioxane-d8 (S)

ug/L %

20.4

102 70-130 111 70-130

LABORATORY CONTROL SAMPLE: 3561569

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 105 50-150 1,4-Dioxane-d8 (S) % 113 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3561570 MS MSD 3561571

MSD

% Rec Max

Qual

20

Parameter 1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Date: 08/11/2020 10:31 AM

Spike Spike Conc.

23

MS Conc. Result

23

Result 23.4

MS % Rec

22.8

102

110

MSD % Rec

Limits **RPD** RPD 3

70-130

99 106 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526999

Date: 08/11/2020 10:31 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526999

Date: 08/11/2020 10:31 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526999001	635128	EPA 522	655137	EPA 522	655495

Pace Analytical www.pacelass.com

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

(N/Y) ntact Samples SAMPLE CONDITIONS (N/A) ŏ Cooler 2 Sealed Regulatory Agency 3 Custody (N/Y) MO#:10526999 Received on 45 Residual Chlorine (Y/N) Page: LEMP in C 11500 TIME T/29/20 1515 DATE DATE Signed / 21 10526999 annika.asp@pacelabs.com, ACCEPTED BY LAFFILIATION Server 1 Pace 1, 4 Dioxane 522 ¹teeT seaylsnA N/A HOSHI~N antan Preservatives Na2S2O3 A554 HOBN Pace Quote:
Pace Project Manager:
Pace Profile # n ЮН Section C Invoice Information: ЕОИН Company Name: 6.8 HS204 B Address: Unpreserved # ОЕ СОИТАІИЕВЗ SAMPLER NAME AND SIGNATURE 00/8/1 SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: COLLECTED Project Name: 522 Bisulfate vials Project #: |\$(\O\2\666-67-017) Report To: Waterman Shane Copy To: Keルッゴ CurorSC BELINQUISHED BY / AFFILIATION TIME START 1/3/1/20 Required Project Information: SAMPLE TYPE (G=GRAB C=COMP) Purchase Order #: MATRIX CODE (see valid codes to left) Section B MATRIX
Dinking Water
Water
Waste Water
Product
SoluSolid
Oil
Wipe
Air
Chher
Tissue Sove Ite RA Soais ADDITIONAL COMMENTS One Character per box. (A-Z, 0-9 / , -). Sample Ids must be unique 135/28 SAMPLE ID Wenck Associates, Inc. 2080 Wooddale Drive Phone: 651-294-4588 Requested Due Date: **₹**+4 − • Email: swaterman@wenck.com Required Client Information: Noodbury, MN 55125 1433 11 7 5 Page 9 of 12 က 9 œ P Ø 2 # Mati

# ace Analytical "

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

ENV-FRM-MIN4-0150 Rev.00

Sample Condition **Client Name:** Project #: WO#:10526999 **Upon Receipt** Due Date: 08/07/20 Courier: Fed Ex □UPS USPS Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions **Tracking Number:** No Seals Intact? ĮΝο Biological Tissue Frozen? ☐Yes ☐No ☐N/A Yes Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? Yes ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: **□**Wet Type of Ice: Blue None ☐ T4(0254) ☐ T5(0489) Melted Did Samples Originate in West Virginia? 

Yes Were All Container Temps Taken? ☐Yes ☐No ☐A/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: °C **Average Corrected Temp** (no temp blank only): See Exceptions -D.2 Cooler Temp Corrected w/temp blank: 1.2, 4.8 Correction Factor: \_\_ ОC OC. ☐1 Container USDA Regulated Soil: ( N/A water sample Other: Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Hawaii and Puerto Rico)? No Yes If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: Chain of Custody Present and Filled Out? □No Chain of Custody Relinquished? Yes □No 2. Sampler Name and/or Signature on COC? ☐\Yes □No □N/A 3. Samples Arrived within Hold Time? **⊘**∀es □No 4. Short Hold Time Analysis (<72 hr)? Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Yes □Kro ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other\_ **Rush Turn Around Time Requested?** Yes No 6. Sufficient Volume? ₽¥¥es 7. □No Correct Containers Used? Yes □No 8. -Pace Containers Used? **Ø**Yes □No Containers Intact? Yes □No 9. Field Filtered Volume Received for Dissolved Tests? Yes □No 10. Is sediment visible in the dissolved container? Yes No is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? √es □No Matrix: Water Soil Oil Other All containers needing acid/base preservation have been □Yes □No .₽N/A 12. Sample # checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO₃ □No ∐H<sub>2</sub>SO<sub>4</sub> Yes ☐Zinc Acetate compliance with EPA-recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. See Exception □No ØN/A Exceptions: VOA, Coliform, TOC/DOC Oil and Grease. Yes Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. □No ∐Yes See Exception Headspace in VOA Vials (greater than 6mm)? ∐Yes No Trip Blank Present? Yes No ØŊ/A\_ 14. Trip Blank Custody Seals Present? Yes □No DN/A Pace Trip Blank Lot # (if purchased): **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

Project Manager Review: Date: Note: Whenever there is a discrepancy affecting North Carolina compliance sample, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

> Page 10 of 12 Labeled by: \_\_\_\_\_\_CES

8/3/2020

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02	
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9	
3	

35567502 Internal Transfer Chain of x Samples Pre-Logged into eCOC.

Yes Owner Received Date: e Of Origin: MN Cert. Needed:

Face Analytical ®

8/7/2020

Results Requested By:

× 7/31/2020

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414

Phone (612)607-1700

Workorder: 10526999

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL)

Phone (386)672-5668

Preserved Containers

Drinking Matrix Lab ID Collect Date/Time Sample Type PS

AG1F Other

LAB USE ONLY

10526999001 7/31/2020 08:58

Item | Sample ID

635128

×

Received By Date.Time

Released By

**Transfers** 

81412

Date/Time

Z Custody Seal Y or ပ္စ Cooler Temperature on Receipt

Received on Ice

Samples Intact Y or

Y or N

Comments

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory

Monday, August 03, 2020 2:41:01 PM

Page 1 of 1



Project Manager Review:

Document Name: Sample Condition Upon Receipt Form Document No. F-FL-C-007 rev. 13

Document Revised; May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#	: 35567502	Form (SCUR)
1 Toject Mail	Que Date: 08/0	Date and Initials of person:  Examining contents:  Label:
Client.		Deliver: pH:
Thermometer Used: 1-5 (	Date: 8/4/2	$\frac{1}{2}$ Time: $\frac{1!22}{1}$ Initials: $\frac{1}{2}$
State of Origin:	For WV proj	jects, all containers verified to ≤6 °C
Cooler #1 Temp. "C (Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #2 Temp. C (Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #3 Temp. °C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #6 Temp.*C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Shipping Method:	USPS Client Comr	vernight   Ground   International Priority
Tracking #	326 7523 5	<670
Packing Material: □Bubble Wrap ☐Bu Samples shorted to lab (If Yes, complete)	Shorted Date:	
Chain of Custody Present	DY'es □ No □N/A	
Chain of Custody Filled Out	ZYes □ No □N/A	
Relinquished Signature & Sampler Name COC	Yes I No IN/A	
Samples Arrived within Hold Time	Ves □ No □N/A	
Rush TAT requested on COC	Yes No No N/A	Due 8/7
sufficient Volume		
correct Containers Used	⊈Yes □ No □N/A	
ontainers Intact	ØYes □ No □N/A	
ample Labels match COC (sample IDs & date/time ollection)	ØYes □ No □N/A	
Il containers needing acid/base preservation have be necked. Il Containers needing preservation are found to be compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, C	n TYes No N/A	Preservation Information: Preservative: Lot #/Trace #: Date: Initials:
eadspace in VOA Vials? ( >6mm):	□Yes □ No ŪN/A	
ip Blank Present:	□Yes □ No ¬N/A	
ient Notification/ Resolution: Person Contacted:		Date/Time:
omments/ Resolution (use back for additio	nal comments):	

Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

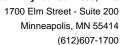
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

Lab ID	ab ID Sample ID		Date Collected	Date Received	
10526212001	641460	Drinking Water	07/24/20 08:34	07/24/20 12:15	





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526212001	641460	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

Date: 07/31/2020 12:07 PM

Sample: 641460	Lab ID: 10	526212001	Collected: 07/24/2	20 08:34	Received: 07	/24/20 12:15	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 10:52	2 123-91-1	
1,4-Dioxane-d8 (S)	92	%	70-130		07/29/20 12:26			



### **QUALITY CONTROL DATA**

EPA 522

522 MSS 1,4 Dioxane

Pace Analytical Services - Ormond Beach

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

QC Batch: 652249

QC Batch Method: EPA 522 Analysis Description:

Laboratory:

Associated Lab Samples: 10526212001

METHOD BLANK: 3546520 Matrix: Water

Associated Lab Samples: 10526212001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) % 88 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Date: 07/31/2020 12:07 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

			IVIO	IVIOD								
		10526212001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.1	2.1	1.7	1.8	80	84	70-130	2	20	
1,4-Dioxane-d8 (S)	%						90	91	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526212

Date: 07/31/2020 12:07 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526212

Date: 07/31/2020 12:07 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526212001	641460	EPA 522	652249	EPA 522	652612

Pace Analytical

ŏ Samples Intact (Y/V) Regulatory Agency SAMPLECONDITIONS Cooler WO#:10526212 Sealed Page: Custoc (N/Y) 98 CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Received on N. Z TEMP In C 12.60 S. S.1 20 TIME 7/19/2 7/20/EV May ha DATE annika.asp@pacelabs.com ACCEPTED BY LAFFILIATION 622 1,4-dioxane tseT sesylanA Pole N/A Other Methanol Preservatives Nazszoa 39664 HOBN Pace Project Manager. Pace Profile #: 3966 Invoice Information: Attention: HCI 6534 Company Name: HOO3 Pace Quote: Section C ₽08ZH Address: 10go Unpreserved # ОF СОИТАІИЕЯ SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: Project Mame: Water Gremlin Well Sampling - 2606-0017 DATE COLLECTED RELINQUISHED BY / AFFILIATION TIME START Sprake S Required Project Information: Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE urchase Order #: MATRIX CODE (see valid codes to left) Section B Copy To: 人のが、 MATRIX
Dinking Weter
Waster
Waster
Waster
Product
Soursaide
Oil
Wipe
Air
Other
Tissue ADDITIONAL COMMENTS. One Character per box. (A-Z, 0-91, -) Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. ail: kjaworski@wenck.com quired Client Information: rsis to be performed at Pace FL ple Plain, MN 55359 quested Due Date: NONE Page 9 of 12

# Pace Analytical\*

hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition Client Name:			Pre	oject #:	MC	)#:10	052621	2
Upon Receipt Wenck Associa	ites.	Inc.			PM:	·		
Courier: Fed Ex UPS  MUL 7-24-20 Pace USpeeDee	∐us	PS	DACII	I		ENT: WENC	Due Date: K	07/31/20
Custody Seal on Cooler/Box Present? Yes	<b></b> No	Sea	als Intact	?   Yes	⊠N	o <b>Biolog</b> i	ical Tissue Frozen	? □Yes □No ☑N/A
Packing Material: Bubble Wrap Bubble B	ags [	None	□Oth	er:			Temp Blank?	
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of I	ce: 5	<b>₹</b> Wet □	llue	□None	□Dry □Melt	ed
Did Samples Originate in West Virginia? ☐Yes 💆 No	Wer	re All Co	ntainer 1	Temps Taken	<b>?</b> □Ye	s 🗆 No 🗖 N	i/A	
Temp should be above freezing to 6°C Cooler Temp Re	ad w/tem	ıp blank	: <u> </u>	7,4.0		oc .	Average Correcte	•
Correction Factor: TYVE Cooler Temp Correcte	ed w/tem	p blank	: 27	, 4.0		⁰c	_	only): See Exceptions C See Exceptions
USDA Regulated Soil: ( 📉 N/A, water sample/Other:	····	)			als of	Person Exami	ining Contents:	MK2 7-24-2
Did samples originate in a quarantine zone within the Unit		<del>,</del>				-	oreign source (intern	,, ,
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m <b>If Yes to either question, fill out a</b>		Yes i Soil Ch	No orklist (F			rto Rico)? sclude with SC	∐Yes ∐\ `UR/COC paperwo	
in real to stated question, and out a			iceniise (i	14114 Q 330,	-		COMMENTS:	71 N.
Chain of Custody Present and Filled Out?	<b>M</b>						COMMITTEE TO	
Chain of Custody Relinquished?	Yes ∀Yes	No □No		2.				
Sampler Name and/or Signature on COC?	XIYes	□No	□N/A	3.				
Samples Arrived within Hold Time?	√Z]Yes		LINA	4.				
Short Hold Time Analysis (<72 hr)?	∐Yes	⊠No		5. Feca			tal Coliform/E coli []! te []Orthophos []Ot	BOD/cBOD Hex Chrome
Rush Turn Around Time Requested?	<b>Z</b> Yes	□No		6. 5 FD	SE	Pau		
Sufficient Volume?	Yes	□No	· · · · · · · · · · · · · · · · · · ·	7.		/		
Correct Containers Used?	Yes	□No		8.				
-Pace Containers Used?	Yes	□No						
Containers Intact?	¥ZYes	□No		9.				
Field Filtered Volume Received for Dissolved Tests?	∐Yes	∏No	`⊠N/A	10. Is sed	iment	visible in the d	lissolved container	Yes No
Is sufficient information available to reconcile the samples		<u> </u>	Jesi VV				Container Below:	See Exception
to the COC?	X¥Yes	∐No						
Matrix: ₩Water Soil Oil Other	·							
All containers needing acid/base preservation have been checked?	∐Yes	□No	<del>-</del> EÎN/A	12. Sample	#			
All containers needing preservation are found to be in compliance with EPA recommendation?	∐Yes	∐No	<b>⊠</b> N/A		NaOH	□ нис	D <sub>3</sub> □H₂SO₄	Zinc Acetate
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)				Davidson for	ъ Г	<b>⊐</b> v		
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	∑ Yes .	□No	□N/A	Positive for Chlorine?	Res. [	_]Yes _]No p	H Paper Lot#	See Exception
DRO/8015 (water) and Dioxin/PFAS	,			Res. Chlorin	e	0-6 Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	Yes	□No	<b>≱</b> N/A	13.			4	See Exception
Headspace in VOA Vials (greater than 6mm)? Trip Blank Present?	Yes	∐No	M/A	14.				
Trip Blank Custody Seals Present?	□Yes □Yes	□No □No	N/A N/A	•	rio Bla	ınk Lot # (if pu	rchased):	
CLIENT NOTIFICATION/RESOLUTION			2111/11	1	TIP DIO			Dyes DN-
Person Contacted:				Date/Tim	e:	rielū	Data Required?	∐Yes ∐No `
Comments/Resolution:					·· —			
*								
Project Manager Review:	nu (	JUF	>		Date:		7/27/2020	•
Note: Whenever there is a discrepancy affecting North Carolina	ı compliand	e sample	es, a copy	of this form wi	ll be se	nt to the North	Carolina DEHNR Cer	tification Office (i.e out of

Labeled by: \_\_\_\_

Page 10 of 12

35566012 Internal Transfer Chain o x Samples Pre-Logged into eCOC.

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Yes Owner Received Date: ite Of Origin: MN Lent. Needed:

7/24/2020 ×

Pace Analytical

Results Requested By:

7/31/2020

Requested Analysis

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Workorder: 10526212

1,4-Dioxane in DW by 522 (Pace FL)

Phone (386)672-5668

AG10 Matrix Collect

Preserved Containers

10526212001 Lab ID 7/24/2020 08:34 Date/Time Sample Type ods

Item Sample ID

641460

LAB USE ONLY

×

ന

Drinking

Date/Time

Received By

Released By

Transfers

ပ္စ

Custody Seal Y or N Cooler Temperature on Receipt

Z ō

Samples Intact Y

Received on Ice Y or N

Comments

1040

DU8512 3.5

Date/Time

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory.

babe 11 27, 2020 11:34:08 AM

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Projec **Project Manag** 

Project Manager Review:

# Upon Receipt Form (SCUR)

PM: SMM

Due Date: 07/31/20

CLIENT: PACMIN

Date and Initia	
<b>Examining conte</b>	nts:
Label:	9
Deliver:	
pH:	

Clier			Deliver:
Thomas T3110	7/26/2	- 10	pH:
Thermometer Used: 1349	Date: 7/28/3	Time: 10	1945 Initials: BRN
State of Origin:	_ For WV	projects, all containers ver	ified to ≤6 °C
Cooler #1 Temp. °C 3, 4 (Visual) +.	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp. C (Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS Shipping Method: Frist Overnight Pr	USPS ☐ Client ☐ Co		☐ Otherd
□ Other			a El monatonari Honey
Billing: Recipient Send	er   Third Party	☐ Credit Card	☐ Unknown
Tracking #	20 7523	4033	
Custody Seal on Cooler/Box Present:		ntact: Yes No	Ice: (We) Blue Dry None
Packing Material: Bubble Wrap Bubb		/	
Samples shorted to lab (If Yes, complete)	Shorted Date:		and Time.
The second of th		Comments:	ed Time: Qty:
Chain of Custody Present	ØYes □ No □N/A	Johnnends.	
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Samples Arrived within Hold Time	ZYes □ No □N/A		
Rush TAT requested on COC	ØYes □ No □N/A	Due 71	3/
Sufficient Volume	□Yes □ No □N/A	() 0 0 7 1	
Correct Containers Used	☐Yes ☐ No ☐N/A		
Containers Intact	□Yes □ No □N/A		
Sample Labels match COC (sample IDs & date/time of collection)	Yes   No   N/A		
All containers needing acid/base preservation have bee	n ,		Preservation Information:
checked.  M Containers needing preservation are found to be in	Tyes □ No □N/A	Preservative	
ompliance with EPA recommendation:	Yes DNo DN/A	Lot #/Trace # Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G		Initials:	
leadspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
rip Blank Present:	□Yes □ No ŪN/A		
Person Contacted:		Date/Time:	
omments/ Resolution (use back for additional	comments):		
			Page 12 of 1

Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526360001	517294	Drinking Water	07/27/20 10:40	07/27/20 14:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526360001	517294	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

Date: 07/31/2020 12:09 PM

Sample: 517294	Lab ID: 10	526360001	Collected: 07/27/2	20 10:40	Received: 07	/27/20 14:00	Matrix: Drinking	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
	Pace Analyti	cai Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 13:17	123-91-1		
		%			07/29/20 12:26				



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

Date: 07/31/2020 12:09 PM

QC Batch: 652249

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526360001

METHOD BLANK: 3546520 Matrix: Water

Associated Lab Samples: 10526360001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) 88 70-130 07/30/20 08:29 %

LABORATORY CONTROL SAMPLE: 3546521 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524 MS MSD 10526212001 MS Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 2.1 2.1 1.7 80 70-130 2 20 ug/L 1.8 84 1,4-Dioxane-d8 (S) 90 % 91 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

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TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526360

Date: 07/31/2020 12:09 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526360

Date: 07/31/2020 12:09 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526360001	517294	EPA 522	652249	EPA 522	652612

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical

ŏ 8 SAMPLE CONDITIONS WO# 10526360 2 Page: (N/Y) eninoldD laubiseR The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. по БеуівэвЯ <u>ئ</u> TEMP In C 12.0 TIME 227,20 [4,0) Most worker S/1972 DATE annika.asp@pacelabs.com, NEW ACCEPTED BY AFFILIATION enexoib-A,1 SS3 N/A teeT sesylanA Methanol Preservatives Va2S2O3 ABM Pace Project Manager: ; HOBN Invoice Information: HCI Attention: Company Name: Address: ниоз Pace Quote: 1580¢ Section C 0305 Upreserved 2021 WEST 3/20/20/2/ # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION H16/20 PRINT Name of SAMPLER: Project Name: Water Gremlin Well Sampling - 2606-0017 SIGNATURE of SAMPLER: DATE TIME SAC SAC 200 DATE COLLECTED RELINQUISHED BY / AFFILIATION TIME H272 25.25 START Required Project Information: Report To: Kelly Jaworski (G=GRAB C=COMP) 9 Purchase Order #; (see valid codes to left) **MATRIX CODE** Section B Copy To: CODE DWW WY SP. P. WW TS AR AR MATRIX
Drinking Water
Water
Waste Water
Product
Product
SourSolid
Oil
Wipe
Adr SAMPLE ID
One Character per box.
(A-Z, 0-9 i, -)
Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center びのなれ mpany: Wenck Associates, Inc. kjaworski@wenck.com quired Client Information: rsis to be performed at Pace FL られる aple Plain, MN 55359 quested Due Date: NONE # WBLI

Page 9 of 12

(N/X) Samples Intact

Cooler

Sealed Custody

(V/V)

DATE Signed

# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

# ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  Client Name:  Wenck Associate	os Asa	•	Pro	oject #:	WO#:	1052636	50
Courier: Fed Ex UPS Pace SpeeDee	□∪s	PS	 ⊠Cli al See Exc		PM: AKA CLIENT: W	Due Date: ENCK	08/03/20
Tracking Number:							
Custody Seal on Cooler/Box Present?	∐No	Sea	als intacti	? 🗌 Yes	⊠No Biolo	gical Tissue Frozen?	]Yes □No ₩N/A
Packing Material: Bubble Wrap X Bubble B	ags	None	Oth	er:			Yes No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)		Type of I		B	lue []None	DryMelted	
Did Samples Originate in West Virginia? ☐Yes 🕍 No	Wei	re All Co	ntainer T	emps Taken	? □Yes □No 🎗	]n/a	
Temp should be above freezing to 6°C Cooler Temp Re	ad w/tem	ıp biank	:_ <u> </u>	,19	°C	Average Corrected Te	emp
Correction Factor: Cooler Temp Correcte	ed w/tem	p blank	. उ.८	,1.7	⁰c	(no temp blank onl	1 Container
USDA Regulated Soil: ( N/A, water sample/Other:	aps)?	Yes	□No	A, Did samp Hawaii ar	les originate from a nd Puerto Rico)?	nining Contents: foreign source (internatio YesNo SCUR/COC paperwork.	nally, including
						COMMENTS:	
Chain of Custody Present and Filled Out?	Yes	□No		1.	<u></u>		
Chain of Custody Relinquished?	Yes	No		2.			
Sampler Name and/or Signature on COC? Samples Arrived within Hold Time?	Yes Yes	□No □No	□N/A	3. 4.			
Short Hold Time Analysis (<72 hr)?	∐Yes	MN∘		5. Fecal	Coliform HPC T	otal Coliform/E coli BOD,	/cBOD ☐Hex Chrome
Rush Turn Around Time Requested?	Yes	∏No		6. 5 Da			
Sufficient Volume?	Yes	□No		7.	<del>)                                    </del>		
Correct Containers Used?	γes	□No		8.			
-Pace Containers Used?	Yes	□No					
Containers Intact?	Yes	□No		9.			
Field Filtered Volume Received for Dissolved Tests?	☐Yes	□No	<b>⊠</b> N/A	10. Is sedi	ment visible in the	dissolved container?	Yes No
Is sufficient information available to reconcile the samples				11. If no, wr	ite ID/ Date/Time on	Container Below:	See Exception
to the COC?	Yes	□No					
Matrix: Water Soil Oil Other	· · · · · · · · · · · · · · · · · · ·						14
All containers needing acid/base preservation have been checked?	∐Yes	∏No	⊅ N/A	12. Sample i	#		
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	₩/A		NaOH	IO₃ ∏H₂SO₄	☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	∐Yes	□No	<b>√⊠</b> N/A	Positive for Chlorine?	ResYes No	pH Paper Lot#	See Exception
DRO/8015 (water) and Dioxin/PFAS				Res. Chlorin		0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	∐Yes	□No	⊠N/A	13.			See Exception
Trip Blank Present?	Yes ☐ Yes	∐No □No	™/A	14.		<del> </del>	<u> </u>
Trip Blank Custody Seals Present?	Yes	□No	XN/A		rip Blank Lot # (if p	urchased):	
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Date/Time		d Data Required?	Yes No
Comments/Resolution:							
Project Manager Review:  Note: Whenever there is a discrepancy affecting North enough and the properties of the properti	Compliance	e sample	s, a copf	of this form wil		th Carolina Benine Certific	
					Labeleu Dy.		

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Internal Transfer Chain

Samples Pre-Logged into eCOC.

Workorder: 10526360

State Of Origin: MN Cert. Needed:

Yes

×

Pace Analytical

7/27/2020

Owner Received Date:

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Results Requested By:

8/3/2020

1,4-Dioxane in DW by 522 (Pace FL)

Pace Analytical Ormond Beach

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Preserved Containers

KASS203

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Drinking Matrix 10526360001 Lab ID Date/Time Collect Sample Type PS

LAB USE ONLY

Sample ID

Item

517294

7/27/2020 10:40

Date/Time

Released By

**Transfers** 

Received By

Z ō **Custody Seal** 

Z ō

Samples Intact Y

Z 0

Received on Ice

1-34g 9201

212817

Date/Time

Cooler Temperature on Receipt

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

A Monday. July 27. 2020 4:14:50 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project # **Project Manager** 

Project Manager Review:

Due Date: 08/03/20

CLIENT: PACMIN

Date and Initials of person:

LAGITHINING COM	Tello:
Label:	7
Deliver:	
pH:	
-	

		pH:
Thermometer Used: 1340	Date: 7/28/20 Time:	1045 Initials: BRN
State of Origin:		
	rection Factor) (Actual)	_
A The second sec		Samples on ice, cooling process has begu
	4717190	Samples on ice, cooling process has beg
	rection Factor)(Actual)	Samples on ice, cooling process has begu
	rection Factor)(Actual) rection Factor)(Actual)	Samples on ice, cooling process has beg
Cooler #6 Temp. *C(Visual)(Con		Samples on ice, cooling process has begu
Continuity (Cont	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex UPS USPS	☐ Client ☐ Commercial ☐ Pac	e Other
Shipping Method:	night   Standard Overnight   Gro	ound   International Priority
□ Other	-	
3illing: ☐ Recipient ☐ Sender	☐ Third Party ☐ Credit Card	☐ Unknown
racking# \\320	7523 4033	
sustody Seal on Cooler/Box Present: Yes 🔲 N	o Seals intact: ✓ Yes ☐ N	o Ice: (Wel) Blue Dry None
acking Material: Bubble Wrap Bubble Bags	□None □Other	$\circ$
,		norted Time: Qty:
	Comments:	
hain of Custody Present		
hain of Custody Filled Out	es 🗆 No 🗆 N/A	
elinquished Signature & Sampler Name COC		
amples Arrived within Hold Time	es □ No □N/A	
ush TAT requested on COC	es Ç∕No □N/A	46
FC 1 43/4	es □ No □N/A	
orrect Containers Used	es 🗆 No 🗆 N/A	
ontainers Intact	es □ No □N/A	
mple Labels match COC (sample IDs & date/time of lection)	es 🗆 No 🗆 N/A	
containers needing acid/base preservation have been		Preservation Information:
Containers needing preservation are found to be in	es	1/2
mpliance with EPA recommendation:	es Ø No □N/A Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G, Carbamat		
adspace in VOA Vials? ( >6mm):   Description Blank Present:		
ent Notification/ Resolution:  Person Contacted:	Date/Time:	
mmontal Popolistica (see book for additional community	4-3-	
mments/ Resolution (use back for additional commen としている のましましま)		かなら

Date:





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
10527001001	517294	Drinking Water	07/31/20 10:58	07/31/20 15:00	





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10527001001	517294	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

Date: 08/11/2020 10:31 AM

Sample: 517294	Lab ID: 10	527001001	Collected: 07/31/2	20 10:58	Received: 07	//31/20 15:00	Matrix: Drinking	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522									
	Pace Analytic	al Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.19	1	08/09/20 05:35	08/10/20 20:39	123-91-1		
1,4-Dioxane-d8 (S)	96	%	70-130		08/09/20 05:35	00/40/00 00 00			



### **QUALITY CONTROL DATA**

EPA 522

Pace Analytical Services - Ormond Beach

B002606-19-017 Water Gremlin Project:

Pace Project No.: 10527001

QC Batch: 655137

Analysis Method:

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Associated Lab Samples:

METHOD BLANK: 3561567 Matrix: Water

10527001001

Associated Lab Samples: 10527001001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/10/20 19:51 ug/L 1,4-Dioxane-d8 (S) % 107 70-130 08/10/20 19:51

LABORATORY CONTROL SAMPLE: 3561568

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.4 102 70-130 ug/L 1,4-Dioxane-d8 (S) 111 70-130 %

LABORATORY CONTROL SAMPLE: 3561569

Date: 08/11/2020 10:31 AM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 105 50-150 1,4-Dioxane-d8 (S) % 113 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561570 3561571 MSD

			IVIO	MOD								
		10526991001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	23	23	23.4	22.8	102	99	70-130	3	20	
1,4-Dioxane-d8 (S)	%						110	106	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10527001

Date: 08/11/2020 10:31 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10527001

Date: 08/11/2020 10:31 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10527001001	517294	EPA 522	655137	EPA 522	655495

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Cartina	₹	
Required C		Required Project Information:	Arcaon C known of the first of	
Company:	ites, Inc.	Report To: Waterman, Shane	Attention:	Fage: 1 Of 1
Address:	0	CODY TO: Kelly Jaworski	Company Name:	
Woodbury,			Address:	Dogwalater
Email: sw		Purchase Order #:	Pace Quote:	
Phone:	Fax:	Project Name: 522 Bisulfate vials	Pace Project Manager. annika.asp@paceiabs.com.	State / Location
Requested	Sday	Project # 13002606-19-017	П	
	· · · · · · · · · · · · · · · · · · ·		Requested Analysis Filtered (YM)	ered (YIN)
	MATTRUX	S i	Preservatives	
	SAMPLE ID Self-sold	& <del>*</del> & & & & & & & & & & & & & & & & & & &	) (se)	a (AVA)
# M3TI	One Character per box. Whe At (A-2, 0-91, -) Other Sample Ids must be unique Tesue	용 중 유 원 환 ) adoo xiatam ) aqyt ajamaa	AMPLE TEMP AN POF CONTAINER Inpreserved H2504 H21 H23 H25203 H252	aninoid') leublee
-	517294	8-301 04/K/ 3	× ×	
2				3
m			***************************************	- 0507090
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9			10527001	
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	ADDITIONAL COMMENTS	PENCUISHED BY METALFON	- TIME ACCEPTED BY JASTELATION DATE	THE SAMPLE CONDITIONS
	1543 Gase Ur.Cd	BE MOTONINI	20 16:00 Lan Lant Wenck 7/20/	5/5/19
		Van Fan Wook The		20 (300 4.5 V N Y
Pa		SAMPLER NAME AND SIGNATURE	ATURE	U
ge 9 of	·	PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	ER: Day Latson   Date Signed: > 1.5.15.	EMP in C
12			(Trans-	TT See CC

# Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** ENV-FRM-MIN4-0150 Rev.00 Document Revised: 27Mar2020

Page 1 of 1

Page 10 of 12

Labeled by: \_\_\_\_\_\_CEC<sup>(2)</sup>

Pace Analytical Services -Minneapolis

Sample Condition Upon Receipt  Client Name:			P	roject #:		<u> 10# : 1</u>			·
Courier: Fed Ex UPS Pace SpeeD		JSPS		Client		M: AKA LIENT: WEI		Date: 0	8/07/20
☐Pace ☐SpeeD Tracking Number:	ee	ommer	cial See E	exceptions				otal	
Custody Seal on Cooler/Box Present?	Ν̈́ο	Se	eals Intac	:t? ∐Ye	s 🗾	No Biolog	gical Tissue Fr	ozen? 🗀\	es No 🕍
Packing Material: Bubble Wrap Bubble	Bags [	None	□ot	her:				ank? 🔀	
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(045)         ☐ T4(0254) ☐ T5(0489)	9)	Type of	fice:	<b>∑</b> ⁄Wet	□Blue	□None	□Dry □	]Melted	
Did Samples Originate in West Virginia? ☐Yes ☐ Yes	5 W	ere Ali C	ontainer	Temps Tal	ken? 🔲	res □No 🗗	<del>√</del> /A		
Temp should be above freezing to 6°C Cooler Temp R	ead w/te	mp blan	k:	1.4,	5.0	⁰C	Average Cor	ected Tem	р
Correction Factor: Cooler Temp Correc	ted w/ter	np blanl	k:	1.2,	1.8	oc	(no temp b	olank only) ºC	: See Exception
USDA Regulated Soil: ( N/A water sample) Other:  Did samples originate in a quarantine zone within the Ur  ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check of the company of the c	maps)?	☐Yes	П№	iA, Did s Hawa	amples or	f Person Exam riginate from a f erto Rico)? include with S	oreign source (	internationa	
							COMMENTS:		
Chain of Custody Present and Filled Out?	<b>☑</b> Yes	□No		1.					
Chain of Custody Relinquished?	Ves	□No		2.					
Sampler Name and/or Signature on COC?	✓Yes	□No	□N/A	3.					
Samples Arrived within Hold Time?	Ves	□No		4.					
Short Hold Time Analysis (<72 hr)?	Yes	D/No		5.	ecal Colifourbidity	orm	tal Coliform/E co te □Orthophos	oli □BOD/cB □Other	OD Hex Chrome
Rush Turn Around Time Requested?	☐Yes	No		6.					
Sufficient Volume?	€Yes	□No		7.					
Correct Containers Used?	Yes	□No		8.			-		
Pace Containers Used?	₩es	□No				·			
Containers Intact?	Yes	□No		9.					
Field Filtered Volume Received for Dissolved Tests?	Yes	No	Z/N/A	10. ls s	ediment	visible in the d	lissolved conta	iner?  Ye	s No
Is sufficient information available to reconcile the samples to the COC?	, <b>∏</b> #es	□No		11. If no,	write ID/	/ Date/Time on C	ontainer Below		See Exceptio
Matrix: Water Soil Oil Other				e.					_
All containers needing acid/base preservation have been checked?	∐Yes	□No	₽ <b>N</b> TA	12. Samp	le#				
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	"⊠Ñ/A		] NaOH	☐ HNO	) <sub>3</sub>	SO₄ [	Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	□No	ØN/A	Positive f	· [	<del></del>	H Paper Lot#		See Exceptio
				Res. Chlo	riņe	0-6 Roll	0-6 Stri	p	0-14 Strip
extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No □No	DN/A DN/A	13.		4			See Exception
rip Blank Present? rip Blank Custody Seals Present?	□Yes □Yes	□No □No	ØN/A ØN/A	14.	a Trin R!-	nk Lot # (if pur	chaeod).		<u></u>
CLIENT NOTIFICATION/RESOLUTION			<u></u>	l idu	c mp blo		Chased): Data Require	1? □Vec	По
Person Contacted:				Date/Ti	me:	- 1-1-1-1	-ata noquii ci		
Comments/Resolution:				· -					
Desired Many 2		)							
Project Manager Review:	nu (	SUC	)		Date:		8/3/2020		n Office ( i.e out o

Internal Transfer Chain of Samples Pre-Logged into eCOC. Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10527001

Subcontract To

× No 7/31/2020 Yes Owner Received Date: Of Origin: MN .... Needed:

Pace Analytical

8/7/2020

Results Requested By:

Requested Analysis

Pace Analytical Ormond Beach

(J4 sosq) SS2 vd WO ni snaxoiO-4,1

Preserved Containers

AG1R

LAB USE ONLY

×

Drinking Matrix

10527001001 Lab ID

7/31/2020 10:58

PS

Date/Time Collect

Sample Type

Item | Sample ID

517294

þ

Samples Intact Y

¥ 0₽

Received on Ice

Comments

1105 7-340 4.7

Date/Time

Received By

Date.Time

Released By

**Transfers** 

D

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Z

Custody Seal Y or

ô

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009

Monday, August 03, 2020 2:44:28 PM

Page 11 of 12

Phone (386)672-5668

Suite 200 Minneapolis, MN 55414 Phone (612)607-1700

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

8 East Tower Circle Ormond Beach, FL 32174



### Document Name Sample Condition Upon Receipt Form Document No.:

Document Revised: May 30, 2018 Issuing Authority Pace Florida Quality Office

CLIENT: PACMIN

m (SCUR)

Project Project Manage

Project Manager Review:

Date: 08/07/20

Date and Initials of person:

Examining	contents:
Label:	.10
Deliver:	
pH:	
0	151

Client: 7 Time: 11:22 State of Origin: For WV projects, all containers verified to ≤6 °C Cooler #1 Temp.°C (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #2 Temp. C (Visual) O. (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #3 Temp.°C (Visual) (Correction Factor) \_(Actual) Samples on ice, cooling process has begun Cooler #4 Temp.°C (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #5 Temp.°C (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #6 Temp. C (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Fed Fx Other ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground □ International Priority ☐ Other ☐ Sender Billing: ☐ Recipient □ Third Party ☐ Credit Card ☐ Unknown Tracking # Custody Seal on Cooler/Box Present: Yes □No Seals intact: Yes No Ice: (Wet Blue Dry None Packing Material: Bubble Wrap Bubble Bags □None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty: \_\_ Comments: Chain of Custody Present ØYes □ No □N/A Chain of Custody Filled Out ✓Yes □ No □N/A Relinquished Signature & Sampler Name COC ZYes. □ No □N/A Samples Arrived within Hold Time ZYes □ No □N/A Rush TAT requested on COC **Yes** □ No □N/A Sufficient Volume **VYes** □ No □N/A Correct Containers Used Yes □ No □N/A Containers Intact Yes □ No □N/A Sample Labels match COC (sample IDs & date/time of Yes □ No □N/A All containers needing acid/base preservation have been Preservation Information: **Yes** checked. □ No □N/A Preservative: All Containers needing preservation are found to be in Lot #/Trace #: compliance with EPA recommendation: Yes □ No □N/A Date Time: Exceptions: VOA, Coliform, TOC, O&G, Carbamates Initials Headspace in VOA Vials? ( >6mm): □Yes □ No □N/A Trip Blank Present: □ No DN/A □Yes Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments):

Date:





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

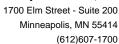
Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526692001	1555 Goose LK Rd	Drinking Water	07/29/20 09:33	07/29/20 16:39





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526692001	1555 Goose LK Rd	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

Date: 08/05/2020 01:30 PM

Sample: 1555 Goose LK Rd	Lab ID: 10	526692001	Collected: 07/29/2	20 09:33	Received: 07	/29/20 16:39	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 13:44	123-91-1	
1,4-Dioxane-d8 (S)	86	%	70-130		08/03/20 13:32			

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

QC Batch: 653465

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526692001

METHOD BLANK: 3552677

Date: 08/05/2020 01:30 PM

677

Matrix: Water

Associated Lab Samples: 10526692001

Parameter Units Result

Qualifiers

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 08/04/20 08:26

 1,4-Dioxane-d8 (S)
 %
 103
 70-130
 08/04/20 08:26

LABORATORY CONTROL SAMPLE: 3552678

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887

MS MSD 10526688001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 21.4 21 22.2 104 70-130 20 ug/L 21.9 104 1,4-Dioxane-d8 (S) % 111 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526692

Date: 08/05/2020 01:30 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526692

Date: 08/05/2020 01:30 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526692001	1555 Goose LK Rd	EPA 522	653465	EPA 522	653821

### wired Client Information: ted Due Date: daworski@wenck.com One Character per box. (A-Z, 0-91, -) Sample lds must be unique Wenck Associates, Inc. 1800 Pioneer Creek Center 1555 **SAMPLE ID** STD 50m LOOP C Required Project Information: Report To: Kelly Jaworski Copy To: Purchase Order #: Project Name: Water Grentin Weil Sampling - 2606-0017 Project #: HOUZLOb- [9-0]7 Di. MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP) SAME. START TEAC SIGNATURE of SAMPLER: COLLECTED PRINT Name of SAMPLER: work 12/co Prep A H CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. <u>م</u> 7/6/20 THE STATE OF 金 BAMPLE TEMP AT COLLECTION 0900 Attention: Company Name: Address: # OF CONTAINERS Pace Project Manager: Pace Quote: SEX. Unpreserved H2804 EONH HCI VOSTED NeOH Ne28203 Methanol Other No.HSOH LIGHT DATE Signed: アンスの 522 1,4-dioxane OES 1-11/1/4 7/19/2 129/20 W0#:10526692 CU1639 1200 んどん TEMP in C Page: Received on Residual Chlorine (Y/N) (Y/N) Custody Sealed Cooler 2 Samples intact (Y/N) B age 9 of 12

# Pace Analytical®

hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

## ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt	Client Name: $\sqrt{2} \sqrt{2} \sqrt{2}$	Associat	tec		Pr	oject #:	W	0#:1	05	2669	2
	MALL	73300101	(7)				PM:	AKA		Due Date:	
Courier:	Fed Ex	UPS			⊠ci			ENT: WEN	CK	de pate:	08/05/20
Tracking Number:	Pace	SpeeDee	Co	mmerci	al See Ex	ceptions	×		<u> </u>		, <u> </u>
<b>Custody Seal on Co</b>	oler/Box Present?	□Yes 💢	No	Sea	als Intact	? <u>\</u> Y	es 🔼	No <b>Biolo</b>	gical Tis	ssue Frozen?	□Yes □No ☑N/A
Packing Material:	Bubble Wrap	<b>⊠</b> Bubble Ba	gs 🗆	None	Oth	ner:			To	emp Blank?	∑Yes □No
Thermometer:	☐ T1(0461) ☐ T2(13 ☐ T4(0254) 🔀 T5(04	336)		Type of	lce:	∬Wet	Blue	None	□Dr	y  Melted	i
Did Samples Origina	te in West Virginia?	Yes No	We	re All Co			aken? ∐Y	es □No 🔀	ÎN/A		
Temp should be above fr	eezing to 6°C Co	poler Temp Rea	ıd w/ten	np blank	K:	4.6		⁰C		ge Corrected	
Correction Factor:	70.7	Temp Correcte				4.4		0.0	(no		nly): See Exceptions
8			· · · · · · · · · · · · · · · · · · ·					ºc		℃	1 Container
USDA Regulated Soil	: ( X N/A, water sai	mple/Other:		)				Person Exam			NUZ 9-19-720
Did samples originate ID, LA. MS, NC, NM, N	in a quarantine zone	within the Unite	ed States:	_					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· —	ionally, including
	Yes to either ques			Yes d Soil Ch	∐No Locklist (f		waii and Pud			]Yes ∐No	
	res to citier ques	tion, ini out a n	Eguiatei	3011 (11	ieckiist (i	-IVIIV-Q-	336) allu l	ilciuue Willi.			N
		****							COMM	IEN IS:	
Chain of Custody Prese			XYes	No_		1.					
Chain of Custody Reline			Yes	_ □No		2.		-		***	
Sampler Name and/or			Yes	□No	□N/A	3.					
Samples Arrived within	Hold Time?		¥¥ves	□No	•	4.				1111	
Short Hold Time Analy	sis (<72 hr)?		Yes	⊠w			Turbidity [	Nitrate Nitr		orm/E coli BO	D/cBOD Hex Chrome
Rush Turn Around Time	e Requested?		Yes	□No		6. S	TUSI	Vay			
Sufficient Volume?			Yes	□No		7.					
Correct Containers Use	d?		Yes	□No		8.					
-Pace Containers Use	ed?		✓Yes	□No							
Containers Intact?			✓Yes	□No		9.		i "w.,			714
Field Filtered Volume R	eceived for Dissolved	1 Tests?	□Yes	□No	⊠n/a	10.	s sadiment	visible in the	dissolve	ed container?	
Is sufficient information			163		N/A	+		/ Date/Time on			See Exception
to the COC?	V During	ic the sumples	Yes	□No			,,		Contain		
Matrix: ☑Water ☐Soil	□oil □other		<b>A</b>								_
All containers needing a		on have been	Yes	□No	<b>⊠</b> N/A	12. Sar	nnle #				
checked?	, , , , , , , , , , , , , , , , , , ,	,	□ 162	Пио	איינאל	12. 501	iipic ii				
All containers needing p		nd to be in	<b>∐</b> Yes	□No	<b>⊠</b> N/A	1	☐ NaOH	☐ HN	lO₃	∐H₂SO₄	☐Zinc Acetate
compliance with EPA re					<b>,</b> — ·						
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, Na	aOH >9 Suitide, NaOi	H>12 Cyanide)				0 -141	6 'n [	<b>7</b> v			C F
Exceptions: VOA, Colifo	rm. TOC/DOC Oil and	d Grease	□Yes	□No	<b>⊠</b> N/A	Chlorin	e for Res. L	Yes No	nH Don	a. I a. ##	See Exception
DRO/8015 (water) and	•	a crease,	<del></del>		<b>~</b>	Res. Ch	<u> </u>	0-6 Roll	pH Pape	0-6 Strip	0-14 Strip
	•					ites. Ci	iioiiie	0-0 Koli		0-0 3t11þ	0-14 Strip
Extra labels present on	soil VOA or WIDRO c	ontainers?	□Yes	□No	₩N/A	13.	· <del></del> ·	· · · · · · · · · · · · · · · · · · ·			See Exception
Headspace in VOA Vials			Yes	□No	为N/A N/A						
Trip Blank Present?			Yes	□No	<b>∠</b> N/A	14.					
Trip Blank Custody Seals	Present?		Yes	□No	Ď⁄N/A	P	ace Trip Bla	ank Lot # (if p	urchase	d):	
CLIENT NOT	FICATION/RESOLU	TION						Field	d Data F	Required?	Yes No
Person Contacted:						Date	/Time:				<u></u> <del></del>
Comments/Resolution	:					-		<u> </u>			
	ager Review:	-					Date:		7/30/202	10	
Note: Whenever there is	a discrepancy affecting	g North Carolina (	compliand	e sample	s, a copy	of this for	m will be se	ent to the Nort	h Carolin	na DEHNR Certif	ication Office ( i.e out of

Labeled by: \_\_\_\_\_\_ Page 10 of 12

# | MO#:35567060 | INDITION | INDIT

Pace Analytical

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× Yes

Cont. Needed:

e Of Origin: MN

LAB USE ONLY 8/5/2020 Results Requested By: Samples Intact Comments 7/29/2020 Z Received on Ice ( N or Owner Received Date: 2/3/120 11: 80 × 1,4-Dioxane in DW by 522 (Pace FL) Date/Time Preserved Containers EOSSSAN Workorder Name: BC02606-19-017 Water Gremlin W Pace Analytical Ormond Beach Drinking Custody Seal (V) or N Matrix Ormond Beach, FL 32174 RRB/Pace Phone (386)672-5668 Received By 8 East Tower Circle 10526692001 Lab ID Subcontract To 7/29/2020 09:33 Date.Time Date/Time Collect S Sample Type Cooler Temperature on Receipt 5 Pace Analytical Minnesota Workorder: 10526692 Minneapolis, MN 55414 Released By Phone (612)607-1700 1555 Goose LK Rd 1700 Elm Street Sample ID Annika Asp Report To. Suite 200 **Transfers** Item

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Project Mana

Proje

# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

CLIENT: PACMIN

Due Date: 08/05/20

Form (SCUR)

Date and Initials of person:

Examining contents:

Label:

Client:			Deliver:
	- 1		pH:
Thermometer Used: 7349	Date: 7/3//	70 Time: 21	5 Initials: C5A
State of Origin:	☐ For W	V projects, all containers verified	d to ≤6 °C
Cooler #1 Temp.*C 5,5 (Visual) +0,1	(Correction Factor)	5.6 (Actual)	Samples on ice, cooling process has begur
Cooler #2 Temp.°C(Visual)	(Correction Factor)		Samples on ice, cooling process has begur
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #5 Temp.°C(Visual)		*	Samples on ice, cooling process has begur
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
12.	Overnight □ Standa  □ Third Party	rd Overnight   Ground	☐ Other ☐ International Priority Unknown
Tracking # 1520 7523 4710			-
Custody Seal on Cooler/Box Present: Yes	☐No Seals	intact: Yes 🗌 No	Ice Wet Blue Dry None
Packing Material: Bubble Wrap Bubble Ba	gs 🗌 None 🔲 (	Other	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted	Time: Qty:
		Comments:	
Chain of Custody Present	Yes □ No □N/A		
Chain of Custody Filled Out	ØYes □ Nu □N/A		
Relinquished Signature & Sampler Name COC	Yes □ No □N/A		
Samples Arrived within Hold Time	ÆYes □ No □N/A		
Rush TAT requested on COC	□Yes ∠No □N/A		
Sufficient Volume	ÁYes □ No □N/A		-
Correct Containers Used	Žiyes □ No □N/A		
Containers Intact	Yes □ No □N/A		
Sample Labels match COC (sample IDs & date/time of collection)	Yes DNo DN/A	*	
All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Car	ZYes □ No □N/A	Preservative:_ Lot #/Trace #:_ Date:_ Initials:	eservation Information:Time:
Headspace in VOA Vials? ( >6mm);	□Yes □ No ☑N/A	mudio	
rip Blank Present:	□Yes □ No □N/A		
Comments/ Resolution (use back for additional con		Date/Time:	
Project Manager Review:			Date:





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526542001	145781	Drinking Water	07/28/20 11:38	07/28/20 14:33





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526542001	145781	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

Date: 08/05/2020 01:20 PM

Sample: 145781	Lab ID: 10	526542001	Collected: 07/28/2	20 11:38	Received: 07	/28/20 14:33 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	08/03/20 13:32	08/04/20 10:00	123-91-1	
1,4-Dioxane-d8 (S)	105	%	70-130		08/03/20 13:32	00/04/00 40 00		

(612)607-1700



### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

QC Batch: 653465

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526542001

METHOD BLANK: 3552677 Matrix: Water

Associated Lab Samples: 10526542001

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/04/20 08:26 ug/L 1,4-Dioxane-d8 (S) 103 70-130 08/04/20 08:26 %

LABORATORY CONTROL SAMPLE: 3552678 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.3 102 70-130 ug/L 1,4-Dioxane-d8 (S) 107 70-130 %

LABORATORY CONTROL SAMPLE: 3552679

Date: 08/05/2020 01:20 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 104 50-150 1,4-Dioxane-d8 (S) % 108 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3552886 3552887 MS MSD 10526688001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 21.4 21 22.2 104 70-130 20 ug/L 21.9 104 1,4-Dioxane-d8 (S) % 111 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526542

Date: 08/05/2020 01:20 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526542

Date: 08/05/2020 01:20 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526542001	145781	EPA 522	653465	EPA 522	653821

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section C

Section B

ŏ Samples Intect Regulatory Agency SAMPLE CONDITIONS  $\tilde{\mathfrak{S}}$ Page: WO#:10526542 Residual Chlorine (Y/V) Received on õ TEMP In C 7/9/2 120 748 1433 TIME PLEWALYO DATE Signed: 7/28/20 DATE annika.asp@pacelabs.com, ACCEPTED BY LAFFILLATION 622 1,4-dioxane N/A 1seT seavisnA HOSTON JOHIO Methanol GISON Preservatives Na2S2O3 Pace Quote: Pace Project Manager: NaOH Invoice Information: Attention: НСІ Company Name: Pace Profile #. HNO3 7257 **₽OSZH** Address: TIME 5060 Unpreserved # OF CONTAINERS SAMPLER NAME AND SKGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: DATE TIME S DATE COLLECTED TIME ろうなが Z START Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE MATRIX CODE (see valid codes to laft) Sopy To: MATRIX
Drinking Water
Waster
Waster
Waster
Product
SoulSould
Oil
Wipe
Ari
Other
Tissue One Character per box. (A-Z, 0-91, -) Sample Ids must be unique ADDITIONAL COMMENTS 18-551 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. ail: kjaworski@wenck.com equired Client Information: rsis to be performed at Pace FL aple Plain, MN 55359 NONE quested Due Date: Page 9 of 12

(N/A)

האחז Sealed Custod

(N/A)

## ace Analytical °

Comments/Resolution:

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

### Pace Analytical Services -ENV-FRM-MIN4-0150 Rev.00 Minneapolis Sample Condition **Client Name:** Project #: WO#:10526542 **Upon Receipt** PM: AKA Due Date: 08/04/20 Courier: UPS USPS Fed Ex Client CLIENT: WENCK Pace SpeeDee Commercial **Tracking Number: Custody Seal on Cooler/Box Present?** Yes Seals Intact? ∐Yes ∕√No Biological Tissue Frozen? Yes No N/A Packing Material: Bubble Wrap Bubble Bags Temp Blank? Yes None Other: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: ☑Wet Blue ■ None Dry Melted ☐ T4(0254) 🗖 T5(0489) Did Samples Originate in West Virginia? ☐Yes □No □N/A No Were All Container Temps Taken? Tyes Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: °C **Average Corrected Temp** (no temp blank only): ☐See Exceptions Correction Factor: -0,2 Cooler Temp Corrected w/temp blank: ٥C oC. 1 Container **USDA Regulated Soil:** (N/A, water sample/Other: Date/Initials of Person Examining Contents: 7282e Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? □No Hawaii and Puerto Rico)? Yes □No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Chain of Custody Present and Filled Out? □No

Chain of Custody Relinquished?	Yes	□No		2.
Sampler Name and/or Signature on COC?	✓Yes	□No	□n/a	3.
Samples Arrived within Hold Time?	Yes	□No		4.
Short Hold Time Analysis (<72 hr)?	∐Yes	∕ĽNo		5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Nitrate Orthophos Other
Rush Turn Around Time Requested?	Yes	□No		6.
Sufficient Volume?	ZÎYes	□No		7.
Correct Containers Used?	Yes	□No		8.
-Pace Containers Used?	∕ZÝes	□No		
Containers Intact?	Yes	□No		9.
Field Filtered Volume Received for Dissolved Tests?	∐Yes	□No	ØN/A	10. Is sediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?  Matrix: ☑Water ☐Soil ☐Oil ☐Other	∠Yes	□No		11. If no, write ID/ Date/Time on Container Below:  See Exception
All containers needing acid/base preservation have been checked?	∐Yes	□No	Øn/a	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	ŹN/A	☐ NaOH ☐ HNO₃ ☐ H₂SO₄ ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	□No	Øn/a	Positive for Res. Yes See Exception Chlorine? No pH Paper Lot#  Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	☐Yes ☐Yes	∏No ∐No	ZÎN/A ZÎN/A	13. See Exception
Trip Blank Present?	∐Yes	□No	N/A	14.
Trip Blank Custody Seals Present?	Yes	□No	∏ÎN/A	Pace Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION			7	Field Data Required? Yes No
Person Contacted:				Date/Time:

**Project Manager Review:** 7/29/20 Date: Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Date/Time:

Page 10 of 12

Labeled by:

<u>C</u>EG®

FMT-ALL-C-002rev.00 24March2009

# Internal Transfer Chain of Cust

X Samples Pre-Logged into eCOC.

Pace Analytical "

vww.pacelabs.com

×

Yes

cert, record;

in: MN

LAB USE ONLY 8/4/2020 Z Samples Intact / V or Results Requested By: Comments Requested Analysis 7/28/2020 Received on Ice (Y) or N Owner Received Date: 1,4-Dioxane in DW by 522 (Pace FL) × 2012 Date/Time Preserved Containers ਸੀਹੈਂਮ Workorder Name: B002606-19-017 Water Gremlin Custody Seal (Y /or N Drinking Pace Analytical Ormond Beach INGCL Matrix Ormond Beach, FL 32174 Received By Phone (386)672-5668 14:00CEN 10526542001 8 East Tower Circle Lab ID Subcontract To 7/28,2020 -1.38 Date/Time 04/62/1 Date/Time Collect ပွ Sample Type Cooler Temperature on Receipt PS Pace Analytical Minnesota Workorder: 10526542 Released By Minneapolis, MN 55414 Phone (612)607-1700 1700 Elm Street Item Sample ID Annika Asp 145781 Report To Suite 200 **Transfers** 

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical

# Document Name: Sample Condition Upon Receipt Form Document No. F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WU#	300000	39	(SCUR)
Project Pm: SMM Project Manage CLIENT:	Due Date:	: 08/04/20	Date and Initials of person:  Examining contents:  Label:
Client			Deliver:
28 🗖	Calaboration (A)		pH:
Thermometer Used: 1331	Date: 7/30/2	20 Time:	130 Initials: BRN
State of Origin:	☐ For W	V projects, all containers v	erified to ≤6 °C
Cooler #1 Temp.°C / (Visual)	Correction Factor)	V	Samples on ice, cooling process has be
Cooler #2 Temp.°C(Visual)			Samples on ice, cooling process has be
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has be
Cooler #4 Temp.°C(Visual)			Samples on ice, cooling process has be
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has be
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has be
Courier: Fed Ex UPS US	ъ Пан . П.		C 04b
Shipping Method:		Commercial Pace	
Other	y overnight LI Standar	u Overnight ☐ Grou	ınd ☐ International Priority
Billing: Becipient Sender	/ D Third Party	☐ Credit Card	☐ Unknown
Tracking # 1320 7527	4597	- Orean Cara	L OHKNOWII
13 23 / 30	-010		
Samples shorted to lab (If Yes, complete)	Shorted Date:	Comments:	orted Time: Qty:
Chain of Custody Present	ØYes ØNo □N/A	Comments:	
Chain of Custody Filled Out	DYES DINO DN/A		
Relinquished Signature & Sampler Name COC	Dyes I No DN/A		
Samples Arrived within Hold Time	Yes D'NO ON/A		
Rush TAT requested on COC	□Yes □ No □N/A		
Sufficient Volume	ØYø\$ □ No □N/A		
Correct Containers Used	Nes No DN/A		
Containers Intact	DY98 DNO DN/A		
Sample Labels match COC (sample IDs & date/time of collection)	MYES INO IN/A		
NI containers needing acid/base preservation have been hecked.	11		Preservation Information:
Il Containers needing preservation are found to be in	ØYes □ No □N/A	Preservativ	ve:
ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, C	☑Yes □ No □N/A	Date:	Time:
leadspace in VOA Vials? ( >6mm):	□Yes □ No ☑N/A	Initials:	
rip Blank Present:	□Yes □ No ☑N/A		
	LICS LINE ENDA		
lient Notification/ Resolution: Person Contacted:		Dato/Time	~
-		Date/Time:	
Comments/ Resolution (use back for additional co	omments):		
		-	
Project Manager Review:			2.4
,			Date:





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525702001	1598 Goose Lk Rd	Drinking Water	07/20/20 08:40	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525702001	1598 Goose Lk Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

Date: 07/27/2020 01:22 PM

Sample: 1598 Goose Lk Rd	Lab ID: 10	525702001	Collected: 07/20/2	20 08:40	Received: 07	/21/20 11:00 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Method: EPA 522 Preparation Method: EPA 522							
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/23/20 10:53	07/24/20 15:49	123-91-1	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

QC Batch Method:

QC Batch: 650880

EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525702001

METHOD BLANK: 3539245

Associated Lab Samples:

10525702001

Matrix: Water

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/24/20 11:14 ug/L 1,4-Dioxane-d8 (S) % 76 70-130 07/24/20 11:14

LABORATORY CONTROL SAMPLE: 3539246

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.7 83 70-130 ug/L 1,4-Dioxane-d8 (S) 88 70-130 %

LABORATORY CONTROL SAMPLE: 3539247

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .17J 83 50-150 1,4-Dioxane-d8 (S) % 79 70-130

MATRIX SPIKE SAMPLE: 3539248

Parameter	Units	35562061001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.33	2.1	1.8	69 69	70-130 70-130	

SAMPLE DUPLICATE: 3539249

Date: 07/27/2020 01:22 PM

		35563844001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.12	ND		20	
1.4-Dioxane-d8 (S)	%	83	81			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525702

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 07/27/2020 01:22 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525702

Date: 07/27/2020 01:22 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525702001	1598 Goose Lk Rd	EPA 522	650880	EPA 522	651289

10525702

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical www.paceus.com

5 Samples SAMPLE CONDITIONS State / Location Sealed Cooler MAN Custody Page: Residual Chlorine (Y/N) (N/A) Received on 25 TEMP In C TIME 1100 171170 7/20 DATE PATE Signed: annika.asp@pacelabs.com, T349 ACCEPTED BY LAFFILLATION 622 1,4-dioxane N/A JeeT seavisnA Methanol Preservatives Na2S2O3 HOPN Pace Quote: Pace Project Manager: Invoice Information; HCI PRINT Name of SAMPLER: Dan Letsun Company Name: Pace Profile #. ниоз Section C H2SO4 Attention: Address: 5060 Unpreserved 7/20/20 1632 TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 7/6/20 SIGNATURE of SAMPLER: Project Name: Water Gremlin Well Sampling - 2005-0047 DATE DAY 8:40 COLLECTED RELINQUISHED BY / AFFILIATION TIME START 7/20/20 Required Project Information; DATE Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE Purchase Order#: (see valid codes to left) Section B Copy To: CODE DWW WT WW P WW O C O C TS MATRIX
Drinking Water
Water
Waste Water
Product
Soil/Soild
Oil
Wipe
Air
Other
Tissue One Character per box. (A-Z, 0-91, -). Sample Ids must be unique. ADDITIONAL COMMENTS day 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. quested Due Date: 🔫 🗧 kjaworski@wenck.com equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359 865 NONE Page 9 of 13

(N/A) Intact



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised; May 30, 2018 Issuing Authority; Pace Florida Quality Office

Page 10 of 13

### Sample Condition Upon Receipt Form (SCUR)

Project #		11/1/	Date and Initials of person:
Project Manager:		1100	Examining contents: TMA
Client:			Deliver:
	1.		рН:
Thermometer Used: 1349	Date: 7 21	Time:	Initials: J.
State of Origin:	_	projects, all containers ver	ified to ≤6 °C
Cooler #1 Temp. °C 3 6 (Visual) 0:1	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp. °C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS US	PS ☐ Client ☐ C	ommercial  Pace	Other
Shipping Method: ☐ First Overnight ☐ Priorit			d □ International Priority
Billing: ☐ Recipient ☐ Sender	——— □ Third Party	☐ Credit Card	□ Unknown
Tracking # 1320 1523	0-		
Custody Seal on Cooler/Box Present: Ves	□No Seals i	ntact: Ves No	Ice: Wet) Blue Dry None
Packing Material: Bubble Wrap Bubble B			too. World Blue Bly None
	-	ther	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Shor	ted Time: Qty:
		Comments:	
Chain of Gustody Present	Yes No N/A		
Chain of Custody Filled Out	Yes 🗆 No 🗆 N/A		
Relinquished Signature & Sampler Name COC	\QYes □ No □N/A		
Samples Arrived within Hold Time	∑Yes □ No □N/A		
Rush TAT requested on COC	□Yes \□No □N/A		
Sufficient Volume	Yes No N/A		
Correct Containers Used	QYès □ No □N/A		
Containers Intact Sample Labels match COC (sample IDs & date/time of	Yes □ No □N/A		
collection)	QYes □ No □N/A		
All containers needing acid/base preservation have been checked.	Yes □ No □N/A	Preservative	Preservation Information:
All Containers needing preservation are found to be in compliance with EPA recommendation.	11	Lot #/Trace	#:
Exceptions: VOA, Coliform, TOC, O&G, C		Date: Initials:	Time:
Headspace in VOA Vials? ( >6mm):	□Yes □ No QN/A		T T
Trip Blank Present:	□Yes □ No NN/A		
Client Notification/ Resolution: Person Contacted:		Date/Time	
Comments/ Resolution (use back for additional c	omments):		
Project Manager Review:			Date:



### **Document Name:**

## Service Center Transfer Checklist Document Number:

ENV-FRM-MIN4-0135 Rev.00

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

### **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗀	AZ 🗀	
Client:	Wenck			
<b>Destination Lab:</b>	MPLS 🗀	VM 🗆 E	ouluth 🗆	
National	☐ Other	Page F		
Received w/ Cus	tody Seal ?	Yes	No □	
Custody Seal Inta	act?	Yes.	No □	
Temperature IR Gun: Rus Containers Repacked and	T5 sh ⋈ Short	7.5	Samples on ice, i	5
Totes.				

annu Osp

7/22/2020

×	ternal Transfe Samples Pre-Logged		of Custo	dy —				Of Origin		X		Pace	e Analytica: www.pscelabs.com
Wo	rkorder: 10525702	korder: 10525702 Workorder Name: B002606-19-017 Water Gremlin				Cert. Needed: Yes X No Owner Received Date: 7/21/2020 Res				sults Requested By: 7/28/2020			
Rep	ort To		Subcontra	ct To						Requeste			1120/2020
Pac 170 Suit Min	ika Asp e Analytical Minnesota D Elm Street e 200 neapolis, MN 55414 ne (612)607-1700		8 Eas Ormo	Analytical Ormo t Tower Circle nd Beach, FL e (386)672-566	32174		erved Conta		ne in DW by 522 (Pace FL)				
ltem	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other			1,4-Dioxan				LAB USE ONLY
1	1598 Goose Lk Rd	PS	7/20/2020 08:40	10525702001	Drinking	1			X				
2													
3													
5				-									
					1				4		Co	omments	= = = = = = = = = = = = = = = = = = = =
Tran	fers Released By		Date/Time	Received E	3y . 1 a		214	Date/Time				inniense.	
1				(1)1	TPU	U	DITE	717	$\square$ 100	V-			
2				0.				-1-					
3		21		1					7				
Coo	ler Temperature on R	eceipt 2"		tody Seal 6	or N		Recei	ved on I	ce /Y br	N	Sa	imples Intac	or N

\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Wednesday, July 22, 2020 12:07:41 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev\_13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Pace Analytical

Project Manager Review:

	ample Condition Upon	26/	UR)
Project # Project Manager: Client:	O#:355040 SMM Due Date SENT: PACMIN	07/28/20	Date and Initials of person: Examining contents: Label: Deliver: pH:
Thermometer Used: 1349	Date: 7 Z)	w Time: 🕠	
State of Origin:	☐ For WV p	rojects, all containers verifie	and to $<$ 6 °C
Cooler #1 Temp.°C 36 (Visual)	-		Samples on ice, cooling process has beg
Cooler #2 Temp.°C(Visual)	•		Samples on ice, cooling process has beg
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has beg
Cooler #4 Temp.°C(Visual)			Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has beg
Cooler #6 Temp.°C(Visual)		·	Samples on ice, cooling process has been
Courier: Fed Ex UPS UPS  Shipping Method: First Overnight Pr  Other  Billing: Recipient Send		Overnight   Ground	☐ Other ☐ International Priority ☐ Unknown
Tracking #		tact: Yes No	Ice: Wet Blue Dry None
	ole Bags	nerShorte	Ice: Wet Blue Dry None
Custody Seal on Cooler/Box Present: Yes Packing Material: Bubble Wrap Bubb Samples shorted to lab (If Yes, complete)	ole Bags	ner	
Custody Seal on Cooler/Box Present: Year Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	ole Bags	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out	Shorted Date:  CYES □ No □N/A	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Bamples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Telinquished Signature & Sampler Name COC	Shorted Date:  C  OYes □ No □N/A  OYes □ No □N/A	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap  Bu	Shorted Date:  C  OYes □ No □N/A  OYes □ No □N/A	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble was Bubble with the samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out  Colored within Hold Time  Country of Custody Filled Within Hold Time	Shorted Date:  COMPANDE SHORTED SHORTE	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Such TAT requested on COC  Sufficient Volume	Shorted Date:  C  Yes   No   N/A	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap  Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Camples Arrived within Hold Time  Rush TAT requested on COC  ufficient Volume  Forrect Containers Used  ontainers Intact	Shorted Date:  COMPANDE SHORTED SHORTED SHORTED SHORTED SHOPE SHOW SHOW SHOW SHOW SHOW SHOW SHOW SHOW	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Itelinquished Signature & Sampler Name COC  Tamples Arrived within Hold Time  The sush TAT requested on COC  Tamples Used  The original of Cooler Sample In the Sample Interest Cooler Sample Labels match COC (sample IDs & date/time of Interest)	Shorted Date:  COMPANDE SHORTED NO SHORTED NO SHORTED NO SHOWA  STATE OF THE SHORTED NO	nerShorte	
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Celinquished Signature & Sampler Name COC  amples Arrived within Hold Time  cush TAT requested on COC  ufficient Volume  orrect Containers Used  containers Intact  ample Labels match COC (sample IDs & date/time of ollection)  I containers needing acid/base preservation have besecked.  I Containers needing preservation are found to be in	Shorted Date:  COMPANDE SHORTED NO SHORTED NO SHORTED NO SHOWA  STATE SHOWS SHOW SHOWS SHOW SHOWS SHOW SHOWS SHOW SHOW	Shorter Shorter Shorter Preservative:	d Time:
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  The requested on COC  The	Shorted Date:  COMPANDE NO NOTA  OYES NO NO NOTA	Shorter Shorter  Preservative: Lot #/Trace #: Date:	d Time: Qty:
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  sufficient Volume  correct Containers Used  containers Intact  sample Labels match COC (sample IDs & date/time of ollection)  I containers needing acid/base preservation have benecked.  I Containers needing preservation are found to be in ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&	Shorted Date:  COMPANDE NO NOTA  Shorted Date:  COMPANDE NO NOTA  SPES NO NO NOTA  SPES NO NO NOTA  SPES NO NO NOTA  SPES NOTA  S	Shorter Shorter  Preservative: Lot #/Trace #/	d Time: Qty:
Custody Seal on Cooler/Box Present:  Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Rufficient Volume  Forrect Containers Used  Containers Intact  Comples Labels match COC (sample IDs & date/time of ollection)  I containers needing acid/base preservation have beneated.  I Containers needing preservation are found to be incompliance with EPA recommendation:	Shorted Date:  COMPANDE NO NOTA  OYES NO NOTA  OYES NO NO NOTA  OYES NO NOTA	Shorter Shorter  Preservative: Lot #/Trace #: Date:	d Time: Qty:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526075001	171831	Drinking Water	07/23/20 13:09	07/23/20 15:25





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526075001	171831	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

Date: 07/29/2020 08:20 AM

Sample: 171831	Lab ID: 10	<b>Lab ID: 10526075001</b> Collected: 07/23/20 13:09		Received: 07	/23/20 15:25	Matrix: Drinking Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Method: EPA 522 Preparation Method: EPA 522							
	Pace Analytic	ai Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 12:49	123-91-1	
1,4-Dioxane-d8 (S)	85	%	70-130		07/27/20 10:45			

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526075001

METHOD BLANK: 3543368

Date: 07/29/2020 08:20 AM

Matrix: Water

Associated Lab Samples: 10526075001

0073001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

Parameter	Units	10525818001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94 101	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526075

Date: 07/29/2020 08:20 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526075

Date: 07/29/2020 08:20 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526075001	171831	EPA 522	651671	EPA 522	652021

Pace Analytical www.puceuss.com

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Regulatory Agency SAMPLE CONDITIONS State / Location WO#: 10526075 Page: Received on TEMP in C ક છ usylisi 10526075 15/51 DATE annika.asp@pacelabs.com, ACCEPTED BY ! AFFILIATION enexoib-4,1 SS3 wends N/A teeT sesylanA Other Methanol Preservatives N828203 Pace Project Manager. Pace Profile #: 39664, 4 HOBN Invoice Information:
Attention:
Company Name: ЮН PRINT Name of SAMPLER: DUN LOTSON HNO3 Pace Quote: Section C +280¢ Address: H16/20905 Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 1/23/20 SIGNATURE of SAMPLERY Water Gremlin Well Sampling - 2606-0017 TIME 2 1809 COLLECTED Project #. 13002 6 06 -19-01 RELINQUISHED BY! AFFILIATION G 7/23/20 START Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE Purchase Order# MATRIX CODE (see valid codes to left) Project Name: Section B Copy To: MATROX
Drinking Water
Waster
Waste Water
Product
SolifSolid
Oil
Wipe
Air
Other
Tissue 3 8161 ADDITIONAL COMMENTS One Character per box. (A-Z, 0-9 / , -). Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID 1601 Coust RP equired Client Information: impany: Wenck Associates, Inc. FURRING ıаіі: kjaworski@wenck.com ysis to be performed at Pace FL tple Plain, MN 55359 quested Due Date: NONE ITEM #

Page 9 of 12

(N/X)

Samples Samples

Sealed Cooler LVIVI

(pojsno

(N/A)

WESIGNET 2020

# Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.: ENV-FRM-MIN4-0150 Rev.00 Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -**Minneapolis** 

Sample Condition Upon Receipt  Client Name:  Wenck			Pr	WO#: 10526075
Courier: Fed Ex UPS Pace SpeeDee	U:		 ☑CI ial See Ex	CLICIT: WELLOW
Tracking Number:			al See Ex	ceptions
Custody Seal on Cooler/Box Present?	]No	Sea	als Intact	? ☑Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☑N/A
Packing Material: Bubble Wrap Bubble Ba	- ags	None	∏oth	
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489)		Type of I		
Did Samples Originate in West Virginia? Yes No	We	re All Co	ntainer '	Temps Taken? ☐Yes ☐No ☑N/A
Temp should be above freezing to 6°C Cooler Temp Rea	ad w/ten	np blank	: O	C Average Corrected Temp
Correction Factor: +rvc Cooler Temp Correcte	d w/tem	ıp blank	: O:	
USDA Regulated Soil: ( N/A, water sample/Other: Did samples originate in/a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check male for the control of	aps)? [	Yes	□No	Date/Initials of Person Examining Contents: 770 7 23 201  A, Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?
				COMMENTS:
Chain of Custody Present and Filled Out?	Yes	□No		1.
Chain of Custody Relinquished? Sampler Name and/or Signature on COC?	✓ Yes ✓ Yes	No □No	□n/a	3.
Samples Arrived within Hold Time?	Z Yes	□No	IN/A_	4.
Short Hold Time Analysis (<72 hr)?	Yes	⊠No		5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Nitrate Nitrite Orthophos Other
Rush Turn Around Time Requested?	Yes	□No		6.
Sufficient Volume?	Yes	□No		7.
Correct Containers Used?	∕ZYes	□No		8.
-Pace Containers Used? Containers Intact?	Yes Yes	No □No		9.
Field Filtered Volume Received for Dissolved Tests?			P1	
Is sufficient information available to reconcile the samples to the COC?	☐Yes ☐Yes	No No	<u></u> ØN/A	10. Is sediment visible in the dissolved container? Yes No  11. If no, write ID/ Date/Time on Container Below: See Exception
Matrix: Water Soil Oil Other				
All containers needing acid/base preservation have been checked?	∐Yes	∏No	/CN/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∏No	ØN/A	☐ NaOH ☐ HNO <sub>3</sub> ☐ H₂SO <sub>4</sub> ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PPAS	⊠Yes	∏No	□N/A	Positive for Res. Yes See Exception Chlorine? No pH Paper Lot#  Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
				0 14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes	□No	ØN/A	13. See Exception
Trip Blank Present?	Yes ☐Yes	No □No	[7]N/A [7]N/A	14.
Trip Blank Custody Seals Present?	☐Yes	□No_	ŪN/A	Pace Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Field Data Required? ☐Yes ☐No Date/Time:
Comments/Resolution:				
Project Manager Review:	m (	Dyr	5	Date: 7/24/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

> Page 10 of 12 Labeled by:

# Internal Transfer Chai

x Samples Pre-Logged into eCOC.

Workorder, 10526075

State Of Origin: MN	_	
Cert. Needed:	Yes	×
Owner Received Date:	ate:	7/23/

	Ntica	celabs.co	
	eAna	www.pa	
1	Fac		
1	1	1	

Results Requested By: 2020

Workorder Name: B002606-19-017 Water Gremlin

LAB USE ONLY 7/30/2020 Comments 1,4-Dioxane in DW by 522 (Pace FL) × Date/Time Preserved Containers Unpreserved Pace Analytical Ornond Beach 8 East Tower Circle Ornond Beach, FL 32174 Drinking Matrix Received By Phone (386)672-5668 10526075001 Lab ID Subcontract To 7/23/2009 13:09 Date/Time Date/Time Collect 7/261 Sample Type PS Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Released By Item | Sample ID Annika Asp 171831 Report To Suite 200 Transfers

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

6

Custody Seal

Cooler Temperature on Receipt 4.7 °C

Samples Intact of or

Received on Ice

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12



Document Name: Sample Condition Upon Receipt Form Document No : F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority: Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project #

Project Manager:

PM: SMM Que Date: 07/30/20 Date and Initials of person:

Date and mith	aro or p	CISOII.	
Examining conte	ents:	1/1	
_abel:	1	11-4	
Deliver:	/)	V	
oH. / /	V		

Client:	CLIENT: PACMIN		Deliver: pH:
Thermometer Used: 139	8 Date: - 7	<u>τς ω</u> Time:	1042 Initials: I.v -
State of Origin:	☐ For W	V projects, all containers ver	rified to <6 °C
Cooler #1 Temp.°C <u>Y. Vo</u> (Visual)			Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)			
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)			
Cooler #5 Temp.*C(Visual)			Samples on ice, cooling process has begu
Cooler #6 Temp. °C(Visual)			Samples on ice, cooling process has begu
Courier: Fed Ex UP		Commercial  Pace	☐ Other ☐ International Priority
Billing: Recipient 73	Sender □ Third Party  03 9479	□ Credit Card	□ Unknown
Custody Seal on Cooler/Box Present:	Yes No Seals	intact: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap		_	Total Distriction
Samples shorted to lab (if Yes, comple		Other	
ourispies shorted to lab (it les, comple	Shorted Date:	Comments:	ted Time: Qty:
Chain of Custody Present	Yes □ No □N/A	1128	
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name	COC Yes 🗆 No 🗆 N/A		
Samples Arrived within Hold Time	✓Yes □ No □N/A		1
Rush TAT requested on COC	□Yes □No □N/A		
Sufficient Volume	✓Yes □ No □N/A		
Correct Containers Used	ZYes □ No □N/A		
Containers Intact	Yes DNo DN/A		
Sample Labels match COC (sample IDs & date collection)	e/time of	Sample da	te on loc 15 2009
All containers needing acid/base preservation checked	Yes 🗆 No 🗆 N/A	Preservative	Preservation Information:
All Containers needing preservation are found compliance with EPA recommendation:	to be in	Lot #/Trace	#:
Exceptions: VOA, Coliform, T	✓Yes ☐ No ☐N/A OC, O&G, Carbamates	Date: Initials:	Time:
Headspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
Trip Blank Present:	□Yes □No □N/A		
Client Notification/ Resolution: Person Contacted:		Date/Time:	
Comments/ Resolution (use back for ac	lditional comments):		

Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526076001	513513	Drinking Water	07/23/20 14:03	07/23/20 15:25





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526076001	513513	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

Date: 07/29/2020 03:08 PM

Sample: 513513	Lab ID: 10	526076001	Collected: 07/23/2	20 14:03	Received: 07	/23/20 15:25	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Method	od: EPA	522			
	Pace Analytic	cal Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 18:27	7 123-91-1	
1,4-Dioxane-d8 (S)	87	%	70-130		07/27/20 10:45		_	

(612)607-1700



### **QUALITY CONTROL DATA**

EPA 522

Analysis Method:

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

QC Batch: 651671

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526076001

METHOD BLANK: 3543368 Matrix: Water

Associated Lab Samples: 10526076001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Date: 07/29/2020 03:08 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

Parameter	Units	10525818001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94 101	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526076

Date: 07/29/2020 03:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526076

Date: 07/29/2020 03:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526076001	513513	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical www.paceusscon

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Samples intact (V/V) ŏ SAMPLECONDITIONS JO#: 10526076 Page: Res Received on TEMP In C 12:8 7/19/20 DATE Signed: 7/23/20 DATE 10526076 annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION enexolb-4,1 SS3 teeT seavienA N/A Other Nethanol Preservatives Ne2S2O3 39664, 4 HOBN Pace Quote:
Pace Project Manager:
Pace Profile # 39664 Invoice Information: ЮН Attention: Company Name: Address: 15 X 3 ниоз **₱OSZH** 0905 なら Unpreserved PRINT Name of SAMPLER: Day SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 2/23/20 H16/20 SIGNATURE of SAMPLER: DATE Water Gremlin Well Sampling - 2606-0017 2 A S 1403 Rep COLLECTED Project Name: Water Gremlin Well Sampli Project #: R00266-19-017 RELINQUISHED BY LAFFILLATION TIME START Bottle Required Project Information: Report To: Kelly Jaworski U (G=GRAB C=COMP) Purchase Order#. (see valid codes to left) **MATRIX CODE** Section B Copy To: MATRIX
Drinking Water
Water
Waste Water
Product
Product
Oil
Wipe
Air
Other
Tissue かんとなる One Character per box. (A-Z, 0-9 /, -). Sample (ds must be unique ADDITIONAL COMMENTS rquested Due Date: 5 coy Sta 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. aple Plain, MN 55359 nail: kjaworski@wenck.com equired Client Information: 1321 sis to be performed at Pace FL 709 dress:

Page 9 of 12

C0019F Sealed

Custod

(N/X)



### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services Minneapolis

Page 10 of 12

### ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt	Client Name: Wenck			Pr	oject #:	W(	<b>)#:1</b>	05	<u> 26076</u>	
 Courier:	□Fed Ex □UPS		- DC	_     <b>/</b>  cı	:	PM:	AKA	D	ue Date: 07	7/30/20
counci.	Pace SpeeDee		ors ommercia	<i></i>		CLI	ENT: WEN	CK		;
Tracking Number:										
<b>Custody Seal on Cool</b>	er/Box Present? 🗹 Yes 🗀	]No	Sea	ls Intact	? ZYes		No <b>Biolo</b>	gical Ti	ssue Frozen? 🔲	Yes No N/A
Packing Material:	Bubble Wrap	gs 🗀	None	Oth	er:			Т	emp Blank?	√Yes □No
	T1(0461)		T <b>ype</b> of lo	ce: Ž	∬Wet □	]Blue	□None	□Þi	y  Melted	
Did Samples Originate	in West Virginia? Tyes No	We	re All Co	ntainer 1	Temps Take	n?	es 🗌 No 🛮	N/A		
Temp should be above free	zing to 6°C Cooler Temp Rea	ad w/ten	np blank:		15/1	.7	oc		ge Corrected Te	•
Correction Factor: +	Cooler Temp Correcte	d w/tem	p blank :	<u> </u>	5/1	7	°C	(no	temp blank only	/): See Exceptions 1 Container
<del>-</del>	N/A, water sample/Other:		)						Contents: <u>77</u>	7232el
	∕a quarantine zone within the Unit OK, OR, SC, TN, TX or VA (check ma			CA, FL, GA		•	iginate from a erto Rico)?		source (internation Yes No	ally, including
	es to either question, fill out a F	–	_				•			
								COMN	MENTS:	
Chain of Custody Present	and Filled Out?	✓Yes	□No		1.					
Chain of Custody Relinqui	ished?	✓Yes	□No		2.					
Sampler Name and/or Sig		∠Yes	□No	□N/A	3.		·			
Samples Arrived within H	old Time?	✓Yes	□No		4.					
Short Hold Time Analysis	(<72 hr)?	□Yes	ØNo						form/E coliBOD/orthophosOther	cBOD Hex Chrome
Rush Turn Around Time F	Requested?	Yes	□No		6.					1,000
Sufficient Volume?		∕∑Yes	□No		7.					
Correct Containers Used?		∠Yes	□No		8.					
-Pace Containers Used	?	Yes	No							
Containers Intact?		Yes	□No		9.					
Field Filtered Volume Rec		Yes	□No	<u></u> ∠ N/A						∕esNo
to the COC?	vailable to reconcile the samples	Yes	□No		11. if no, v	write ID,	/ Date/Time on	Contain	er Below:	See Exception
Matrix: Water Soil	JoilOtherd/base preservation have been			£	12 Compute	. #				
checked?	d/base preservation have been	Yes	∐No	N/A	12. Sample	₽#				
compliance with EPA reco	eservation are found to be in mmendation? H >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	Øn/a		NaOH	HN	O <sub>3</sub>	∐H₂SO₄	Zinc Acetate
	, TOC/DOC Oil and Grease,	∕ZÍYes	∏No	□N/A	Positive fo Chlorine?		<del></del>	рН Рар	er Lot#	See Exception
DRO/8015 (water) and Did	DXIII/PFAS				Res. Chlori	ne	0-6 Roll		0-6 Strip	0-14 Strip
Extra labels present on so Headspace in VOA Vials (g	il VOA or WIDRO containers?	∏Yes □Yes	□No □No	IŽN/A ŽN/A	13.		.1			See Exception
Trip Blank Present?		Yes	□No	Øŋ/A	14.					
Trip Blank Custody Seals P	resent?	☐Yes	□No	Ū⁄N/A	Pace	Trip Bl	ank Lot # (if p	urchase	d):	
CLIENT NOTIFI Person Contacted:	CATION/RESOLUTION	÷			Date/Tin	ne:	Field	d Data	Required? \[ \]Y	es 🔲 No
Comments/Resolution:					•					
			_							
Project Manag	- (-//-/-V-V	w(	Mp		-641-6	Date			1/2020	
	liscrepancy affecting North Carolina out of temp, incorrect containers).	compliand	e samples	s, a copy o	oi this form w	riii be se	ent to the Nort	n caroli	na DEHNK Certifica ¶	τιοη υπιce ( ι.e out of

[	×
7	Yes
Ξ	
Of Origin:	Needed:
State	Cert.

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es	

Pace Analytical \*

Owner Received Date:

Workorder Name: B002606-19-017 Water Gremlin

x Samples Pre-Logged into eCOC.

Workorder: 10526076

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200 Minneapolis, MN 55414

Phone (612)507-1700

7/30/2020

Results Requested By:

1,4-Dioxane in DW by 522 (Pace FL)

LAB USE ONLY

×

Drinking

10526076001 Lab ID

7/23/2009 14:03

PS

Date/Time Collect

Sample Type

Sample ID

tem

513513

Matrix

Samples Intact Y or

Received on Ice (Y) or

18/20 Date/Time

Received By

Date/Time 2/24

Released By

**Transfers** 

Comments

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Z

Custody Seal Y or

ပ

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009

Friday, July 24, 2020 12:05:31 PM

Page 11 of 12

Preserved Containers

Andreserved

Ormond Beach, FL 32174 Phone (386)672-5668



Project Manager Review:

Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised May 30, 2018 Issuing Authority Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project # Date and Initials of person: Project Manager: Examining contents: PM: SMM Due Date: 07/31/20 Label: Client: CLIENT: PACMIN Deliver: Thermometer Used: Time: 1042 Initials: State of Origin: For WV projects, all containers verified to ≤6 °C 01 Cooler #1 Temp. C Y. (Visual) (Correction Factor) \_ 4-7 (Actual) Samples on ice, cooling process has begun Cooler #2 Temp. C\_\_\_ \_\_\_\_(Visual) \_\_\_\_\_(Correction Factor) \_\_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #3 Temp.°C\_\_\_ \_(Visual) \_\_ \_\_(Correction Factor) (Actual) Samples on ice, cooling process has begun Cooler #4 Temp.°C\_ \_(Visual) \_\_(Correction Factor) \_\_\_ \_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #5 Temp. C\_\_\_ \_(Visual) \_\_\_\_(Correction Factor) \_\_\_ (Actual) Samples on ice, cooling process has begun \_(Visual) \_\_\_\_\_(Correction Factor) \_\_\_\_\_(Actual) Cooler #6 Temp.°C Samples on ice, cooling process has begun Fed Ex Ups Usps Client Commercial Pace Courier: Other ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority ☐ Other Billing: ☐ Recipient ☐ Third Party ☐ Credit Card □ Unknown Tracking # Custody Seal on Cooler/Box Present: Seals intact: Yes No ice: Wet Blue Dry None Packing Material: Bubble Wrap Bubble Bags □None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty: Comments: Chain of Custody Present □ No □N/A Chain of Custody Filled Out □ No □N/A Relinquished Signature & Sampler Name COC □ No □N/A Samples Arrived within Hold Time Yes No No N/A Rush TAT requested on COC □Yes □No □N/A Sufficient Volume □ No □N/A Pres Correct Containers Used Yes □ No □N/A Containers Intact □ No □N/A Sample Labels match COC (sample IDs & date/time of collection) No DN/A sample All containers needing acid/base preservation have been Preservation Information checked Yes No No N/A Preservative: All Containers needing preservation are found to be in Lot #/Trace #. compliance with EPA recommendation: No DNA Date: Exceptions; VOA, Coliform, TOC, O&G, Carbamates lleadspace in VOA Vials? ( >6mm): □ No □M/A Trip Blank Present: DNO DNA □Yes Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments): Sumple

Date





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

Lab ID	Sample ID	Matrix	Date Collected	Date Received		
10526994001	513513	Drinking Water	07/31/20 09:53	07/31/20 15:00		





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory	
10526994001	513513	EPA 522	СТВ	2	PASI-O	

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

Date: 08/11/2020 10:30 AM

Sample: 513513	Lab ID: 10	Lab ID: 10526994001		Collected: 07/31/20 09:53		/31/20 15:00	Matrix: Drinking Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522				
	Pace Analytic	al Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	08/07/20 17:05	08/10/20 18:09	123-91-1		
1,4-Dioxane-d8 (S)	99	%	70-130	1	08/07/20 17:05	08/10/20 18:00	)		



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

QC Batch: 655132

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526994001

METHOD BLANK: 3561521

Matrix: Water

Associated Lab Samples: 10526994001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/10/20 11:01 ug/L 117 1,4-Dioxane-d8 (S) % 70-130 08/10/20 11:01

LABORATORY CONTROL SAMPLE: 3561522

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.8 91 70-130 ug/L 1,4-Dioxane-d8 (S) 109 70-130 %

LABORATORY CONTROL SAMPLE: 3561523

Date: 08/11/2020 10:30 AM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .19J 95 50-150 1,4-Dioxane-d8 (S) % 109 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561524 3561525

		0550700000	MS	MSD		1405		1405	o/ <b>D</b>			
		35567038003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	32.8	2.1	2.1	38.2	37.6	255	224	70-130	2	20	M1
1,4-Dioxane-d8 (S)	%						107	110	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526994

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 08/11/2020 10:30 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526994

Date: 08/11/2020 10:30 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526994001	513513	EPA 522	655132	EPA 522	655489

# CHEIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Contion		2		
Required (	Required Client Information:	Required Project Information:	hvoles Information	,
Company:	l	Report To: Waterman, Shane	Attention:	Fage: 1 G
Address:		Copy To: Kelly Shurry	Company Name:	
Woodbury,	Woodbury, MN 55125		Address:	
Email: St	waterman@wenck.com	Purchase Order #:	Pace Quote:	CHRISTER
Phone:			Pace Project Manager: annika.asp@pacelabs.com.	State / I resitor
Requested	d Due Date: Std - Coat	Project #: 1300 2,606-19-017		
			Requested Analysis Filtered (YIN	ared (YM)
	MATRUX	COLLECTED	Preservatives	
	SAMPLE ID  One Character per box,  Whose  Water  Witer  Water  Water  Water  Witer  Witer  Witer  Water  Water  Water  Witer  Witer  Water  Wa	(G=GRAB C=C) (See valid code	1961 s	(WV) ənh
# M3TI	(A-Z, D-9 1, -) Ar Sample lds must be unique Tasue	A to	# OF CONTAIN  Methanol  Methanol	Residual Chid
-	513513		\ \ \ \ \	
2				
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*			71:#04   PO#: 16	一一・一・一・一・一・一・一・一・一・一・一・一・一・一・一・一・一・一・一
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	ADDITIONAL COMMENTS	PEUWOUSHED BY I AFFILIATION DATE	TIME ACCEPTED STY AFFECT DATE	THE SAMPLECONDITIONS
	1602 Gove LE Rd	1111-1424 DW 722	10 16:00 Lantantwent (Neal 1/20/20	5/5/102
		1 Van Law Twenck 1/2/12	20 (SEC) RHIMAGE HAVE	10 1500 4.3 Y N Y
Pa		SAMPLER NAME AND SIGNATURE	ATURE	
ge 9 of		PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	Day Lasson	EMP in C
12			thun the	3T 84 85 85 85 85 85 81 81

### ace Analvtical`

hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

### ENV-FRM-MIN4-0150 Rev.00

Sample Condition **Client Name:** Project #: WO#:10526994 **Upon Receipt** PM: AKA Due Date: 08/07/20 Courier: Fed Ex UPS USPS Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions Tracking Number: Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? ☐Yes ☐No ☐N/A Bubble Bags Packing Material: Bubble Wrap None Other: Temp Blank? Yes ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: □ Wet Type of ice: □Blue None □Drv Melted ☐ T4(0254) ☐ T5(0489) Did Samples Originate in West Virginia? 

Yes Were All Container Temps Taken? ☐Yes ☐No ☐M/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank:\_ 5.0 0C **Average Corrected Temp** (no temp blank only): See Exceptions 1.2, 4.8 Correction Factor: -U.2 Cooler Temp Corrected w/temp blank: OC. °C 1 Container USDA Regulated Soil: (N/A/water sample/Other: Date/Initials of Person Examining Contents: \_RHL 7/31/20 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? □No Hawaii and Puerto Rico)? ☐ Yes If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Chain of Custody Present and Filled Out? Ves □No 1. Chain of Custody Relinquished? **Ø**Yes □No 2. Sampler Name and/or Signature on COC? Yes □No □N/A 3. Samples Arrived within Hold Time? Ves □No ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome Short Hold Time Analysis (<72 hr)? Yes **□**₩6 ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other Rush Turn Around Time Requested? **No** Yes 6. Sufficient Volume? **E**Yes □No 7. Corřect Containers Used? Yes □No 8. -Pace Containers Used? Wes □No Continiers Intact? Yes □No 9. Field Filtered Volume Received for Dissolved Tests? /Z/N/A ☐Yes ∏No Is sediment visible in the dissolved container? Yes No is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? √es □No П Matrix: Water Soil Oil Other All containers needing acid/base preservation have been 12. Sample # ☐ Yes □No .₽M7A checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO₃ ☐|Yes □No ∐H<sub>2</sub>SO<sub>4</sub> Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception ØN/A Yes □No Exceptions: VOA, Coliform, TOC/DOC Oil and Grease. Chlorine? ]No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? DN/A DN/A 13. ☐ Yes □No See Exception Headspace in VOA Vials (greater than 6mm)? ☐ Yes □No Trip Blank Present? ØN/A Yes □No 14. Trip Blank Custody Seals Present? Yes □No **☑Ń/**A Pace Trip Blank Lot # (if purchased):\_ **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution: **Project Manager Review:** 8/3/2020 MMDate: Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Page 10 of 12 Labeled by: \_\_\_\_\_ CEC (3)

ace Analytical "

### Internal Transfer Chain of Cus

×	× Samples Pre-Logged into eCOC	into eCOC.	- m	35567499		ļ.	gin: MN	z		- Pace	Pace Analytical
Workord	Workorder: 10526994	Workorder N	Workorder Name: B002606-19-017 Water Gremlin	.19-017 Wate	Gremlin	ပိ င်	Cert. Needed: Ye	S	× No	o botoomad afinad	00001110
Report To			Subcontract To	t To					Requested Analysis	Analysis	- 811
Annika Asp Pace Analytical I 1700 Elm Street Suite 200 Minneapolis, MN Phone (612)607-	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace A 8 East Ormon Phone	Pace Analytical Ormond Be 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	Ormond Beach cle FL 32174 -5668	Preserved Containers	ne in DW hy 522 (Pace FL)				
Item Samı	Sample ID	Sample Type	Sample Collect Type Date/Time	Lab ID	Matrix	Other A 3.1 R	nexoid-+,1				LAB USE ONLY
1 513513	8	SA	7/31/2020 39:53	10526994001	Drinking	-	×				
w 4 ω											
Transfers	Released By	,	Date/Time	Received By	>		Date/Time			Comments	
7 2 8		a flac	97 1888	<i>3</i>	W SW	all	814120 1165 Tr3-An 4.7	115	4.7		
Cooler T	Cooler Temperature on Receipt	Receipt	°C Cust	Custody Seal Y	or N	- X	Received on Ice	Y or N		Samples Intact Y	or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#: 35567499

rm (SCUR)

Clien  Clien  Date: State of Origin:	Projec PM:		Date and Initials of person:  Examining contents:
Thermometer Used:	,	NT: PACMIN	
State of Origin:	Clien		
Cooler #1 Tomp. C. (Visual) C. (Correction Factor)   r	Thermometer Used:	Q Date: 8/4/20	1100 051
Cooler #2 Temp: C	State of Origin:	For WV projeg	ats, all containers verified to ≤6 °C
Cooler #2 Temp. C	Cooler #1 Temp. C (Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Cooler #3 Temp.*C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #4 Temp.*C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #5 Temp.*C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #6 Temp.*C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #6 Temp.*C (Visual)   Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #6 Temp.*C (Visual)   Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #6 Temp.*C (Visual)   Correction Factor)   Commercial   Pace   Other    Shipping Method:   First Overnight   Priority Overnight   Standard Overnight   Ground   International Priority    Other   Other   Standard Overnight   Ground   International Priority    Facking #   Sender   Third Party   Credit Card   Unknown    Tracking #   Sender   Third Party   Credit Card   Unknown	Cooler #2 Temp. C4 6 (Visual)	3. (Correction Factor)	7
Cooler #4 Temp. 'C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #5 Temp. 'C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Cooler #6 Temp. 'C (Visual) (Correction Factor) (Actual)   Samples on ice, cooling process has Courier: Fed Ex	Cooler #3 Temp.°C(Visual)	(Correction Factor)	
Cooler #5 Temp.*C			
Courier: Fed Ex  UPS USPS Client Commercial Pace Other Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority    Other			<del>-</del>
Shipping Method:   First Overnight   Priority Overnight   Standard Overnight   Ground   International Priority	Cooler #6 Temp.*C(Visual)	(Correction Factor)	(Actual) Samples on ice, cooling process has be
Shipping Method:   First Overnight   Priority Overnight   Standard Overnight   Ground   International Priority			F7.04
Billing:			citial — I ace — — — — — — — — — — — — — — — — — — —
Billing: Recipient Sender   Third Party   Credit Card   Unknown    TrackIng #		Priority Overnight ☐ Standard Over	rnight □ Ground □ International Priority
Custody Seal on Cooler/Box Present:		Sender	Cradit Card
Custody Seal on Cooler/Box Present:	,	to an a second s	
Packing Material: Bubble Wrap Bubble Bags None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty: Comments:    Comments:	Tracking #	1310 1823 8	670
Samples shorted to lab (If Yes, complete)  Shorted Date: Shorted Time: Qty: Shorted Time: Comments:  Chain of Custody Present	Custody Seal on Cooler/Box Present:	∐Yes □No Seals intact:	Yes No Ice: Wet Blue Dry None
Samples shorted to lab (If Yes, complete)  Shorted Date: Shorted Time: Qty:  Comments:  Chain of Custody Present  Chain of Custody Filled Out  Press No N/A  Relinquished Signature & Sampler Name COC  Press No N/A  Samples Arrived within Hold Time  Press No No N/A  Rush TAT requested on COC  Press No No N/A  Correct Containers Used  Press No No N/A  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  If Yes No No N/A  It containers needing acid/base preservation have been hecked.  It Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? (>6mm): Yes No No N/A  Stlient Notification/ Resolution:  Person Contacted: Date/Time:  Date/Time:	Packing Material: Bubble Wrap	3ubble Bags □None □Other_	
Chain of Custody Present  Chain of Custody Filled Out  Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Yes   No   N/A    Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  All containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Person Contacted:  Person Contacted:  Date/Time:  Comments:  No   N/A    Condition    Con		_	
Chain of Custody Present  Chain of Custody Filled Out  Present			
Chain of Custody Filled Out    Page   No   No   No   No	Chain of Custody Present	100	ments:
Relinquished Signature & Sampler Name COC    Yes			
Samples Arrived within Hold Time    Yes	Carrier and the second		
Rush TAT requested on COC  Sufficient Volume  Tyes No No N/A  Correct Containers Used  Tyes No No N/A  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? (>6mm):  Tyes No N/A  Client Notification/ Resolution:  Person Contacted:  Date/Time:  Date/Time:  Date/Time:		1	
Sufficient Volume	Rush TAT requested on COC		DUE 017
Correct Containers Used  Containers Intact Containers needing Lobels match COC (sample IDs & date/time of Collection)  Containers needing acid/base preservation have been Containers needing preservation are found to be in Containers needing preservation are found to be in Compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates Containers Intact Containers Int	Sufficient Volume		130- 317
Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Preservation Information:  Preservative:  Lot #/Trace #:  Date:  Time:  Initials:  Preservation Information:  Preservation:  Lot #/Trace #:  Date:  Initials:  Date:  Time:  Date:  Date/Time:  Date/Time:	Correct Containers Used		
Containers needing acid/base preservation have been checked.   Containers needing preservation are found to be in compliance with EPA recommendation:   Containers needing preservation are found to be in compliance with EPA recommendation:   Containers needing preservation are found to be in compliance with EPA recommendation:   Containers needing preservation are found to be in compliance with EPA recommendation:   Containers needing preservation are found to be in compliance with EPA recommendation:   Containers needing preservation information:   Containers needing preservation are found to be in containers needing preservative:   Containers needing preservative:   Containers needing preservation information:   Containers needing preservation information:   Containers needing preservative:   Containers needing preservation information:   Containers needing preservation information:   Containers needing preservative:   Containers needing preservation		□Wes □ No □N/A	
All Containers needing preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Tip Blank Present:    Ves   No   N/A			
Preservative: Lot #/Trace #: Date: Time: Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Preservative: Lot #/Trace #: Date: Initials:  Headspace in VOA Vials? ( >6mm):  Preservative: Lot #/Trace #: Date: Initials:  Date: Initials:  Date/Time:  Date/Time:	All containers needing acid/base preservation have	e been /	Preservation Information:
Compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates  Headspace in VOA Vials? ( >6mm):  Trip Blank Present:  Person Contacted:  Date:			Preservative:
Headspace in VOA Vials? ( >6mm):	compliance with EPA recommendation:	ÉYes □ No □N/A	Date:Time:
Person Contacted: Date/Time:			Initials;
Person Contacted: Date/Time:		11	
Person Contacted: Date/Time:	rip blank Present:	LIYES LINO UN/A	
Comments/ Resolution (use back for additional comments):	r erson contacted.		Date/ i me:
	Comments/ Resolution (use back for additi	ional comments):	
Project Manager Review: Date:	Project Manager Devices		





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

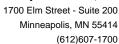
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525682001	520701	Drinking Water	07/21/20 10:20	07/21/20 14:40





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525682001	520701	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

Date: 07/29/2020 08:10 AM

Sample: 520701	Lab ID: 105	25682001	Collected: 07/21/2	20 10:20	Received: 07	/21/20 14:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	•		2 Preparation Metho	od: EPA	522			
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 14:42	2 123-91-1	
1,4-Dioxane-d8 (S)	95	%	70-130	1	07/27/20 10:45	07/28/20 14:42	2	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525682001

METHOD BLANK: 3543368

Date: 07/29/2020 08:10 AM

Matrix: Water

Associated Lab Samples: 10525682001

Blank Reporting
Parameter Units Result Limit

 Parameter
 Units
 Result
 Limit
 Analyzed

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/28/20 12:00

 1,4-Dioxane-d8 (S)
 %
 98
 70-130
 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

MS MSD 10525818001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 20.2 96 70-130 3 20 ug/L 20.4 19.6 19.0 94 1,4-Dioxane-d8 (S) 101 % 101 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/29/2020 08:10 AM





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525682

Date: 07/29/2020 08:10 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525682001	520701	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document

age 9 of 12

6 6 4 8 6 2 ITEM# sis to be performed at Pace FL equired Client Information: ple Plain, MN 55359 ested Due Date: kjaworski@wenck.com 52070 One Character per box
(A-Z, 0-9 /, -)
Sample Ids must be unique Wenck Associates, Inc. 1800 Pioneer Creek Center SAMPLE ID ADDITIONAL COMMENTS MATRIX
Dinking Water
Water
Water
Wasse Water
Product
SoilSolid
Oil
Wipe
Air
Other Project Name: Water Gremlin Well Sampling-Project # 500 2 606 - 19 - 017 Purchase Order #: Required Project Information: Copy To: Report To: Kelly Jaworski 명 전 중 및 인 만 P W 및 전 D C C RELINQUISHED BY / AFFILIATION MATRIX CODE (see valid codes to left) ক্ SAMPLE TYPE (G=GRAB C=COMP) 1/21/20 DATE work 0 START SAMPLER NAME AND SIGNATURE Ä SIGNATURE of SAMPLER PRINT Name of SAMPLER: COLLECTED Hed The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. 716/20 БVÐ 121/20 2606-0017 SAMPLE TEMP AT COLLECTION 10905 # OF CONTAINERS Company Name: Address: 101 TIME Pace Quote: Pace Profile # Pace Project Manager: Invoice Information: Attention: Section C Unpreserved H2SO4 Sexter HNO3 Preservatives HCI 39664 NaOH ACCEPTED BY / AFFILIATION Na2S2O3 annika.asp@pacelabs.com, Methanol ングで下 wend Analyses Test YIN DATE Signed 1/24 522 1,4-dioxane W0#:10525682 7/19/20 Helle かられている DATE म्प 12.0 TIME 4 TEMP in C Page: Received on SAMPLE CONDITIONS Residual Chlorine (Y/N) Regulatory Agency (Y/N) Custody Sealed Cooler Samples Intact (Y/N) ļς

### Pace Analytical\*

**Project Manager Review:** 

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -

	EI	NV-FRN	M-MIN4-	0150 Rev.00		Minneapolis	
Sample Condition Upon Receipt  Wench Associates	In		Pi	roject #:	WO#:	1052568	32
Courier: Fed Ex UPS Pace SpeeDe	U		ial See E	lient	PM: AKA CLIENT: W	Due Date: ENCK	07/28/20
Custody Seal on Cooler/Box Present? Yes	☑No	S.	eals Intac	□	kia Biala	-1-17:	lv 🗀 🗀
Packing Material: Bubble Wrap Bubble	•	]None	Otl	~	No Biolog	gical Tissue Frozen?	Yes
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)	9)	Type of	lce:	Wet □Blue	□None	Dry Melted	
Did Samples Originate in West Virginia? ☐Yes ☐No	> We	re All C	ontainer	Temps Taken? 🔲	res □No 💋	N/A	
Temp should be above freezing to 6°C Cooler Temp R  Correction Factor: 1000 Cooler Temp Correction	-			1.6, 1.2	°c	Average Corrected Ter (no temp blank only OC	
USDA Regulated Soil: ( N/A, water sample/Other:_ Did samples originate in a quarantine zone within the Un ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check in If Yes to either question, fill out a	maps)? [	Yes	□No	A, Did samples o Hawaii and Pu	riginate from a ferto Rico)?  include with S	· · · · · · · · · · · · · · · · · · ·	
Chair at County Day of Larry 10 and					· · · · · · · · · · · · · · · · · · ·	COMMENTS:	
Chain of Custody Present and Filled Out?	Z Yes	No		1.			
Chain of Custody Relinquished?	Ves	No		2.			
Sampler Name and/or Signature on COC?	Yes	□No	□N/A	3.			
Samples Arrived within Hold Time?  Short Hold Time Analysis (<72 hr)?	Yes □Yes	No				otal Coliform/E coli  BOD/c	BOD Hex Chrome
Rush Turn Around Time Requested?	Yes	□No		6. 5 day			2807
Sufficient Volume?	☑Yes	□No		7.			
Correct Containers Used?	□√es	□No	····	8.			*******
-Pace Containers Used?	Ves	□No		0.			
Containers Intact?	Yes	□No		9,		***************************************	
-A							
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	⊿ØN/A				es No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No		11. If no, write ID	/ Date/Time on (	Container Below:	See Exception
Matrix: Water Soil Oil Other	<del></del>						
All containers needing acid/base preservation have been checked?	∐Yes	□No	Ø⁄N/A	12. Sample #			
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	□Yes	□No	ØN/A	☐ NaOH	HNO	D <sub>3</sub> □H₂SO <sub>4</sub>	Zinc Acetate
times, 112504, 72pti, 1140ft 25 Sumue, NaOH212 Cyanide)			شمد	Positive for Res.			6aa E
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	∏No	√EN/A	Chlorine? [	Yes Nop   0-6 Roll	0-6 Strip	See Exception  0-14 Strip
						2 2 2 2 1 1 2	5 14 30 IP
Extra labels present on soil VOA or WIDRO containers?	∐Yes	□No	Dy/A	13.			See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	ZN/A	40.1			
Trip Blank Present?	☐Yes	□No	ØN/A	14.			
Trip Blank Custody Seals Present?	Yes	□No	☑Ñ/A	Pace Trip Bla	ank Lot # (if pu	rchased):	
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Kelly Jaworski, Dan Larso	·			Date/Time:	<b>Field</b> 7/22/20	Data Required? Ye	s  No
Comments/Resolution: Cleint informed sample	logged in pe	er the time	e listed on	the container.			
	/	1					·

Date: 7/22/20 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: \_\_\_\_\_\_MZ\_ Cage 10 of 12

### WO#: 35565171

Internal Transfer

X Samples Pre-Logged ir 36565171

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Suite 200 Minneapolis, MN 55414

Phone (612)607-1700

Workorder: 10525682

Phone (386)672-5668

Yes Owner Received Date: Cert. Needed:

State Of Origin: MN

7/21/2020

×

Pace Analytical

Results Requested By:

7/28/2020

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

AG1T

Drinking Matrix

10525682001

7/21/2020 10:20

PS

Lab ID

Date/Time Collect

Sample Type

Item | Sample ID

520701

×

LAB USE ONLY

Comments

Samples Intact (ٸor

Received on Ice (4) or

OILL OCIECIL

15 TMAIPAGE T349

Received By

Date/Time

Released By

Transfers

Date/Time

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Custody Seal (\*) or N

Cooler Temperature on Receipt 5, 8 °C

This chain of custody is considered complete as is since this information is available in the owner laboratory.

age	,	
ĭ		



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13 Document Revised May 30, 2018 Issuing Authority: Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project # 🚨	#:3556517	71	Date and Initials of person:
Project Manager: PM:	CMM Due Date:	07/28/20	Examining contents: The
	ENT: PACMIN		Label:
Client: CLIE	MI: PHONEN		Deliver:pH:
		1	p16,
Thermometer Used: 349	Date:	Time:_	III4 Initials: I-r
State of Origin:		V projects, all containers	verified to ≤6 °C
Cooler #1 Temp.°C_S(Visual)	O (Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C <u>( 1 1 (</u> Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Fx UPS	USPS Client C	Commoraid   Day	Other
Shipping Method: ☐ First Overnight	Priority Overnight   Standa	rd Overniaht □ Gr	ound □ International Priority
□ Other			D international Fillows
Billing: ☐ Recipient	Sender	☐ Credit Card	☐ Unknown
Tracking # 132	7523 285	54	
Custody Seal on Cooler/Box Present:	ŲYes □No Seals	intact: Yes	lo Ice: Wet Blue Dry None
Packing Material: Bubble Wrap DE		_	Dide Diy None
1		Other	
Samples shorted to lab (If Yes, complete)	Shorted Date:	s	horted Time: Qty:
		Comments:	
Chain of Custody Present	∑Yes □ No □N/A		
Chain of Custody Filled Out	'DYès □ No □N/A		
Relinquished Signature & Sampler Name CC	OC Yes □ No □N/A		
Samples Arrived within Hold Time	Yes 🗆 No 🗆 N/A		
Rush TAT requested on COC	Yes □ No □N/A	7178/20	
Sufficient Volume	Yes □ No □N/A		
Correct Containers Used	Yes No N/A		
Containers Intact	Yes No N/A		
Sample Labels match COC (sample IDs & date/tim collection)	NYes I No IN/A		
All containers needing acid/base preservation have checked.	e bear		Preservation Information:
All Containers needing preservation are found to b	PYes   No YHAMA	Preserva	
compliance with EPA recommendation:	BYes □ No SHATA	Date:	Time:
Exceptions: VOA, Coliform, TOC, Headspace in VOA Vials? ( >6mm):	5.74	Initials:_	
Trip Blank Present:	□Yes □ No NNA		
	2103 2100 ENWA		
Client Notification/ Resolution:  Person Contacted:		Date/Time	
		Date/Time:	<del></del>
Comments/ Resolution (use back for additi	ional comments):		
Project Manager Review:			Date
,			Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525689001	1611 GOOSE LK RD	Drinking Water	07/21/20 11:06	07/21/20 14:40





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525689001	1611 GOOSE LK RD	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

Date: 07/29/2020 08:09 AM

Sample: 1611 GOOSE LK RD	Lab ID: 105	25689001	Collected: 07/21/2	20 11:06	Received: 07	7/21/20 14:40 N	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach								
	Face Analytica	ai Seivices -	Official Beach					
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 13:53	123-91-1	



### **QUALITY CONTROL DATA**

EPA 522

99

70-130

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

1,4-Dioxane-d8 (S)

Date: 07/29/2020 08:09 AM

QC Batch: 651671

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Analysis Method:

Associated Lab Samples: 10525689001

METHOD BLANK: 3543368 Matrix: Water

%

Associated Lab Samples: 10525689001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) 98 70-130 07/28/20 12:00 %

LABORATORY CONTROL SAMPLE: 3543369 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372 MS MSD 10525818001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 20.2 96 70-130 3 20 ug/L 20.4 19.6 19.0 94 1,4-Dioxane-d8 (S) 101 % 101 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



**QUALIFIERS** 

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/29/2020 08:09 AM





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525689

Date: 07/29/2020 08:09 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525689001	1611 GOOSE LK RD	EPA 522	 651671	EPA 522	652021

Pace Analytical www.puteuss.com

## CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

(N/A) Samples SAMPLE CONDITIONS (N/A) ŏ Sealed Cooler Regulatory Agency MO#: 10525689 (N/A) Received on <u>ਮ</u> Page: Т. TEMP in C 1744 WYS TIME 2/19/20 (12:00) 1250 1260 DATE DATE Signed: / ZU/ 22 ACCEPTED BY JAFFILIATION lutench annika.asp@pacelabs.com, 722/ -ONE 522 1,4-dioxane teeT sesylanA N/A Other Methanol Preservatives ROSSSBN ИаОН 100 Pace Project Manager. Pace Profile #: 39664 ЮН Invoice Information: коин Company Name: Address: Pace Quote: ₽OSZH 2000 Attention: Unpreserved # ОГ СОИТАІИЕЯS SAMPLER NAME AND SIGNATURE 7/16/20 1/2/2 SAMPLE TEMP AT COLLECTION SIGNATURE of SAMPLER PRINT Name of SAMPLER Purchase Order #: Project Name: Water Gremlin Well Sampling - 2606-0017 DATE \$ S \$ P . . . Her COLLECTED ward RELINQUISHED BY (AFFILIATION TIME 7/2/2 START Required Project Information: Report To: Kelly Jaworski V (G=GRAB C=COMP) **34YT 3J9MA2** MATRIX CODE (see valid codes to left) Section B Copy To: Project #: CODE WY WY SI. SI. OI. WP AR AR MATRIX
Denixing Water
Water
Waste Water
Product
Soul/Sould
Oil
Wipe
Air
Other
Tissue StD 5 Day ADDITIONAL COMMENTS (A-Z, 0-9 /, -) Sample Ids must be unique 1800 Pioneer Creek Center One Character per box. SAMPLE ID **G**205 Wenck Associates, Inc. Email: kjaworski@wenck.com Required Client Information: maysis to be performed at Pace FL Maple Plain, MN 55359 NONE Requested Due Date: <u>ء</u> 7 2 9 1 8 7 က 2 Page 9 of 12 # M3TI N ø



hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - **Minneapolis** 

Page 10 of 12

Labeled by: \_

Sample Condition Upon Receipt Client Name:			Pı	roject #:	MC	)#:1(	052	25689	·
Wench Associates I  Courier: Fed Ex DUPS	U			lient	PM:	AKA	Du	e Date: 07	/28/20
Pace SpeeDe  Tracking Number:	e	ommerc	ial See Ex	cceptions		INT: WENC	.K		
Custody Seal on Cooler/Box Present?	ZNo	Se	als Intaci	t? 🔲Yes		io <b>Biolo</b>	gical Tis	sue Frozen? 🔲	Yes No N/A
Packing Material: Bubble Wrap Bubble B	ags	None	☐Otl	ner:			Te	emp Blank?	⊒Yes □No
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459 ☐ T4(0254) ☐ T5(0489)	) .	Type of	lce:	Wet [	Blue	□None	□Dry	/ Melted	
Did Samples Originate in West Virginia? ☐Yes 🔻 No	We	ere All Co	ontainer	Temps Take	en? ∐Y∈	es 🗌 No 💋	N/A		
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ter	mp blani	k:	1.6,	1.2	_°C	Averag	ge Corrected Te	mp
Correction Factor: 1000 Cooler Temp Correct	ed w/ten	np blank	:	1.6,	1.2	oc			): See Exceptions  1 Container
USDA Regulated Soil: ( N/A, water sample/Other:			)	Date/In	itials of	Person Exam	nining C	ontents: RH	4/21/20
Did samples originate in a quarantine zone within the Uni				A, Did sa	nples ori	iginate from a	foreign s	ource (internation	
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m		∐Yes d Co∷l Ct	∐No			erto Rico)?		Yes 🔲 No	
If Yes to either question, fill out a	Regulate	2 3011 Cr	iecklist (i	F-MN-Q-33	s) and ir	iciuae with s			
Chair of Contacts December of Sills 10, 12	-21			1			сомм	ENIS:	
Chain of Custody Present and Filled Out? Chain of Custody Relinquished?	Z Yes Z Yes	□No □No		1.					
Sampler Name and/or Signature on COC?	Yes		[ ]a./a	2.					
Samples Arrived within Hold Time?	Yes	No □No	□N/A	3. 4.	***************************************		<del></del>		
Short Hold Time Analysis (<72 hr)?	☐Yes	No		5.				orm/E coliBOD/c	BOD Hex Chrome
Rush Turn Around Time Requested?	Ýes	□No		6. 5 d		Interacte Charles	iteort	nopriosjotner	
Sufficient Volume?	✓Yes	□No		7.	<del>`Y</del>				
Correct Containers Used?	□xles	—— □No		8.		·······	***************************************	<del></del>	
-Pace Containers Used?	Zyles	□No		"					
Containers Intact?	Wes	□No		9.			,		
Field Filtered Volume Received for Dissolved Tests?	□Yes	□No	₽Ñ/A	10. Is se	diment	visible in the	dissolved	d container?	es 🗆 No
Is sufficient information available to reconcile the samples			عديابيد			Date/Time on			See Exception
to the COC?	Yes	□No			-	-			
Matrix: Water Soil Oil Other									
All containers needing acid/base preservation have been checked?	∐Yes	□No	ØN/A	12. Sampl	e #				
All containers needing preservation are found to be in compliance with EPA recommendation?	∐Yes	□No	□ N/A		NaOH	☐ HN	O <sub>3</sub>	∐H₂SO₄	Zinc Acetate
(HNO <sub>3</sub> , H₂SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)					_	_			
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	□Yes	□No	[[]N/A	Positive fo	r Res. 📙	_Yes			See Exception
DRO/8015 (water) and Dioxin/PFAS	Д		A	Chlorine? Res. Chlor	no l		pH Paper		0.14 State
				nes. Cilion	iie	0-6 Roll	'	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	□Yes	□No	ZN/A	13.					See Exception
Headspace in VOA Vials (greater than 6mm)?	Yes	□No	☑N/A						
Trip Blank Present? Trip Blank Custody Seals Present?	∐Yes	∏No	CIN/A	14.	Tuin Din	-l-1 -+ # /:£	الد ـ م مامس	١.	
CLIENT NOTIFICATION/RESOLUTION	Yes	No	[⊿î\/A	Pace	тпр вта	nk Lot # (if pu <b>Field</b>			s No
Person Contacted:				Date/Tin	ne:			·	
Comments/Resolution:									
Declare Manage 1	1	71			<u>.</u>				
Project Manager Review: Note: Whenever there is a discrepancy affecting North Carolina	complianc	e sample	s, a copy o	f this form w	Date: vill be ser	7/22/20 nt to the North	n Carolina	DEHNR Certificat	ion Office ( i.e out of

Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10525689

×

Subcontract To

Pace Analytical Minnesota 1700 Elm Street

Annika Asp Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

State Of Origin: MN Cert. Needed:

Yes

× No

Results Requested By: 7/21/2020

Pace Analytical

7/28/2020

Requested Analysis

Owner Received Date:

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668 Preserved Containers

1,4-Dioxane in DW by 522 (Pace FL)

VE3Z Matrix

Drinking 10525689001 Lab ID Collect

LAB USE ONLY

7/21/2020 11:06 Date/Time

Sample

Type S

1611 GOOSE LK RD

3

Item Sample ID

Received By Date/Time

Released By

**Transfers** 

215 TIMAPPACO T349

011105/25/17

Date/Time

ပ

Z Custody Seal (7) or

Z

Samples Intact V or

Comments

Received on Ice (Y) or Cooler Temperature on Receipt 5.8

\*\*\*In order to maintain client confidentiality, location/name of the samp!ing site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Wednesday, July 22, 2020 11:49:29 AM

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised May 30, 2018
Issuing Authority:
Pace Florida Quality Office

### WO#: 35565164

### **Project Project Manage**

Due Date: 07/28/20

Date and Initials of person: Examining contents: Thur

Client	T: PACMIN		Label: Deliver:	11001
Thermometer Used:	Date: 7 23	ພ Time:	pH:	In.
State of Origin:	□ For WV	projects, all containers ve		
Cooler #1 Temp. °C S (Visual)				acoling process has been been
Cooler #2 Temp.°C(Visual)				cooling process has begun
Cooler #3 Temp.°C(Visual)				cooling process has begun
Cooler #4 Temp.°C(Visual)		· ·		cooling process has begun
Cooler #5 Temp.°C(Visual)				cooling process has begun
Cooler #6 Temp.°C(Visual)		-	_	cooling process has begun
Shipping Method:	_	d Overnight ☐ Groun	Other	
Tracking # 1320	7523 285	4		
Custody Seal on Cooler/Box Present:	Yes No Seals in	ntact: Yes No	Ice: Wet Blue	Dry None
Packing Material: Bubble Wrap Bu		ther		
Samples shorted to lab (If Yes, complete)			orted Time:	Qty:
The same of the sa		Comments:		Gty
Chain of Custody Present	QYes □ No □N/A	comments.		
Chain of Custody Filled Out	Tayes   No   N/A			
Relinquished Signature & Sampler Name COO	7			
Samples Arrived within Hold Time	Yes □ No □N/A			
Rush TAT requested on COC	No □N/A	7128120		
Sufficient Volume	QYes □ No □N/A	11.212		
Correct Containers Used	OEYes ONO ON/A			
Containers Intact	Yes No No N/A			
Sample Labels match COC (sample IDs & date/time collection)	NYes I No IN/A		H	
All containers needing acid/base preservation have checked. All Containers needing preservation are found to be compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC,	TYES   NO TINIA	Preservativ Lot #/Trace Date: Initials:		
Headspace in VOA Vials? ( >6mm):	□Yes □ No ဩN/A			
Trip Blank Present:	□Yes □ No NNA			
Client Notification/ Resolution:  Person Contacted:  Comments/ Resolution (use back for addition)	onal comments):	Date/Time:		
Project Manage Project				
Project Manager Review:			Date:	





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

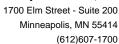
Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526688001	1624 Goose LK Rd	Drinking Water	07/29/20 15:55	07/29/20 16:39
10526688002	DUP072920	Drinking Water	07/29/20 00:00	07/29/20 16:39





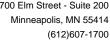
### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526688001	1624 Goose LK Rd	EPA 522	TM2	2	PASI-O
10526688002	DUP072920	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

Date: 08/05/2020 03:50 PM

Sample: 1624 Goose LK Rd	Lab ID: 105	26688001	Collected: 07/29/2	20 15:55	Received: 07	//29/20 16:39	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	od: EPA 52	22 Preparation Meth	od: EPA	522			
	Pace Analytica	Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	08/03/20 13:32	08/04/20 14:00	) 123-91-1	
1,4-Dioxane-d8 (S)	104	%	70-130	1	08/03/20 13:32	08/04/20 14:00	0	
Sample: DUP072920	Lab ID: 105	26688002	Collected: 07/29/2	20 00:00	Received: 07	7/29/20 16:39	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	od: EPA 52	22 Preparation Meth	od: EPA	522			
	Pace Analytica	Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 14:4	3 123-91-1	
1,4-Dioxane-d8 (S)	104	%	70-130	1	08/03/20 13:32	08/04/20 14:48	3	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

QC Batch: 653465

Analysis Method:

EPA 522

QC Batch Method: EPA 522 Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526688001, 10526688002

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

10526688001, 10526688002

Blank

Units Result Reporting Limit

Analyzed Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

ND 103

0.20 08/04/20 08:26 70-130 08/04/20 08:26

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

3552678

Spike Conc. Result

20

LCS % Rec % Rec Limits

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

Units

20.3

LCS

102 107 70-130

LABORATORY CONTROL SAMPLE:

Parameter

3552679

Spike

LCS

LCS

% Rec Limits

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L %

10526688001

Result

ND

Conc. 0.2 Result 0.21

% Rec 104

50-150 70-130

70-130

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3552886 MS

Spike

MSD

MS

3552887 MSD

MS

% Rec

Spike

108

MSD % Rec

Limits **RPD** 

Max RPD Qual 20

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

Units

ug/L %

Conc. Conc. 21.4

Result 21 22.2

Result 21.9 % Rec 104

111

104

70-130

110 70-130

Date: 08/05/2020 03:50 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526688

Date: 08/05/2020 03:50 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526688

Date: 08/05/2020 03:50 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526688001	1624 Goose LK Rd	EPA 522	653465	EPA 522	653821
10526688002	DUP072920	EPA 522	653465	EPA 522	653821

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Company of the Compan MO#:10526688 Page: Residual Chlorine (Y/V) 2.2 7/9/2 120 150 24/20/109 10526688 arrifica.asp@pacalabs.com LIENCA ensxolb-A,r SS3 OSHON JOHO WKM Ra lonariseM **Preservatives** Ne28203 Pace Quote:
Pace Project Manager:
Pace Profile #: 39884. HORN Section C Invoice information: HCI Attention: Company Name: Address: EONH H3804 7/16/20 0905 DevieserqnU shelication # OF CONTAINERS SAMPLEFFIAME AND SIGNATURE BAMPLE TEMP AT COLLECTION Purchasse Order #:
Project Name: Water Grentin Well Sampling - 2606-0017
Project # RNO ZLD | - 17 R/32/2 8 SKrE E COLLECTED विन्यव्यक्ति START Required Project Information: Report To: Kelly Jaworski Copy To: SAMPLE TYPE (G-GRAS C-COMP) MATRIX CODE (see valid codes to left) 20 Section B MATTER
Detailing Water
Protect
Protect
SollSolid
OR
When
Protect
OR
When
Other
Other One Character per box.
(A-Z, 0-91, -)
Sample Ms must be unique STD School 6 Gorde LK RS 1800 Pioneer Creek Center SAMPLE ID 027250900 Wenck Associates, Inc. talk kjawarski@wenck.com one: NONE rquested Due Date: SQSW/ quired Client beformation: ple Plain, MRN 55359 18It Ideacratei@we 

Page 9 of 13

Semples Intect (WW)

Sealed Cooler CUSIO

(N/A)

Received on

TEMP P C

DATE Signed: 7/19/20

GISON

No.

SIGNATURE of SAMPLER:

PRINT Name of SAMPLER:

60

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section B

Face Arrabitical www.mcressen

(VAV) Semples ŏ Custody Seeled Cooler Custody Residual Chlorine (Y/N) (N/A) Received on 7.7 TEMP IN C 1200 Stoto 124/20/109 2/19/2 to the gires DATE Signed: 7/09/20 amilka.asp@pacelabs.com, enaxolb-4,t SS8 OSHOW JOHO Well Ra lonarbell GISON Nezszos Pace Project Manager: Pace Profile #: 39684, 4 HOBN Involce Information; HCI Company Name: Address: Der HINOS Pace Quote: Section C HS804 H16/20 0905 beviesengnU 1634 Salesta viro S OF CONTAINERS SAME BETAKNIE AND SICKETURE SAMPLE TEMP AT COLLECTION SIGNATURE of SAMPLER: 02/32/1 Project Name: Water Grentlin Well Sampling - 2608-0017 PRINT Name of SAMPLER: END DANTE COLLECTED Robble Mes 16 such G-1/24/10 START Required Project Information: DATE Report To: Kelly Jeworski Copy To: Bur Ken SAMPLE TYPE (G-GRAS C-COMP) Purchase Order #: MATRIX CODE (see valid codes to left) 20 MANTRIX
Direkting Weter
Water
Water
Wester
Wester
Product
Golfschool
ON
Wigo
Abr
Chier
Tissue STD School One Character per box, (A-Z, 0-8 /, -) Sample Ids must be unique P South IX Co 1800 Planear Creek Center SAMPLE ID 029250 go mpeny: Wenck Associates, Inc. SOSIN kjeworski@wenck.com NONE squired Client Information: 624 nis to be performed at Pace Ft. quested Due Date: 180 Page 10 of 13

Pace Analytical Services - <b>siloqeanniM</b>	ENV-FRM-MIN4-0150 Rev.00
Page 1 of 1	Sample Condition Upon Receipt (SCUR) - MN
Document Revised: 27Mar2020	Document Name:



Page 1 of 13

this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of	s, a copy of	sə <sub>l</sub> dwes	eompliance	vote: Whenever there is a discrepancy affecting North Carolina of lold, incorrect preservative, out of temp, incorrect containers).
Date: 7/30/2020				Project Manager Review:
624 Goose LK RD.	1ate to 1	odn (1)	g sswbje	Comments/Resolution: Client requester
Date/Time: //30/2020 7:42				Person Contacted: DL
' oV Sey Sequired Stand blei7				CLIENT NOTIFICATION/RESOLUTION
Pace Trip Blank Lot # (if purchased):	A\N\X	ON	S∌从□	Trip Blank Custody Seals Present?
<u>ıt.</u>		ON□	Yes	Trip Blank Present?
13. See Exception	A\NX A\NX	∘N⊟	sey ☐	Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?
Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip				CMIT/IIIANIA DIIB (1220M) CASS (SAS
Positive for Res. Yes See Exception Ohlorine? Ohlorine?	∀/N <b>⊠</b>	oN□	Zey	Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS
,				(HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)
Dan ☐ HNo <sub>5</sub> ☐ Late Acetate	A/WZ	on 🗌	sə从□	Sompliance with EPA recommendation?
		- Innul		ni ad ot bnuot are noitevraeary gnibaan aranietnoo IIA
12. Sample #	A\N <b>⊠</b>	oN□	sə从□	All containers needing acid/base preservation have been checked?
				Matrix: ▼Water ☐Soil ☐Oil ☐Other
TT: It no, white ID/ Date/ lime on Container Below: See Exception		oN□	S∋√ <b>X</b>	to the COC?
10. Is sediment visible in the dissolved container? Yes No  11. If no, write ID/ Date/Time on Container Below: See Exception	∀/N <mark>⊠</mark>	oN 🗌		Field Filtered Volume Received for Dissolved Tests? Is sufficient information available to reconcile the samples
.6		ON	S9Y 🔀	· · · · · · · · · · · · · · · · · · ·
		ON	ZYes	-Pace Containers Used? Containers Intact?
		οN□	SƏ A 🔀	Correct Containers Used?
7		oN∐	X AGS	Sufficient Volume?
hbd S (LLS '9		oN□	X Kes	Rush Turn Around Time Requested?
5. Teecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Mitrate Mitrite Orthophos Other		on⊠	S∋Y∏	f(1d ST>) sizylsnA əmiT bloH thod2
7	U/NI I	ON.	59AFZ	Samples Arrived within Hold Time?
3.	∀/N <del>[</del> ]	oN□	Say ISS	Sampler Name and/or Signature on COC?
· T		ON	X Ves	Chain of Custody Present and Filled Out? Chain of Custody Relinquished?
соммеита:	<u> </u>			1
-MN-Q-338) and include with SCUR/COC paperwork.	ecklist (F-	Soil Ch	betaluges	It Yes to either question, fill out a F
Hawaii and Puerto Rico)?	oN □	SəY	(sde	ID; LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check ma
Date/Initials of Person Examining Contents: ///// 12 7-29-720	AĐ. FL. GA	() AL. AR.	:sətet2 bə	USDA Regulated Soil: ( \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
OC 1 Container	:	) plank	q w/tem	
γ γ (no temp blank only): ☐See Exceptions	)	_		60_
qməT bərrəge Corrected Temp	خد سے بندان کے ان			Temp should be above freezing to 6°C Cooler Temp Res
emps Taken? ☐ Yes ☐ No ☑ N/A	T 19nistn	oD IIA 9	Wer	ON Samples Originate in West Virginia? ☐ Yes
` Met ⊟Blue □None □Dry □Melted	(e: X	Type of !		T1(0461) T7(1336) T3(0459)  T4(0254) X 15(0489)
er: Temp Blank? 📈 Yes 🔲 No	9410[]	None	Sæ 🗌	Packing Material: Bubble Wrap
A\M Biological Tissue Frozen? Tyes Mo M\M \A\M	Stastal els	eəs	ON	Custody Seal on Cooler/Box Present?
	]			Tracking Number:
ent frest inchiok	al See Exc		loo  	Courier: Ted Ex Upsce Dee
DM: OKO DITE D=16: 08/0E/S0				
Dect #: MO# : 10256688	<b>51</b> 4		<del>)</del> الحد	Sample Condition Upon Receipt  Upon Receipt

FMT-ALL-C-002rev.00 24March2009

MO#: 35567057 Internal Transfer Chain of Cu

× Owner Received Date: rigin: MN Cert. Needed:

Workorder Name: B002606-19-017 Water Gremlin W

Samples Pre-Logged into eCOC,

Workorder: 10526688

Subcontract To

Pace Analytical

7/29/2020 å

8/5/2020

Results Requested By:

1,4-Dioxane in DW by 522 (Pace FL)

Pace Analytical Ormond Beach

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Phone (386)672-5668

Collect

NA2S2O3

Preserved Containers

Lab ID 7/29/2020 15:55 Date/Time Sample Type RQS

LAB USE ONLY

7/29/2020 00:00 RQS

16 Goose LK Rd

DUP072920

Sample ID

Item

10526688001 10526688002

×

က

Drinking Drinking Matrix

73×27

Received By Date/Time

Released By

**Transfers** 

W. RKB/Pace

Custody Seal (V) or N 5.6 °C

Received on Ice /Y Jor

Cooler Temperature on Receipt

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Samples Intact( Y ) or

Comments

7/31/20 11:30

Date/Time

This chain of custody is considered complete as is since this information is available in the owner laboratory.



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

form (SCUR)

Proje Project Mana

PM: ADC Due Date: 08/05/20

CLIENT: PACMIN

Date and Initials of person: Examining contents

Label:\_

Cile.			Deliver:
73110	7/7//	1.0	pH:
Thermometer Used: / ) 4 9	Date: 7/31/74	) Time: \( \( \lambda \)	115 Initials: <u>657+</u>
State of Origin:		jects, all containers veri	fied to ≤6 °C
Cooler #1 Temp. C 515 (Visual) + 511	(Correction Factor) 5	6(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice; cooling process has begu
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex UPS US	iPS ☐ Clieḥt → ☐ Com	mercial Pace	Other
Shipping Method:   First Overnight  Priori			d □ International Priority
☐ Other			
Billing: ☐ Recipient ☐ Sender	•	Credit Card	□ Unknown
Tracking # 1320 7523 476	0		
Custody Seal on Cooler/Box Present: Yes	☐No Seals inta	ct: ☐ Yes ☐ No	Ice Wet Blue Dry None
Packing Material: DBubble Wrap Bubble	Bags ☐None ☐ Othe	r	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Short	ted Time: Qty:
	Co	omments:	
Chain of Custody Present	Yes □ No □N/A	minents.	
Chain of Custody Filled Out	Yes No No NA		
Relinquished Signature & Sampler Name COC	Yes □ No □N/A		
Samples Arrived within Hold Time	ÁYes □ No □N/A		
Rush TAT requested on COC	□Yes ØNo □N/A		
Sufficient Volume	AYes □ No □N/A		
Correct Containers Used	ÓYes □ No □N/A	,	
Containers Intact	Yes No No N/A		
Sample Labels match COC (sample IDs & date/time of	/		
cultection) All containers needing acid/base preservation have been	☐Yes □ No □N/A		Preservation Information:
checked.  All Containers needing preservation are found to be in	ZYes □ No □N/A	Preservative	9:
compliance with EPA recommendation:	ZYes □ No □N/A	Lot #/Trace Date:	#:Time:
Exceptions: VOA, Coliform, TOC, O&G,	7	Initials:	
Headspace in VOA Vials? ( >6mm):	□Yes □ No ☑N/A		
Trip Blank Present:	□Yes □ No □N/A		
Client Notification/ Resolution:			
Person Contacted:		Date/Time:	
Comments/ Resolution (use back for additional	comments):		
77			
			· (p
Project Manager Review:			Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320

Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526218001	1633 Goose Lk Rd	Drinking Water	07/24/20 11:38	07/24/20 12:15
10526218002	Dup200724	Drinking Water	07/24/20 00:00	07/24/20 12:15





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526218001	1633 Goose Lk Rd	EPA 522	TM2	2	PASI-O
10526218002	Dup200724	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

Minneapolis, MN 55414 (612)607-1700



**ANALYTICAL RESULTS** 

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

Date: 07/31/2020 12:08 PM

Sample: 1633 Goose Lk Rd	Lab ID: 105	26218001	Collected: 07/24/2	20 11:38	Received: 07	/24/20 12:15 <b>I</b>	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	nod: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	l Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 10:20	123-91-1	
1,4-Dioxane-d8 (S)	86	%	70-130	1	07/29/20 12:26	07/30/20 10:20	)	
Sample: Dup200724	Lab ID: 105	26218002	Collected: 07/24/2	20 00:00	Received: 07	//24/20 12:15 <b>I</b>	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522								
	Pace Analytica	I Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 10:04	123-91-1	
Surrogates								

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

QC Batch: 652249

QC Batch Method: EPA 522 Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Result

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526218001, 10526218002

METHOD BLANK:

Parameter

Matrix: Water

Associated Lab Samples: 10526218001, 10526218002

Blank

Reporting Limit

Qualifiers Analyzed

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L %

Units

ND 88

0.20 07/30/20 08:29 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS Conc. Result

2

LCS % Rec % Rec Limits

70-130

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

1.9

LCS

94 98 70-130

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

3546522

Spike Conc.

0.2

Result

ND

LCS % Rec % Rec Limits

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

%

ND

Units

ug/L

50-150 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3546523 MS Spike

Conc.

2.1

MSD

2.1

3546524

1.7

98

97

MSD

% Rec

Max Qual

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

10526212001 Units Result

ug/L

%

Spike Conc.

MS Result

MSD Result

MS % Rec

1.8

80

90

% Rec Limits

**RPD** RPD 2 20

84 91

70-130 70-130

Date: 07/31/2020 12:08 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

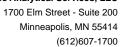
TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526218

Date: 07/31/2020 12:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526218

Date: 07/31/2020 12:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526218001	1633 Goose Lk Rd	EPA 522	652249	EPA 522	652612
10526218002	Dup200724	EPA 522	652249	EPA 522	652612

Pace Amalytical WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section C

Section B

ŏ Regulatory Agency SAMPLECONDITIONS Seliqmis ζ Custody Page: MO#: 10526218 Residual Chlorine (Y/V) **>** Received on TEMP In C 12:60 1.6 シャン アプラング (Mod) 1/6/20 DATE DATE Signed 7/24 annika.asp@pacelabs.com, wench ACCEPTED BY / AFFILIATION enexolb-4,1 SS3 N/A JaoT seavienA 答 Other Methanol (vanell Preservatives Nazszoa Pace Project Manager: Pace Profile #: 39664, 4 をひと HOBN Invoice Information:
Attention:
Company Name: HCI бОИН Pace Quote: +SSO4 Address: 1090ST Unpreserved 11:40 # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION Hic/20 104/20 SIGNATURE of SAMPLER: PRINT Name of SAMPLER: Purchase Order #.

Project Name: Water Gremlin Well Sampling - 2606-0017

Project #: \$\frac{1}{2} \frac{1}{2} \fra DATE 不不 COLLECTED INDUISHED BY / AFFILIATION. TIME のなる START Required Project Information: Report To: Kelly Jaworski (G=GRAB C=COMP) **34YT 3J9MA8** (see valid codes to left) **BOOD XINTAM** Copy To: SODE DW WY WW 『역옥좋중당 MATRIX
Drinking Water
Water
Waste Water
Product
Product
SoulSoid
Oil
Wipe
Air
Chher
Tissue 633 Gove LK Rd One Character per box. (A-Z, 0-91, -) Sample Ids must be unique 12002qu ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. aple Plain, MN 55359 nail: kjaworski@wenck.com quested Due Date: </ equired Client Information: rsis to be performed at Pace FL NONE Page 9 of 12

(N/A)

Sealed

(N/A)

3

## Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Page Analy

Labeled by:

Document Revised: 27Mar2020 Page 1 of 1

Pace Analytical Services - Minneapolis

Page 10 of 12

### ENV-FRM-MIN4-0150 Rev.00

Sample Condition Client Name:			Pro	ject #:	MO	#:10	52621	.8
Upon Receipt Wenck Associa	tes. I	inc.			PM: F		Due Date:	07/31/20
Courier: Fed Ex UPS  MUL 7-24- 26 Pace SpeeDee  Tracking Number: 1834-188	□us	PS	SCIII		• • •	NT: WENCK		
Custody Seal on Cooler/Box Present?	No	Sea	ls Intact?	Yes	⊠N	o <b>Biolog</b>	ical Tissue Froze	n? ∐Yes ∐No ⊠N/
Packing Material: Bubble Wrap Bubble Ba	ıgs 🗌	None	Oth	er:			Temp Blank	? ⊠Yes □No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of i	ce:	(Wet [	]Blue	□None	□Dry □Me	lted
Did Samples Originate in West Virginia? ☐Yes 💆 No	Wer	e All Co	ntainer T	emps Take	en? 🔲 Ye	s □No 🗖	N/A	
Temp should be above freezing to 6°C Cooler Temp Rea	ad w/tem	p blank	<u>: 2.7</u>	7,4.6		⁰℃	Average Correct	ed Temp
Correction Factor: 1700 Cooler Temp Correcte	d w/tem	p blank	2.7	, 4.0		oc	(no temp blan	k only): See Exception OC 11 Container
USDA Regulated Soil: ( 📈 N/A, water sample/Other:				Date/In	itials of	Person Exam	ining Contents: _	MK2 7-24.
Did samples originate in a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a I	aps)?	]Yes	∏No	Hawai	i and Pue	rto Rico)?	☐Yes ☐	rnationally, including ]No work
					-, and m		COMMENTS:	
Chain of Custody Present and Filled Out?	¥Yes	□No		1.		•		
Chain of Custody Relinquished?	Yes	□No		2.	*			
Sampler Name and/or Signature on COC?	Yes	□No	□N/A	3.				
Samples Arrived within Hold Time?	√Z Yes	□No		4.				
Short Hold Time Analysis (<72 hr)?	□Yes	™No					tal Coliform/E coli [ te	BOD/cBOD Hex Chrome
Rush Turn Around Time Requested?	✓¥Yes	·□No		6. 5				
Sufficient Volume?	✓¥Yes	□No		7.				
Correct Containers Used?	√⊈Yes	□No		8.				
-Pace Containers Used?	Yes	□No						·
Containers Intact?	Yes	□No		9.				
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	<b>⊠</b> N/A	10. Is s	ediment :	visible in the o	dissolved containe	r? Yes No
Is sufficient information available to reconcile the samples to the COC?	ĭ⊠Yes	□No	<del></del>	11. If no,	write ID/	Date/Time on 0	Container Below:	See Excepti
Matrix: ₩Water	<u> </u>							
All containers needing acid/base preservation have been checked?	□Yes	□No	† <mark>Æ</mark> ÍN/A	12. Samp	le#			
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	No	<b>⊠</b> n/a		] NaOH		D₃ ∏H₂SO	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∑¥Yes	∏No	□n/a	Positive f Chlorine? Res. Chlo	·		O-6 Strip	See Excepti
Extra labels present on soil VOA or WIDRO containers?	Yes	□No	45C) NI / A	13.		L		See Excepti
Headspace in VOA Vials (greater than 6mm)?	Yes	No	ØN/A N/A		•			
Trip Blank Present?	∐Yes	□No	<b>₩</b> N/A	14.				
Trip Blank Custody Seals Present?	☐Yes	□No	A/N/Z	Pac	e Trip Bla	ink Lot # (if pu	rchased):	- :
CLIENT NOTIFICATION/RESOLUTION Person Contacted:				Date/T	ime:	Field	Data Required?	Yes No
Comments/Resolution:								
* 0		<b>\</b>						
7-1-1	1/	1/0						

FMT-ALL-C-002rev.00 24March2009

# WO#: 35566010 Internal Transfer Chain of

× Samples Pre-Logged into eCOC.

ace Analytical ®

Of Origin: MN

							. Needed:	Yes	×		
Wo	Workorder: 10526218	Workorder N	Workorder Name: B002606-19-017	3-19-017 Wate	Water Gremlin		Owner Received Date:		7/24/2020	Results Requested By:	7/31/2020
Rep	Report To		Subcontract To	ct To					Requested Analysis	Analysis	
Anr Pac 170 Suit Min Pho	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace, 8 East Omool Phone	Pace Analytical Ormond Be 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	Ormond Beach ircle FL 32174 2-5668	Preserved Containers	Tainers (JR 936 G P3 C P366 FL)				
Item	Sample ID	Sample	Sample Collect Type Date/Time	Labro	Matrix	Paveseved (T)	nexoid-P,1				LAB USE ONLY
-	1633 Goose Lk Rd	PS	7/24/2020 11:38	10526218001	Drinking	1	×				
2	Dup200724	PS	7/24/2020 00:00	10526218002	Drinking	1	×				
8											
4											
5											
										Comments	
Trar	Transfers Released By	" 11	Date/Time	Received By	À		Date/Time				
-	4	a pare	A13400	1465	D	/Dace	715 P	(orto)			
7							イング	ANSWA.	5,		
က						N					
ပ္ပိ	Cooler Temperature on Receipt	Receipt	sno o.	Custody Seal	Y or N	Re	Received on Ice	Y or	z	Samples Intact Y	or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Form (SCUR)

Projec

WO#: 35566010

Date and Initials of person:

Project Manage CLIENT:	Due Date: PACMIN	07/31/20	Examining contents:  Label:  Deliver:  pH:
Thermometer Used: 1349	Date: 7/28/2	Time:	045 Initials: BPN
State of Origin:	☐ For WV	projects, all containers ve	rified to ≤6 °C
Cooler #1 Temp. C 3, U (Visual) +. [	(Correction Factor)	Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp. C5 (Visual)	(Correction Factor) <u></u>	(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Shipping Method: ☐ First Overnight ☐ Prior ☐ Other		l Overnight ☐ Groun	
Billing: ☐ Recipient ☐ Sender		. —	☐ Unknown
Tracking # \\32	o 7523	4033	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	Shorted Date:	Sho	rted Time: Qty:
Chain of Custody Present	ØYes □ No □N/A	ooniinents.	
Chain of Custody Filled Out	Øfes □ No □N/A		
Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Samples Arrived within Hold Time	ØYes □ No □N/A		
Rush TAT requested on COC	ØYes □ No □N/A	Due 71	/3\
Sufficient Volume	ØYes □ No □N/A		
Correct Containers Used	DYes □ No □N/A		
Containers Intact	EjYes 🗆 No 🗆 N/A	4	
Sample Labels match COC (sample IDs & date/time of collection)	Yes ONO ON/A		
All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  T(-  Exceptions: VOA, Coliform, TOC, Q&G, Colifo	DYes No No N/A No No N/A Carbamates	Preservativ Lot #/Trace Date: Initials:	
leadspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
rip Blank Present:	□Yes □ No □N/A		
Person Contacted:		Date/Time:	
omments/ Resolution (use back for additional o		ge, PH:	Page 12 of 1

Project Manager Review:

Date:





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526993001	1633 Goose Lk Rd	Drinking Water	07/31/20 10:07	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526993001	1633 Goose Lk Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

Date: 08/11/2020 10:32 AM

Sample: 1633 Goose Lk Rd	Lab ID: 10	526993001	Collected: 07/31/2	20 10:07	Received: 07	/31/20 15:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)	ND	ug/L	0.19	1	08/07/20 17:05	08/10/20 17:51	1 123-91-1	
Surrogates								

(612)607-1700



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin Project:

Pace Project No.: 10526993

QC Batch: 655132

QC Batch Method: EPA 522 Analysis Method:

EPA 522 Analysis Description:

Laboratory:

522 MSS 1,4 Dioxane

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526993001

METHOD BLANK: 3561521

Date: 08/11/2020 10:32 AM

Matrix: Water

Associated Lab Samples:

10526993001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 08/10/20 11:01 ug/L 117 1,4-Dioxane-d8 (S) % 70-130 08/10/20 11:01

LABORATORY CONTROL SAMPLE: 3561522

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.8 91 70-130 ug/L 1,4-Dioxane-d8 (S) 109 70-130 %

LABORATORY CONTROL SAMPLE: 3561523

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .19J 95 50-150 1,4-Dioxane-d8 (S) % 109 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561524 3561525

		35567038003	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	32.8	2.1	2.1	38.2	37.6	255 107	224 110	70-130 70-130	2	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526993

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 08/11/2020 10:32 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526993

Date: 08/11/2020 10:32 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526993001	1633 Goose Lk Rd	EPA 522	655132	EPA 522	655489

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B	Section C		
Dealine	went unormation:	F۱	hvoice information:	Page: 1	ď
Collingal ly.	Wenck Associates, Inc.		Attention:		
Address:	2080 Wooddale Drive	CODY TO: KENLY J GLUDYTH	Company Name:		
Woodbury,	Woodbury, MN 35125		Address:	Regulatory Agency	-6
No.		Juchase Urder ⊭.	Pace Quote:		
Phone:	Fax	Project Name: 522 Bisulfate vials	Pace Project Manager: annika.asp@pacelabs.com,	om, State Location	
Rednesied	requested the Date: NAT - S Cast	Project # 1500 2606-19-017			
			t	Requested Analysis Filtered (YN)	
	MATRIX	S M (fiel of a	Preservatives 2		
	SAMPLE ID	See velid code	1949) HO,	(N/A)	
# M31!	ter per box. -9 f, -) rust be unique	S & P & P & P & P & P & P & P & P & P &	SAMPLE TEMP AT PARTIES AND A DIOXENS 52203 Maihanol Maihanol Maihanol Maihanol Maihanol Maihanol	Sesidual Chlorine	
	1633 (500x LX Rd	C 7/2/120 1007	X		
		l	,		3
¥7				MO#:1052693	o i
<b>J</b> r.				· · · · · · · · · · · · · · · · · · ·	
9				E	
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80					
6					
9					
11					
12					
	ADDITIONAL COMMENTS	A NOWSHED BY LATELYTION DATE	TIME ACCEPTED BY MATRICATION	DATE THE	SAMPLECONDITIONS
		OCKEL ~ID TOND, 17/1/	0 16:00 San Land wenc	K 7/29/2/5/	
		Van Far ward 1/2/	20 RHL/Pue	73/10 1500 4.8 Y	<b>&gt;</b> -
Pag			TURE	+	
e 9 of		PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	Denlarson	EMP in C	asted soler (N) soler soler (N)
10			they be	76 H R 18 C	ini Se

# ace Analytical®

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

Page 10 of 10

Labeled by: CELO

Sample Condition Client Name: Upon Receipt			P	roject #:	W	O# : :	10	5269	93	
		JSPS Commerc	cial See E	Client	MATERIAL CONTRACTOR	: AKA IENT: WE	NCK	Due Date	: 08	(07/20
Tracking Number:										
Custody Seal on Cooler/Box Present?	ZΝο	Se	eals Intac	t?  Yes		Vo Biol	ogical 1	Tissue Frozen	? 🗀ye	es □No ☑Ñ/A
Packing Material: Bubble Wrap Bubble I	Bags [	None	□Ot	her:				Temp Blank?		-
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459		Type of			]Blue	□None		_		res []NO
Did Samples Originate in West Virginia? ☐Yes ☐	W	ere All C	ontainer	Temps Take	n?	es □No {	∃√i/A			
Temp should be above freezing to 6°C Cooler Temp R	ead w/te	mp blan	k:	1.4,5	-0	°C	T	age Correcte	d Temi	)
Correction Factor: Cooler Temp Correct	ed w/ter	np blani	<:	1.2, 4.	8	°c		o temp blank		See Exceptions 1 Container
USDA Regulated Soil: (	naps)?	Yes	□No	iA, Did sam Hawaii a	iples ori and Pue	iginate from a erto Rico)?	foreigr	source (intern	ationall	<u> 7/3   / </u> て y, including
								MENTS:		
Chain of Custody Present and Filled Out?	Yes	□No		1.						
Chain of Custody Relinquished?	Ves	□No		2.						
Sampler Name and/or Signature on COC?	✓Yes	□No	□N/A							
Samples Arrived within Hold Time?  Short Hold Time Analysis (<72 hr)?	Yes □Yes			4.	al Colifor	rm	Fotal Col	iform/E coli 🔲 E	3OD/cBC	DD Hex Chrome
Rush Turn Around Time Requested?		ØNo.			oidity	Nitrate Nit	rite 🔲 C	orthophos Ot	her	<del></del>
Sufficient Volume?	Yes EYes	<u>⊮</u> No □No		6. 7.						
Correct Containers Used?	Yes	□No		8.		· · · · · · · · · · · · · · · · · · ·				<del></del>
-Pace Containers Used?	∠ Yes	□No		0.		•				
Containers Intact?	Yes	□No	741.211	9.		TH		· · · · · · · · · · · · · · · · · · ·	· .	
Field Filtered Volume Received for Dissolved Tests?	∐Yes	□No	Z/N/A		liment	visible in the	dissolu	red container?		LIN-
Is sufficient information available to reconcile the samples to the COC?	₽₩es	□No	<del>(Alv</del> iv			Date/Time or			Yes	No See Exception
Matrix: Water Soil Oil Other All containers needing acid/base preservation have been checked?	Yes	□No	<b>₽</b> N7A	12. Sample	#				<del>-</del>	· :
All containers needing preservation are found to be in compliance with EPA-recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	.⊠Ñ/A		NaOH	□ни	IO <sub>3</sub>	∐H₂SO₄		Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	□Yes	□No	ØN/A	Positive for Chlorine? Res. Chlorin		Yes No 0-6 Roll	рН Рар	er Lot# 0-6 Strip		See Exception O-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No	N/A	13.			*****			See Exception
Trip Blank Present? Trip Blank Custody Seals Present?	☐Yes ☐Yes	□No □No □No	N/A N/A	14. Pace T	rip Blaı	nk Lot # (if p	urchase	ed):		Ц
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:				Date/Time				Required? [	Yes	□No
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers).	complianc	O J ce sample	, a copy o	of this form will	<b>Date:</b> I be sen	nt to the Nort	8/3, h Caroli	/2020 na DEHNR Certi	ification	Office ( i.e out of





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525684001	1636 Goose (KRI)	Drinking Water	07/21/20 14:07	07/21/20 14:40





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525684001	1636 Goose (KRI)	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

Date: 07/29/2020 08:10 AM

Sample: 1636 Goose (KRI)	Lab ID: 10	525684001	Collected: 07/21/2	20 14:07	Received: 07	//21/20 14:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	ethod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analyti	cal Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 13:05	5 123-91-1	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

QC Batch: 651671

51671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525684001

METHOD BLANK: 3543368

1,4-Dioxane (p-Dioxane)

Date: 07/29/2020 08:10 AM

1,4-Dioxane-d8 (S)

Matrix: Water

Associated Lab Samples: 10525684001

Parameter Units Blank Result

ug/L

%

 ND
 0.20
 0.7/28/20 12:00

 98
 70-130
 07/28/20 12:00

Reporting

LABORATORY CONTROL SAMPLE: 3543369 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

MS MSD 10525818001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 20.2 96 70-130 3 20 ug/L 20.4 19.6 19.0 94 1,4-Dioxane-d8 (S) 101 % 101 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/29/2020 08:10 AM





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525684

Date: 07/29/2020 08:10 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525684001	1636 Goose (KRI)	EPA 522	651671	EPA 522	652021

Pace Analytical www.paceuss.com

## CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT All references to the company of the Chain-of-Custody is a LEGAL DOCUMENT All references to the chain-of-Custody is a LEGAL DOCUM

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idual			HCI NaC		#0	SAN	福	TIME	DATE	_		2	1		
l Chlorine (Y.	<b>∖nalyses</b> ∜ 1,4-dioxane	2S2O3 hanol er		SO4	F CONTAINE	MPLE TEMP A				ATRIX CODE		Air Other	er pos soa. 9/,-) ast be unique	(A-Z, 0-9/, -) Sample lds must be unique	ITEM#
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Paramysis in Rected (V/N)	Y/N	ives	Preservatives			ION	COLLECTED	COLL				MATRIX Drinking Water			
oute) Location	Remineto								1	+					
	mika.asp@pacelabs.com,	18	39664, 4	Pace Profile #:	Pace	410	7-0	2606-17-0	2 60	13002	Project# [3	9	1 4 1 kg	quested Due Date:	queste
Regulatory				Pace Quote:	Pace	2100 3030	ampling	lin Well S	ter Gren	¥   ;	Project Name:	·O·	Fax	NONE	ione:
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The Criminal Constitution is a LEGAL DOCUMENT. All relevant fields must be completed accurately.	All relevant fields m	OMENT.	AL DOC	Salte	Islody I	יומווי-טו-'כנ	: 2				Section B	to.			ction A
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# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

	2  2  ADDITIONAL COMMENTS  Pais to be performed at Pace FL	9 8 7 0 W	SAMPLE ID  One Character per box. (A-Z, 0-91, -)  Sample Ids must be unique  1636 Goose Lk Rd	xction A xquired Cilent Information: xripany: Wenck Associates, Inc. Idress: 1800 Pioneer Creek Center ple Plain, MN 55359 Tall: kjaworski@wenck.com one: NONE Fax cquested Due Date: Child Tall ANTR Dentil Water
SAMPLER MANE PRINT Name SIGNATURE	PRELINGUISHER BY/AFFLUATION DON'TE		MATRIX CODE (see valid of SAMPLE TYPE (G-GRAB DATE TIME DATE TIME DATE TIME	tion B  puired Project Information:  cont To: Kelly Jaworski  y To:  whater Gremlin Well Sampling - 2806-0017  ject Name: Water Gremlin Well Sampling - 2806-0017  ject #: 1500 2 (500 - 19 - 0) 7  ject #: 1500 2 (500 - 19 - 0) 7  code #: 6 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
410 M 3-121	OPOR DA X / Lear L		SAMPLE TEMP AT COLLECT  # OF CONTAINERS  Unpreserved  H2SO4  HNO3  HCI  NaOH  Na2S2O3  Methanol  Other  Analyses Test	Section C Invoice Information: Attention: Company Name: Address: Pace Project Manager: Pace Profile #: 39664, 4  Preservatives  Preservatives
1140 F			Residual Chlorine (Y/N)	Page: 1 Of 1  Regulatory Agency 1: 2  Fillescod (VM): State / 10-adenix agency 1: 2  Fillescod (VM): State / 10-adenix agency 1: 2  Fillescod (VM): Agency 1: 2

### Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Labeled by: \_\_\_\_\_ MWZ Page 11 of 13

Pace Analytical Services -Minneapolis

Sample Condition C Upon Receipt	lient Name:			Pi	oject #:	W	<b>0#</b> ::	10	52568	<b>34</b>
=	Wenck Associates I  Fed Ex	□u			lient		: AKA LENT: WE	-NCK	Due Date:	07/28/20
Tracking Number:		·	ommerc	ial See Ex	ceptions			-,,,,,,		
<b>Custody Seal on Cooler</b>	/Box Present? Yes	ľΝο	Se	als Intaci	?	Mi	Biolo	gical Ti	ssue Frozen? [	□Yes □No □N/A
Packing Material:	Bubble Wrap Bubble Ba	ags [	None	□Otl	ner:			T	emp Blank?	☑Yes ☐No
Thermometer:	1(0461) □ T2(1336) □T3(0459) 4(0254) ☑ T5(0489)		Type of	lce:	ZWet □	]Blue	□None	□D	ry Melted	
Did Samples Originate in	West Virginia? ☐Yes ØNo				Temps Take	n? ∐Yes	□No d2	ĪN/A		
Temp should be above freezin	g to 6°C Cooler Temp Rea	ad w/ten	np blani	c:	1.6,	1.2	oc		ge Corrected T	emp ly): See Exceptions
Correction Factor: 104		d w/tem	p blank	:	1.6,	1,2	ºc	(110		1 Container
Did samples originate in a l ID, LA. MS, NC, NM, NY, OR	N/A water sample/Other: quarantine zone within the Unit (, OR, SC, TN, TX or VA (check m to either question, fill out a F	aps)? [	Yes	□No	A, Did san Hawaii	nples orig	inate from a to Rico)?	foreign SCUR/C	source (internation Yes No COC paperwork	· ·
Chair of Custody December	-d Fill-d O.42	-8/						COMN	MENTS:	
Chain of Custody Present ar Chain of Custody Relinquish		Z Yes Yes	No □No		1.			· · ·	<del></del>	
Sampler Name and/or Signa	ture on COC?	Yes	□No	□N/A	3.					
Samples Arrived within Hold	Time?	Yes	□No		4.					
Short Hold Time Analysis (<	72 hr)?	∐Yes	ΔNo						form/E coli BOD thophos Other	O/cBOD Hex Chrome
Rush Turn Around Time Rec	quested?	√Yes	□No		6. 5 da	·y				
Sufficient Volume?		Yes	□No		7.	<u>′</u>			·	
Correct Containers Used?		□\ves	□No		8.					
-Pace Containers Used? Containers Intact?		□ ¥es ¥es	□No □No		9.		<del></del>			
Field Filtered Volume Receiv	red for Dissolved Tests?	Yes		ø <b>∑</b> N/A	ļ ————			191		
	ilable to reconcile the samples	Yes	□No	SKIN/A			ate/Time on			Yes No See Exception
Matrix: ☐Water ☐Soil ☐O										
All containers needing acid/l checked?	base preservation have been	∐Yes	∏No	ØN/A	12. Sample	#				
All containers needing prese compliance with EPA recomm (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH 2		∐Yes	□No	ØN/A		NaOH	□HN	IO <sub>3</sub>	∐H₂SO₄	Zinc Acetate
Exceptions: VOA, Coliform, T DRO/8015 (water) and Dioxii	•	∐Yes	□No	☑N/A	Positive for Chlorine? Res. Chlori		Yes No 0-6 Roll	pH Pape	er Lot# 0-6 Strip	See Exception  O-14 Strip
Extra labels present on soil V	OA or WIDRO containers?	□Yes	□No	ZN/A	13.	<u> </u>				See Exception
Headspace in VOA Vials (grea	ater than 6mm)?	Yes	□No	☑N/A		····				
Trip Blank Present? Trip Blank Custody Seals Pres	sent?	□Yes □Yes	∏No ∏No	ØN/A ØN/A	14. Pace	Trip Blan	k Lot # (if pu	urchase	d):	
CLIENT NOTIFICA Person Contacted:	TION/RESOLUTION		<del>. —</del> —.	<del></del>				····		Yes No
Comments/Resolution:	Sample ID updated per clie	ent email a	and revise	d COC.	Date/Tim	ie:	****			70
,	1111 1		1							
Project Manager		10	7			Date:	7/22	/20		
Note: Whenever there is a disci hold, incorrect preservative, out	repancy affecting North Carolina of temp, incorrect containers).	omplianc	e sample	s, a copy o	of this form w	ill be sent	to the Nort	h Carolin	a DEHNR Certific	ation Office ( i.e out of

### MO#: 35565162

### Internal Transfer Chain X Samples Pre-Logged into eCOC.

Results Requested By: Requested Analysis 7/21/2020 Owner Received Date: Workorder Name: B002606-19-017 Water Gremlin Pace Analytical Ormand Beach Subcontract To Workorder: 10525684

Yes State Of Origin: MN Cert. Needed:

×

Pace Analytical

7/28/2020

1,4-Dioxane in DW by 522 (Pace FL)

Phone (386)672-5668

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414

Phone (612)607-1700

Preserved Containers

Matrix Lab ID Date/Time Collect Sample Type

EGFP EN

LAB USE ONLY

7/21/2020 14:07 PS

10525684001 Item | Sample ID

×

Drinking 1636 Goose (KRI)

Received By Date/Time Released By

134 249 TIMA Pace **Transfers** 

7/23/20110

Date/Time

Received on Ice (Y) or Custody Seal (Y) or N Cooler Temperature on Receipt 5.3 °C

Samples Intact (Y) or

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Wednesday, July 22, 2020 11:32:56 AM



Thermometer Used:

Cooler #2 Temp.°C\_\_\_\_\_\_\_\_\_

Cooler #3 Temp.°C

Cooler #4 Temp.°C\_

Cooler #5 Temp.°C\_\_

Cooler #6 Temp.°C

Shipping Method:

Billing:

State of Origin:

Cooler #1 Temp. °C S 1 (Visual)

Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority

UPS USPS Client Commercial Pace

Project # **Project Manager:** 

(Visual)

(Visual)

(Visual)

(Visual)

☐ First Overnight

☐ Other\_

☐ Recipient

\_(Visual) \_\_

Sender

Client:

PM: SMM Due Date: 07/28/20

CLIENT: PACMIN

F-FL-C-007 TeV, 13		Pace Florida Quality Office
10#:355651	62 SCU	R) *
1: SMM Due Date .IENT: PACMIN	: 07/28/20	Date and Initials of person:  Examining contents: The Contents of person:  Label: Deliver: De
3 Date:	₩ Time: [(15	pH:
For W	projects, all containers verified to	o ≤6 °C
(Correction Factor)		Samples on ice, cooling process has begin
(Correction Factor)	1-5 (Actual)	Samples on ice, cooling process has begin
(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
USPS Client C	ommercial Pace	☐ Other
Priority Overnight □ Standar		☐ International Priority
Sender		Inknown
Yes ∏No Seals	ntact: Yes No	Ice: Wet Blue Dry None
Bubble Bags None Co	sther Shorted Ti	me: Qty:
	Comments:	
∑Yes □ No □N/A		
Tayes 🗆 No 🗆 N/A		
OC Yes No N/A		
Yes 🗆 No 🗆 N/A	Manda a	
Yes 🗆 No 🗆 N/A	7/28/20	
QYes   No   N/A		
Yes No N/A		
me of N		>8
ve beta		
ZYes □ Ne THA	Preservative:	rvation Information:
be Ves I NO DINIA	Lot #/Trace #: Date:	Time;
, O&G, Carbamates	Initials;	1 III I G
□Yes □ No N/A		
□Yes □ No NA		
	Date/Time:	
tional comments):		

Tracking # Custody Seal on Cooler/Box Present: □No Seals intact: Yes No Packing Material: Bubble Wrap Bubble Bags None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorte Comments: Chain of Custody Present ☑Yes ☐ No ☐N/A Chain of Custody Filled Out TYPES INO IN/A Relinquished Signature & Sampler Name COC NYes No No N/A Samples Arrived within Hold Time NYes □ No □N/A Rush TAT requested on COC NYes □ No □N/A Sufficient Volume **JYes** □ No □N/A Correct Containers Used ☐Yes ☐ No ☐N/A Containers Intact 1 **S**[Yes □ No □N/A Sample Labels match COC (sample IDs & date/time of collection) Yes □ No □N/A All containers needing acid/base preservation have been □ Ne TONA Preservative All Containers needing preservation are found to be Lot #/Trace # compliance with EPA recommendation: Date: Exceptions: VOA, Coliform, TOC, O&G, Carbamates Initials: Headspace in VOA Vials? (>6mm): □Yes □ No □N/A Trip Blank Present: □Yes ONO DINA Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments): Project Manager Review: Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525821001	823988	Drinking Water	07/22/20 08:36	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525821001	823988	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

Date: 07/29/2020 08:09 AM

Sample: 823988	Lab ID: 1	0525821001	Collected: 07/22/2	20 08:36	Received: 07	/22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analyti	ical Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 15:47	7 123-91-1	
1,4-Dioxane-d8 (S)	99	%	70-130		07/27/20 10:45		-	



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin W Project:

Pace Project No.: 10525821

QC Batch Method:

QC Batch:

651671

EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

10525821001 Associated Lab Samples:

METHOD BLANK: 3543368 Matrix: Water

Associated Lab Samples: 10525821001

Parameter

Blank Reporting Result

Limit

Qualifiers Analyzed

1,4-Dioxane (p-Dioxane) ug/L 1,4-Dioxane-d8 (S)

ND 98

0.20 07/28/20 12:00 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

> Parameter Units

LCS Result 18.6

LCS % Rec 93

99

% Rec Limits Qualifiers

70-130 70-130

LABORATORY CONTROL SAMPLE: 3543370

Parameter 1,4-Dioxane (p-Dioxane)

Parameter

Spike Conc. 0.2

20.4

Spike

Conc.

20

LCS % Rec 0.20

% Rec Limits

Qualifiers

1,4-Dioxane-d8 (S)

1,4-Dioxane (p-Dioxane)

1,4-Dioxane-d8 (S)

%

Units

%

ug/L

%

Units

ug/L

102 50-150 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3543371 MS

LCS

Result

MSD Spike

MSD

MS % Rec

MSD % Rec

% Rec Max Limits **RPD** RPD

Qual

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L %

Result Conc. ND

10525818001

Spike Conc.

MS Result 20.2 19.6

3543372

Result 19.0

96

101

70-130 94 101 70-130

3 20

Date: 07/29/2020 08:09 AM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525821

Date: 07/29/2020 08:09 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525821

Date: 07/29/2020 08:09 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525821001	823988	EPA 522	651671	EPA 522	652021

Pace Analytical www.paceusecom

Section B

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ (N/A) ntact 0 SAMPLE CONDITIONS Seinples MO#: 10525821 Sealed 2 poisno Page: Residual Chlorine (Y/V) (N/A) 7 Received on Sign d LEMP IN C 3,5 TIME 400 10525821 Pizzes 1.69/2 DATE DATE Signed | 22/20 annika.asp@pacelabs.com, BY / AFFILIATION 622 1,4-dioxane ところ sack N/A tseT sesylanA Other Methanol Preservatives Ne2S2O3 Pace Project Manager. Pace Profile #: 39664, 4 HOBN Invoice Information:
Attention:
Company Name: HCI ниоз Pace Quote: HSSO Section C Address: TIME J0905 7/2120 WOON Unpreserved 906 # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION Hie/22 7/22/2 SIGNATURE OF SAMPLERS PRINT Name of SAMPLER Water Gremlin Well Sampling - 2606-0017 DATE 720 2 COLLECTED RELINQUISHED BY LAFFILLATION TIME 7/2/12 Project Name: Water Gremlin Well Project # \$ 002.005 A West START Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) A SAMPLE TYPE Purchase Order # MATRIX CODE (see valid codes to left) Copy To: MATRIX
Dinking Water
Waste Water
Waste Weter
Product
SoulSoid
Oil
Wipe
Afr
Cother
Tissue 3960 Scheunemen One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID 3988 Wenck Associates, Inc. nail: kjaworski@wenck.com quired Client Information: rsis to be performed at Pace FL aple Plain, MN 55359 NONE quested Due Date: کی á Page 9 of 12 # WBTI

10 and 21 2 2000 Holonous 122 to the first and the first a		<b>4</b> 1		old, incorrect preservative, out of temp, incorrect containers).
Date: 7/22/2020 This form will be sent to the North Carolina DEHMR Certification Office ( i.e. out of	Copy of	'səldwes	COMPliance	Project Manager Review: ote: Whenever there is a discrepancy affecting North Carolina o
				*:
				omments/Resolution:
Date/Time:				erson Contacted:
Field Data Required? Yes No				CLIENT NOTIFICATION/RESOLUTION
Pace Trip Blank Lot # (if purchased):	A\N 🔀	ON		rip Blank Custody Seals Present?
וֹל'	: A/N[Z	ON		rip Blank Present?
LIONGOVY 220	A\N	ON	S∋V ☐	Feadspace in VOA Vials (greater than 6mm)?
L3. See Exception	, V/N/Z	ON	sə从□	rtra labels present on soil VOA or WIDRO containers?
Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip				CATT/INMOIG bills (1538W) C100 (OVI
Chlorine?		- on□	√es	xceptions: VOA, Coliform, TOC/DOC Oil and Grease, NO8015 (water) and Dioxin/PFAS
Positive for Res. Yes	ر ا ا		~_	
				HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)
91859-J DISON DIALON TINOS SINC ACECRATE	∀/N <b>⊠</b>	<sup>7</sup> on□		ompliance with EPA recommendation?
ONN HOUNT			•	ni ed ot bnuot are servation are found to be in
				<b>у</b> өскөд <u>э</u>
12. Sample #	∀/N <del>j</del> Z	→ oN	S∌从□	Il containers needing acid/base preservation have been
· <b>*</b>				Matrix: ▼Water
		oN□	S A K	о дие сосз
11. If no, write ID/ Date/Time on Container Below: See Exception				sufficient information available to reconcile the samples
10. Is sediment visible in the dissolved container? Yes No	A\N 🔀	oN□	S∋Y□	ield Filtered Volume Received for Dissolved Tests?
-6		oN□	S∌Y⊠	Sprainers Intact?
	.	oN.	SƏ A	-Pace Containers Useds
'8		oN□	Səy	Correct Containers Used?
L 1		ON	sə, ⊠	ufficient Volume?
TAT WAY 2.0	<u>.</u>	oN	S∋Y 🔀	Spatseups AmiT bruorA muT days
5. Teecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Witrate Orthophos Other		on⊠	∏,K€2	S(14 ST>) sizylsnA əmiT bloH frodi
7		oN□	SƏATZ	SəmiT bloH nirhiw bəvirrA zəlqmbi
		ON□	X Ves	Sampler Name and/or Signature on COC?
		ON	X Yes	Chain of Custody Relinquished?
τ'		ON 🗌	S A K	Chain of Custody Present and Filled Out?
COMMENTS:			·············	1
NN-Q-338) and include with SCUR/COC paperwork.	CKIISE (F-N	Soil Che	pereinge	IT TES TO EITHER QUESTION, TIII OUT B K
Hawaii and Puerto Rico)?YesNo	ON	Yes		ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check ma
Did samples originate from a foreign source (internationally, including	, FL, GA,	אר, אף, כי	setates: A	Did samples originate in a quarantine zone within the Unite
Date/Initials of Person Examining Contents:				USDA Regulated Soil: (X) N/A, water sample/Other:
2, 5 C 12 Container	97	piank:	d w/temp	Correction Factor: Cooler Temp Corrected
sestessed seal (Value Aneld amet on)		י אומוואי	dusa /w. n	
	(0			
mps Taken?	aT Janiet	no) IIA	Were	Did Samples Originate in West Virginia?
bett ☐ None ☐ Dylted ☐ Yet ☐ Bile	^ <b>⊠</b> ( "	ype of Ice	T	Thermometer:       ☐ T1(0451) ☐ T2(0489)         ☐ T4(0254) ☒ T5(0489)
: 1emp Blank? No	Other	anol	ı sa	Packing Material: Bubble Wrap Babble Ba
				_
A\N\(\overline{\	S Intact?	Seal	oN	Custody Seal on Cooler/Box Present?
				Tracking Number:
	See Excep			PaceSpeeDee
1 NOMEN	leil⊃[X]	S	asu∐	Courier: Ted Ex UpS
I LUM : WA !	_	11	11/6	Mench Associate
	Care i	,	M. 2	triesag gont!
ect #: MO#: 10225821	io19			Sample Condition Client Name:
10820201				
50 V98 02			ENA	
o.: Pace Analytical Services -	M được M	Doc		_/ _/

Sample Condition Upon Receipt (SCUR) - MN

Document Name:

rapeled by:

Page 1 of 1

Document Revised: 27Mar2020

Samples Pre-Logged into eCO 35665174 Internal Transfer Cha

State Of Origin: MN Cert. Needed:

Yes

× 7/22/2020

Pace Analytical

Results Requested By:

Requested Analysis

7/29/2020

Owner Received Date:

Workorder Name: B002606-19-017 Water Gremlin W

Subcontract To

Pace Analytical Ormond Beach

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Workorder: 10525821

Phone (386)672-5668

I,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

AG10 Unpreserved

Matrix

Drinking

10525821001 Lab 1D

7/22/2020 08:36

PS

Date/Time Collect

Sample Type

Sample ID

Item

823988

LAB USE ONLY

Comments

Date/Time

11232011

RX-INA Bace

Received Ey

Date/Time 712/20

Released By

Transfers

Received on Ice (V) or

Samples Intact (Y) or

Custody Seal (M) or N

Cooler Temperature on Receipt 5.8 °C

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev\_00 24March2009

Page 1 of 1



Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13 Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

0# 35565174

(SCHE)

Project # WU#: 355051	14
Project Manager: PM: SMM Due Date	Date and Initials of person:  Examining contents:
Client:	Deliver:
	рН:
Thermometer Used: 1349 Date: 12	3 W Time: ((14 Initials: Image: Image
State of Origin: For W	W projects, all containers verified to ≤6 °C
Cooler #1 Temp. °C S 7 (Visual) 0 (Correction Factor)	Samples on ice, cooling process has begi
Cooler #2 Temp.°C [-7 (Visual)(Correction Factor) _	
Cooler #3 Temp.°C(Visual)(Correction Factor) _	
Cooler #4 Temp.°C(Visual)(Correction Factor) _	(Actual) Samples on ice, cooling process has begu
Cooler #5 Temp. °C(Visual)(Correction Factor) _	(Actual) Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)(Correction Factor)	(Actual) Samples on ice, cooling process has begu
Courier: Fed Ex UPS USPS Client C	O Othor
Shipping Method:	
Other Other	ard Overnight   Ground  International Priority
Billing: ☐ Recipient ☐ Sender ☐ Third Party	☐ Credit Card ☐ Unknown
Tracking # 1320 7523 285	- 4
<b>A</b>	OtherShorted Time: Qty:
Chair of Guelada B	Comments:
Chain of Custody Present ☐ Yes ☐ No ☐ N/A Chain of Custody Filled Out ☐ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  No □N/A  Relinquished Signature & Sampler Name COC	
Samples Arrived within Hold Time	
Rush TAT requested on COC	Calacada de ala
Sufficient Volume □Yes □ No □N/A	The state of the s
Correct Containers Used	
Containers Intact	
Sample Labels match COC (sample IDs & date/time of	
All containers needing acid/base preservation have been	11 100
checked.  All Containers needing preservation are found to be in	7 Testivative.
compliance with EPA recommendation:	Lot #/Trace #: Time:
Exceptions: VOA, Coliform, TOC, O&G, Carbamates	Initials:
Headspace in VOA Vials? ( >6mm): □Yes □ No □N/A	
rip Blank Present: □Yes □ No INNA	
Client Notification/ Resolution: Person Contacted:	Date/Time:
comments/ Resolution (use back for additional comments):	
Project Manager Review:	Date:





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

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Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526991001	823988	Drinking Water	07/31/20 00:00	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526991001	823988	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

Date: 08/11/2020 10:31 AM

Sample: 823988	Lab ID: 105	26991001	Collected: 07/31/2	20 00:00	Received: 07	/31/20 15:00 I	Matrix: Drinking Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
522 MSS 1,4 Dioxane  Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach										
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.18	1	08/09/20 05:35	08/10/20 22:13	3 123-91-1			
1,4-Dioxane-d8 (S)	99	%	70-130	1	08/09/20 05:35	08/10/20 22:13	3			

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

QC Batch Method:

655137 EPA 522

QC Batch: 655137

Analysis Method:

Analysis Description:

Laboratory:

EPA 522

522 MSS 1,4 Dioxane

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526991001

METHOD BLANK: 3561567

Date: 08/11/2020 10:31 AM

Matrix: Water

Associated Lab Samples: 1052

10526991001

Blank Reporting
Parameter Units Result Limit

 Parameter
 Units
 Result
 Limit
 Analyzed

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 08/10/20 19:51

 1,4-Dioxane-d8 (S)
 %
 107
 70-130
 08/10/20 19:51

LABORATORY CONTROL SAMPLE: 3561568

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.4 102 70-130 ug/L 1,4-Dioxane-d8 (S) 111 70-130 %

LABORATORY CONTROL SAMPLE: 3561569

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 105 50-150 1,4-Dioxane-d8 (S) % 113 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561570 3561571

Parameter	Units	10526991001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	23	23	23.4	22.8	102 110	99 106	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

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TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526991

Date: 08/11/2020 10:31 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526991

Date: 08/11/2020 10:31 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526991001	823988	EPA 522	655137	EPA 522	655495

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

(N/A) (N/A) Sealed δ 3 poteno State / Location (N/A) MO#:10526991 Received on Residual Chlorine (Y/N) Page: TEMP in C BB 1/29/20 151 4/8/20 I DATE Signed: 7/3(/20 10526991 annika.asp@pacelabs.com wence 1, 4 Dioxene 522 teeT-seavienA NA POZH N Jerho lonerheiv Ne2S2O3 PETS HOBN Pace Project Manager. Pace Profile #: n ЮН Section C Invoice Information: Attention: Company Name: Address: EONH 8.9 H2SO4 Pace Quote: S Unpreserved SAMPLER NAME AND SIGNATURE # OF CONTAINERS 00 00 1 11466 SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: COLLECTED Project Name: 522 Bisulfate vials Project # 1300 2666-19-017 Report To: Waterman, Shane Copy To: Kelly 1 GWDFYE TIME START C/1/3/1/20 DATE Required Project Information: (G=GRAB C=COMP) **SAMPLE TYPE** Purchase Order #: MATRIX CODE (see valid codes to left) Section B MATTRUX
Diraking Water
Water
Waste Weste Wester
Product
Product
Oil
Wipe
Aur
Cither
Tissue 2 3960 Scheuneman ADDITIONAL COMMENTS One Character per box. (A-2, 0-91, -) Sample Ids must be unique SAMPLE ID Wenck Associates, Inc. 823988 2080 Wooddale Drive MS/MSDS Phone: 651-294-4588 Requested Due Date: 541swaterman@wenck.com Required Client Information: Noodbury, MN 55125 9 2 8 4 7 . 9 + ITEM # Page 9 of 12

### Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Page 10 of 12

Labeled by: \_

Pace Analytical Services -Minneapolis

Sample Condition Upon Receipt  Client Name:			P	roject #:	M	0#::	10	5269	<b>)</b> 91	
Courier: Fed Ex UPS Pace SpeeDe Tracking Number:		JSPS Commerc	ial See E	Client		AKA ENT: WE	NCK	Due Da	le: 0	8/07/20
	<del></del>									
	No		als Intac		N	o <b>Biol</b> o				Yes □No □N/
Packing Material: Bubble Wrap Bubble B		None	∐_Ot	her:		<del></del>	•	Temp Blanl	k? 🔎	∰Yes □No
Thermometer:       ☐ T1(0461) ☐ J2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of	lce:	□Wet [	Blue	□None		Dry □M	elted	
Did Samples Originate in West Virginia? ☐Yes ☐No	W	ere All C	ontainer	Temps Tak	en? 🗌 Ye	s □No &	⊒ <del>√</del> /A			
Temp should be above freezing to 6°C Cooler Temp Re	ad w/te	mp blan	k:	1.4,	5.0	°c		age Correc		
Correction Factor: Cooler Temp Correct	ed w/ten	np blank	·:	1.2, 4	1.8	°C	(no	o temp blar	nk only _ºC	See Exception  1 Container
USDA Regulated Soil: ( N/A (water sample) other:  Did samples originate in a quarantine zone within the Uni ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m  If Yes to either question, fill out a	naps)?	∐Yes	∏No	iA, Did sa Hawai	mples orig	ginate from a to Rico)?	foreign آ	ПYes Г	rnation:	$\frac{7/31}{}$
							COM	MENTS:		
Chain of Custody Present and Filled Out?	Yes	□No		1.						
Chain of Custody Relinquished? Sampler Name and/or Signature on COC?	Yes	□No		2.						
Samples Arrived within Hold Time?	☑Yes ☑Yes	No □No	□N/A	3. 4.		····-				
Short Hold Time Analysis (<72 hr)?	□Yes	☐/No		5.	cal Coliforn	n	Total Coli	iform/E coli	BOD/cl	BOD Hex Chrome
Rush Turn Around Time Requested?	∐Yes	No		6.	, bluity []	indiceivic	iite 🗀 o	rtilopilos 🔟	Other	
Sufficient Volume?	€ Yes	□No		7.		• .		·	***	7,001
Correct Containers Used?	Yes	□No		8.						
-Pace Containers Used?	ØYes	□No								
Containers Intact?	Yes	□No		9.					···	
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	N/A					ed containe	r? []Ye	es 🔲 No
Is sufficient information available to reconcile the samples to the COC?	<b>Ø</b> ₹es	□No		11. If no,	write ID/ C	Pate/Time on	Contain	er Below:		See Exception
Matrix: Water Soil Oil Other					·					
All containers needing acid/base preservation have been checked?	∐Yes	∏No	₽ <b>N</b> 7A	12. Sampl	e#			-		
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	∏No	∠EÍN/A		NaOH	HN	103	∐H₂SO	4	Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	∐Yes	∏No	ØN/A	Positive for Chlorine?  Res. Chlor			рН Рар	er Lot# 0-6 Strip		See Exception  O-14 Strip
Extra labels present on soil VOA or WIDRO containers?				12				*		
Headspace in VOA Vials (greater than 6mm)?	☐Yes ☐Yes	□No □No	N/A	13.						See Exception
Trip Blank Present?	□Yes	□No	ØN/A	14.						
Frip Blank Custody Seals Present?	Yes	□No	□N/A	Pace	Trip Blan	k Lot # (if ρι	urchase	d):		
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:				Date/Tir	ne:	Field	i Data i	Required?	Yes	s ∐No
Project Managay Positions		<b>.</b>					0/0/-		· · · · · · · · · · · · · · · · · · ·	
Project Manager Review:  ote: Whenever there is a discrepancy affecting North Carolina of the project in part of the part	ىيىر	254	)		Date:		8/3/2	2020		_

FMT-ALL-C-002rev 00 24March2009

### MO#:35567512

## Internal Transfer Chai

Samples Pre-Logged into eCOC

Workorder: 10526991

Workorder Name: B002606-19-017 Water Gremlin

Pace Analytical Ormond Beach

Subcontract To

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Phone (386)672-5668

Results Requested By: 7/31/2020 × Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Requested Analysis

Pace Analytical "

8/7/2020

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

LAB USE ONLY

AG17 AG17 T

ന

Drinking Matrix

10526991001 Lab ID

7/31/2020 00:00

RQS

Date/Time Collect

Sample Туре

Sample ID

Item

823988

×

165 Date/Time

Received By

Date/Time

Released By

Transfers

Comments

1-3-40 QU

Received on Ice Y or N

o

Samples Intact Y

Custody Seal Y or N ပွ

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.



Document Name: Sample Condition Upon Receipt Form Document No.:

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Date: 08/07/20

rm (SCUR)

Projec Project Manag

Project Manager Review:

CLIENT: PACMIN

Date and Initials of person:

Examining contents: Label:\_ Deliver:

Client:

Onent.			pH:
Thermometer Used: T-5 (C	Date: 8/4/7	Time:	29 Initials: (E)
	v Date. DI VII	C rime. 11	Initials.
State of Origin:		projects, all containers veri	ified to ≤6 °C
Cooler #1 Temp.°C (Visual)			Samples on ice, cooling process has beg
Cooler #2 Temp. C (Visual) 6	(Correction Factor) 🖳	(Actual)	Samples on ice, cooling process has beg
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Courier: Fed Ex UPS U	USPS Client Co	mmercial Pace	Other
	riority Overnight		
☐ Other		o to might	a International Fronty
Billing: ☐ Recipient ☐ Sen	der ☐ Third Party	☐ Credit Card	□ Unknown
Tracking #	326 7523		
		4	
Custody Seal on Cooler/Box Present:	es 🗌 No <b>Seals in</b>	tact: Yes No	Ice: Wel Blue Dry None
Packing Material: Bubble Wrap Bubble	ole Bags   None Ot	ner	
Samples shorted to lab (if Yes, complete)	Shorted Date:	Short	ted Time: Qty:
		Comments:	
Chain of Custody Present	Dryes □ No □N/A	- Crimion Co	
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Samples Arrived within Hold Time	Yes 🗆 No 🗆 N/A		
Rush TAT requested on COC	ØYes □ No □N/A	Due 81	7
Sufficient Volume	Øyes □ No □N/A	000 131	/
Correct Containers Used	Yes   No   N/A		
Containers Intact	Yes DNo DN/A		
Sample Labels match COC (sample IDs & date/time of	1		
collection) All containers needing acid/base preservation have be	ĎYes □ No □N/A		
hecked,	QYes □ No □N/A	Preservative	Preservation Information:
All Containers needing preservation are found to be in compliance with EPA recommendation:	Yes DNo DN/A	Lot #/Trace a	#:
Exceptions: VOA, Coliform, TOC, O&		Date: Initials:	Time:
leadspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
rip Blank Present:	□Yes □ No □N/A		
lient Notification/ Resolution:			
ment nountailon/ Nesthillian:		D.4 55	
Person Contacted:		Date/Time:	
		Date/Time:	
	al comments):	Date/Time:	

Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

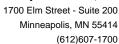
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526213001	3963 Scheuneman Rd	Drinking Water	07/24/20 09:02	07/24/20 12:15





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526213001	3963 Scheuneman Rd	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

Date: 07/31/2020 12:07 PM

Sample: 3963 Scheuneman Rd	Lab ID: 10	0526213001	Collected: 07/24/2	20 09:02	Received: 07	/24/20 12:15	Matrix: Drinking Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522									
	Pace Analyti	cal Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 10:36	123-91-1		



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

QC Batch: 652249

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526213001

METHOD BLANK: 3546520

Matrix: Water

Associated Lab Samples: 10526213001

Blank Reporting

Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) % 88 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Date: 07/31/2020 12:07 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

Parameter	Units	10526212001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	2.1	2.1	1.7	1.8	80 90	84 91	70-130 70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526213

Date: 07/31/2020 12:07 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526213

Date: 07/31/2020 12:07 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526213001	3963 Scheuneman Rd	EPA 522	652249	EPA 522	652612

# CHAIN-OF-CUSTODY / Analytical Request Document

**(nalytical** 

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Semples Intact (Y/N) Regulatory Agency SAMPLE CONDITIONS State / Location נאיאז Sealed 2 Custody Page: (N/A) Residual Chlorine (Y/N) ン Received on lce lce TEMP In C 00:21 12:00 TIME 215 WO#:10526213 17/24/2N 7/24/2 DATE Signed: 7/24/20 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION enaxoib-A,1 SS3 tseT sesylanA N/A Other Methanol Preservatives Na2S2O3 Address:
Pace Quote:
Pace Project Manager:
Pace Profile #: 39664, HOBN Section C Invoice Information: HCI Company Name: EONH **₽OSZH** Attention: TIME 7/6/2 0905 7/24/2 9:04 Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: Water Gremlin Well Sampling - 2606-0017 DATE TIME 2 DATE New Project Name: Water Gremin wen Semme.
Project # \$\infty\$ \text{\$\infty\$ \text{\$\infty\$ \text{\$\infty\$ \text{\$\infty\$}}} RELINQUISHED BY / AFFILIATION COLLECTED 900 TIME 2776 START G/24/12 Required Project Information: DATE Report To: Kelly Jaworski (G=GRAB C=COMP) **34YT 319MA8** Purchase Order#: (see valid codes to left) Section B Copy To: ~ 욕♀♥ 중 ₽ ₹ MANTRIX
Dinking Water
Water
Wasse Water
Product
Product
Oil Wife
Air
Chie 3963 Sheuneman Rd ADDITIONAL COMMENTS (A-Z, 0-9 / , -) Sample Ids must be unique Wenck Associates, Inc. 1800 Pioneer Creek Center One Character per box. SAMPLE ID SA. V ail: kjaworski@wenck.com uired Client Information: ysis to be performed at Pace FL tple Plain, MN 55359 one: NONE Page 9 of 12

# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Page 10 of 12

Sample Condition Upon Receipt  A A Constant Cons			Pr	roject #:	W0#:10526213
Courier:     Fed Ex	Ūυ	SPS	  ∑ C ial ⊴ee E	lient ceptions	PM: AKA Due Date: 07/31/20 CLIENT: WENCK
Tracking Number:	<del>(36) 6</del> 7	58 CC	<u> </u>		
<u> </u>	₫No _		als Intact		No Biological Tissue Frozen? Yes No No
Packing Material: Bubble Wrap Bubble B		None	□Otl	her:	Temp Blank? ☑Yes ☐No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of	lce:	₩et	Blue None Dry Melted
Did Samples Originate in West Virginia? ☐Yes ☑No					en? □Yes □No ⊠N/A
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blank	:: <u>2</u> .	7,4.0	OC Average Corrected Temp
Correction Factor: 1700 Cooler Temp Correcte	d w/ten	ıp blank	. 2.7	7.0	(no temp blank only): ☐See Exception  OC ☐1 Container
USDA Regulated Soil: ( N/A, water sample/Other:			 }	Date/I	nitials of Person Examining Contents: MK2 7-29
Did samples originate in a quarantine zone within the Unit	ed States	_		A, Did s	imples originate from a foreign source (internationally, including
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a		Yes d Soil Ch	No ocklist (I	Hawa F-MN-O-33	ii and Puerto Rico)?
		4 5011 611	- CCRIISE (I	-14114-Q-3	COMMENTS:
Chain of Custody Present and Filled Out?	¥Yes	□No		1,	COMMINICATS.
Chain of Custody Relinquished?	Yes	□No	<del></del>	2.	
Sampler Name and/or Signature on COC?	Yes	∏No	□N/A	3.	
Samples Arrived within Hold Time?	YZ Yes	□No		4.	
Short Hold Time Analysis (<72 hr)?	☐Yes	∕No		5.	cal Coliform
Rush Turn Around Time Requested?	<b>√</b> Yes	□No		6. S	D S Day
Sufficient Volume?	Yes	□No		7.	
Correct Containers Used?	√ZYes	□No		8.	
-Pace Containers Used?	Yes	□No			
Containers Intact?	Yes	□No		9.	
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	<b>№</b> N/A	10. Is s	ediment visible in the dissolved container? Yes No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No			write ID/ Date/Time on Container Below: See Exception
Matrix: Water Soil Oil Other					
All containers needing acid/base preservation have been checked?	□Yes	□No	₩ZÎN/A	12. Samp	le#
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	<b>⊠</b> N/A		NaOH ☐ HNO <sub>3</sub> ☐H <sub>2</sub> SO <sub>4</sub> ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	XiYes	∏No	□n/a	Positive f Chlorine Res. Chlo	No pH Paper Lot#
				ives. Cilio	rine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No □No	N/A N/A	13.	See Exceptio
Trip Blank Present? Trip Blank Custody Seals Present?	□Yes	□No	<b>⊠</b> N/A	14.	
	Yes	□No	N/A	Pac	e Trip Blank Lot # (if purchased):
CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Comments/Resolution:				Date/Ti	Field Data Required? Yes No
7.6		_			
Project Manager Review:	m	Us	P		Date: 7/27/2020
Note: Whenever there is a discrepancy affecting North Carolina ( hold, incorrect preservative, out of temp, incorrect containers).	:omplianc	e sample:	s, a copy o	of this form	will be sent to the North Carolina DEHNR Certification Office (i.e out

FMT-ALL-C-002rev.00 24March2009

35566011 Internal Transfer Chain o x Samples Pre-Logged into eCOC. Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10526213

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414 Phone (612)607-1700

Suite 200

Phone (386)672-5668

Yes Owner Received Date: te Of Origin: MN Lart. Needed:

7/24/2020 ×

Pace Analytical "

7/31/2020

Results Requested By:

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

bevieseiqiU (T)

 $\times$ 

Drinking

10526213001 Lab ID

7/24/2020 09:02

PS

3963 Scheuneman Rd

Sample ID

Item

Date/Time Collect

Sample Type

Matrix

LAB USE ONLY

218212

Date/Time

10000

Received By

Date/Time

Released By

**Transfers** 

Comments

1020

Z

Z 6

Samples Intact Y

Received on Ice Y or

Custody Seal Y or N

ပွ

Cooler Temperature on Receipt

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018
Issuing Authority:
Pace Florida Quality Office

**Project** Project Manage

Clien

PM: SMM

Due Date: 07/31/20

CLIENT: PACMIN

coint Form (SCUR) Date and Initials of person:

Exar	nining contents:	_
Deliver pH:	ver:	
5_	Initials: BRN	

			рн:
Thermometer Used: 1349	Date: 7/28/2	Time:	1945 Initials: BRN
State of Origin:	For WV p	rojects, all containers veri	ified to ≤6 °C
Cooler #1 Temp. C 3 (Visual) +. 1	(Correction Factor) 3		Samples on ice, cooling process has beg
Cooler #2 Temp. 65 (Visual)	(Correction Factor) 5		Samples on ice, cooling process has begin
Cooler #3 Temp.°C(Visual)	(Correction Factor)		Samples on ice, cooling process has begin
Cooler #4 Temp.°C(Visual)	(Correction Factor)		Samples on ice, cooling process has begin
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has begin
	(Correction Factor)		Samples on ice, cooling process has begin
	SPS Client Cor		Other
Shipping Method:	rity Overnight 🛛 Standard (	Overnight 🛘 Ground	d ☐ International Priority
Other			
1		□ Credit Card	□ Unknown
Tracking #	10 7523	4033	
Custody Seal on Cooler/Box Present: Yes	□No Seals int	act: Yes No	Ice: (We) Blue Dry None
Packing Material: Bubble Wrap Bubble			ide. (vie) blue bly Nolle
•		er	
Samples shorted to lab (If Yes, complete)	Shorted Date:	Short	ed Time: Qty:
	C	omments:	22
Chain of Custody Present	C/Yes □ No □N/A	omments:	.25
SANCE FOR THE SANCE		omments:	
Chain of Custody Filled Out	Øfes □ No □N/A	omments:	_225
Chain of Custody Filled Out Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time	Diffes   No   N/A   Diffes   No   N/A   Diffes   No   N/A	omments:	7/31
Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC	Offes ONO ON/A Offes ONO ON/A Offes ONO ON/A Offes ONO ON/A		7/31
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume	PYes   No   N/A   PYes   No   N/A   PYes   No   N/A   PYes   No   N/A   PYes   No   N/A		7/31
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact	Offes		7/31
AND TOTAL	Offes		7/31
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  III containers needing acid/base preservation have been	Offes	Due 7	
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  Ill containers needing acid/base preservation have been thecked.	Offes	Due 7	Preservation Information:
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  Ill containers needing acid/base preservation have been hecked.  Ill Containers needing preservation are found to be in ompliance with EPA recommendation:	No   N/A	Due 7	Preservation Information:
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  Ill containers needing acid/base preservation have been hecked.  Ill Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G,	No   N/A	Preservative	Preservation Information:
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of ollection)  Ill containers needing acid/base preservation have been hecked.  Ill Containers needing preservation are found to be in ompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, leadspace in VOA Vials? (>6mm):	No   N/A	Preservative Lot #/Trace #	Preservation Information:
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, deadspace in VOA Vials? (>6mm):	No   N/A	Preservative Lot #/Trace #	Preservation Information:
Chain of Custody Filled Out  Relinquished Signature & Sampler Name COC  Samples Arrived within Hold Time  Rush TAT requested on COC  Sufficient Volume  Correct Containers Used  Containers Intact  Sample Labels match COC (sample IDs & date/time of collection)  All containers needing acid/base preservation have been checked.  MI Containers needing preservation are found to be in compliance with EPA recommendation:	No   N/A	Preservative Lot #/Trace #	Preservation Information:

Client	Notifica	tion/	Resolution:
	_		

Со

Page 12 of 12

Project Manager Review:

Date:





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526955001	3970 Scheuneman Rd	Drinking Water	07/29/20 10:40	07/29/20 16:39





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526955001	3970 Scheuneman Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

Date: 08/11/2020 10:29 AM

Sample: 3970 Scheuneman Rd	Lab ID: 1	0526955001	Collected: 07/29/2	20 10:40	Received: 07	//29/20 16:39 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
1,4-Dioxane (p-Dioxane) Surrogates	ND	ug/L	0.20	1	08/09/20 05:35	08/10/20 21:42	123-91-1	
1,4-Dioxane-d8 (S)	100	%	70-130	1	08/09/20 05:35	08/10/20 21:42	,	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

QC Batch: 655137

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526955001

METHOD BLANK: 3561567

Matrix: Water

Associated Lab Samples:

Date: 08/11/2020 10:29 AM

10526955001

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Analyzed

 (p-Dioxane)
 ug/L
 ND
 0.20
 08/10/20 19:

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 08/10/20 19:51

 1,4-Dioxane-d8 (S)
 %
 107
 70-130
 08/10/20 19:51

LABORATORY CONTROL SAMPLE: 3561568

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 20.4 102 70-130 ug/L 1,4-Dioxane-d8 (S) 111 70-130 %

LABORATORY CONTROL SAMPLE: 3561569

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.21 105 50-150 1,4-Dioxane-d8 (S) % 113 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561570 3561571

MS MSD 10526991001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 23 23 23.4 102 70-130 3 20 ug/L 22.8 99 1,4-Dioxane-d8 (S) % 110 106 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526955

Date: 08/11/2020 10:29 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526955

Date: 08/11/2020 10:29 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526955001	3970 Scheuneman Rd	EPA 522	655137	EPA 522	655495

CHAIN-OF-CUSTODY / Analytical Request Document

Samples Intect WO#:10526955 Custod Sealed Residual Chlorine (Y/V) The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Received on 7.7 LEWD P C 128 Water 20 621/2/63 10526955 Palls 2/6/2 DATE Signed: amika asp@pecelabs.com, enaxolb-h,t SS8 arma OSHON JOUR lonsrieM GIZON Preservatives N828203 Pace Quote:
Pace Project Manager: a
Pace Profile #: 39664, 4 HOBN HCI Company Name: Day EONH HSSO4 080 bevisserynU # OF CONTAINERS SAMPLE TEMP AT COLLECTION SIGNATURE of SANPLER: 7/6/24 PRINT Name of SAMPLER: Purchasse Order ft.
Project Name: Water Grenlin Well Sampling - 2006-0017
Project ft. MOG 22(0) = 19 - 017 OF THE PERSON 101 COLLECTED 377 START Required Project Information Report To: Kelly Jaworski SAMPLE TYPE (G-GRAB C-COMP) MATRIX CODE (see valid codes to left) 20 Copy To 29878° 49866 a S MATTER
Distribuy Water
Water
Water
Water
Product
SoilSoid
Cit
Wice
Ar
Christ
Cit
SoilSoid
Cit
Soil
Cit SUMPONAMAN One Character per box. (A.Z. 0.91, -) Sample Ms must be unique STD Cd 1800 Pioneer Creek Center SAMPLE ID 29.70 Wenck Associates, Inc. quired Client Information: ais to be performed at Pace Fi. ph Plain, IAN 55359 one: NONE representations Page 9 of 12

(N/A)

**16100**0

silogsanniM	ENA-FRM-MIN4-0150 Rev.00
- Pace Analytical Services -	Document No.:
L to L ageq	Sample Condition Upon Receipt (SCUR) - MM
Document Revised: 27Mar2020	Document Name:

<sup>®</sup>ace Analytical

Page 10 of 12

fication Office ( i.e. out of	na DEHNR Certif	or to the Morth Caroli	this form will be ser	ο λdoo e '	səidwes ə	complianc	у могл сагонпа с ect containers).	a discrepancy arrecting e, out of temp, incorre	Note: Whenever there is: hold, incorrect preservativ
•	020	8/3/5	:este:		100	OW		ager Review:	
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								3 :	Comments/Resolution
· თ_ თ_			Date/Time:					_	Person Contacted:
∫ oN sə∀							NOIT	FICATION/RESOLU	CLIENT NOT
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			13.	17.1921			Sagnistac	Soil VOA or WIDBO or	Extra labels present on
0-14 Strip	0-6 Strip	10-6 Roll	Res. Chlorine					cA44\nixolu	DRO/8015 (water) and
<u>.</u> П	er Lot#	No ph Pap	Chlorine?	A\N <b>⊠</b>	oN□	S∌从□	Grease,		Exceptions: VOA, Colifo
See Exception		s∋√_	Positive for Res.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	••—	^			
•							4>12 Cyanide)		N 'Hqz> , OS, H , ONH)
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			12. Sample #	A\N <b>⊠</b>	oN 🗌	s∌Y∏	n have been	icid/base preservatio	All containers needing a
,	TI3A 1	n Included:	74I					Oil Other	Matrix: ₩ater ☐Soil
□ .>(ο <sub>ι</sub>	yashed San	Hay on Cor	Mo informa		on⊠	S∋Y□		SHE.	to the COC?
See Exception		Date/Time on Contain			<u> </u>				ls sufficient information
N⊡ Yes ☐No	ed container?	vlossib eht ni eldisiv	10. Is sediment	A\N	oN□	S∌从□	SatsaTi	eceived for Dissolved	Field Filtered Volume R
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			,		oN	S∂\.		Şpə	-Pace Containers Use
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			15 CLS 9		oN□	S∋Y X		e Requested?	Rush Turn Around Tim
DVcBOD	iform/E coli   BC hthophos   Othe	mHPCTotal Col NitrateNitriteO	5. Fecal Colifor		on⊠	sə从□		f(\\ \\ \\ ST>) sis	ylsnA əmiT bloH thod2
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к.	nowneded and	CINGE WITH SCUK/	ni bns (855-y-vivi	-4) 35HADS	2011 CUE	วลายเกริลเ	N P 100 IIII (IIOF	Yes to either quest	
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tionally, including	source (internat	ngierot a most esanig	, Did samples orig	, FL, GA	ַ אַר' אַנּ' כ	setete be	within the Unite	in a quarantine zone	Did samples originate
72-62-4 ZMU	Contents:	gainimex3 noz199	Pate/Initials of		(		npie/Other:	: ( 🔀 N/A, water sar	USDA Regulated Soil
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	temp blank o		hih						1
ameT	age Corrected		97				oler Temp Rea		nt evods ed bluods gmeT
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CO	6070	0T:#0	M			524	fasocia)	Monsh !	Upon Receipt
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Labeled by:

# MO#: 35567508

Internal Transfer Chain of Cu × Samples Pre-Logged into eCOC.

ace Analytical

Origin: MN

						S	cen. needed:	Yes	×		•
Workorde	Workorder: 10526955	Workorder N	Workorder Name: B032606-19-017 Water Gremlin	-19-017 Water	Gremlin	ŏ	Owner Received Date:		7/29/2020	Results Requested By:	8/5/2020
Report To			Subcontract To	t To				R	Requested Analysis	Analysis	
Annika Asp Pace Analytical I 1700 Elm Street Suite 200 Minneapolis, MN Phone (612)607-	Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		Pace A 8 East Ormon Phone	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668	nd Beach	Preserved Containers	ontainers  On DW by 522 (Pace FL)				
Item Sample ID	le ID	Sample Collect Type Date/Ti	Collect Date/Time	LabiD	Matrix	EOKSKAN TTT	ısxoiQ-₽,1				LAB USE ONLY
	3970 Scheuneman Rd	PS	7/29/2020 10:40	10526955001	Drinking	-	×				
3 2											
4 3											
No. of the last										Comments	
Transfers	Released By	1.0	Date/Time	Received By	γ ,		Date/Time				
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Cooler Te	Cooler Temperature on Receipt	Receipt	Sn2   0°	Custody Seal Y	N TO	Re	Received on Ice	Y or N		Samples Intact Y	or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009

## Pace Analytical

# Document Name: Sample Condition Upon Receipt Form Document No.:

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

	MU#: 3556/5	<b>10</b> m (SC	UR)
Project	PM: SMM Due Date CLIENT: PACMIN	: 08/05/20	Date and Initials of person:
Project Manage	OLIGHT FROM IN		Examining contents:
Client:	·	<u> </u>	Label: Deliver:
	0.1.1		pH:
Thermometer Used:	) ( ) Date: 8 ( )	10 Time: 11.7	22 Initials: (EJ
State of Origin:		V projects, all containers verifie	d to ≤6 °C
Cooler #1 Temp. C (Visua	al) Oct (Correction Factor)	(Actual)	Samples on ice, cooling process has be
Cooler #2 Temp. C (Visua	al) <u> </u>	(Actual)	Samples on ice, cooling process has be
Cooler #3 Temp. °C(Visua	al)(Correction Factor)	(Actual)	Samples on ice, cooling process has be
Cooler #4 Temp. °C(Visua	al)(Correction Factor)	(Actual)	Samples on ice, cooling process has be
Cooler #5 Temp.°C(Visua	al)(Correction Factor)	(Actual)	Samples on ice, cooling process has be
Cooler #6 Temp. C(Visua	al)(Correction Factor)	(Actual)	Samples on ice, cooling process has be
	UPS USPS Client Control of the Priority Overnight Control of Standar		☐ Other
Billing:   Recipient	Sender	☐ Credit Card	] Unknown
Tracking #	1320 7523		
Packing Material: □Bubble Wrap Samples shorted to lab (If Yes, com	Bubble Bags None Co		1 Time: Qty:
		Comments:	
Chain of Custody Present	ØYes □ No □N/A		
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Nai	me COC DYes □ No □N/A		
Samples Arrived within Hold Time			
Rush TAT requested on COC	PYes □ No □N/A	1) ve 8(5	
Sufficient Volume	ØYes □ No □N/A		
Correct Containers Used	□ Yes □ No □N/A		
Containers Intact ample Labels match COC (sample IDs & c ollection)	date/time of		
Il containers needing acid/base preservation	on have been	Pn	eservation Information;
necked. Il Containers needing preservation are fou	nd to be in      Yes □ No □N/A	Preservative:_ Lot #/Trace #:	
ompliance with EPA recommendation:	⊭Yes □ No □N/A	Date:	Time:
Exceptions: VOA, Coliform eadspace in VOA Vials? ( >6mm):		Initials:	
ip Blank Present:	□Yes □ No □N/A		
	□Yes □ No ¬N/A	375	
lient Notification/ Resolution: Person Contacted:		Date/Time:	
omments/ Resolution (use back for	additional comments):		
Project Manager Review:			Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

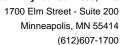
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526356001	793958	Drinking Water	07/27/20 13:30	07/27/20 14:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526356001	793958	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

Date: 07/31/2020 12:08 PM

Sample: 793958	Lab ID: 10	526356001	Collected: 07/27/2	20 13:30	Received: 07	/27/20 14:00 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Method	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 12:12	123-91-1	
1,4-Dioxane-d8 (S)	92	%	70-130		07/29/20 12:26	07/00/00 40 40		



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

QC Batch: 652249

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526356001

METHOD BLANK: 3546520

Date: 07/31/2020 12:08 PM

3546520

Matrix: Water

Associated Lab Samples: 10526356001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/30/20 08:29 ug/L 1,4-Dioxane-d8 (S) % 88 70-130 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

Parameter	Units	10526212001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	2.1	2.1	1.7	1.8	80 90	84 91	70-130 70-130	2	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526356

Date: 07/31/2020 12:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526356

Date: 07/31/2020 12:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526356001	793958	EPA 522	652249	EPA 522	652612

**Pace Analytical** 

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section C

Section B

ŏ osect Samples  $\widehat{g}$ State / Location Sealed Cooler LVIVI WO# 10526356 7 Page: Residual Chlorine (Y/V) > Кесејуед оп се 50 TEMP In C 8 72700 MICO . 1/61/2 DATE DATE Signed: annika.asp@pacelabs.com, ACCEPTED BY AFFILIATION 522 1,4-dioxane N/A 1eeT sesylanA Methanol Preservatives Pace Quote:
Pace Project Manager: ar
Pace Profile #: 39664, 4 N92S2O3 HOBN 16550A Invoice Information: HÇI Attention: Company Name: Address: еоин H2504 Unpreserved 0905 # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION H16/20 PRINT Name of SAMPLER: Project Name: Water Gremlin Well Sampling - 2506-0017 Project #: 【八うフレじレートイーのフ SIGNATURE OF SAMPLE DATE CORPOR TIME S DATE COLLECTED RELINQUISHED BY / AFFILIATION TIME START Required Project Information: leport To: Kelly Jaworski 9 (G=GRAB C=COMP) SAMPLE TYPE Purchase Order# MATRIX CODE (see valid codes to left) Copy To: MATRIX
Drinking Water
Waster
Waster
Waster
Product
Product
Oil
Whee
Air
Other
Tissue One Character per box. (A-Z, 0-9 /, -). Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: ysis to be performed at Pace FL aple Plain, MN 55359 rail: kiaworski@wer quested Due Date: NONE Page 9 of 12

(N/A)

(N/A)

silogsənniM	ENV-FRM-MIN4-0150 Rev.00
- seoivieal Services -	Document No.:
Page 1 of 1	Sample Condition Upon Receipt (SCUR) - MM
Document Revised: 27Mar2020	роспшеит Изте:



-/	
Page 1	0 of 12

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				A/NX	oN 🗌	X€2	١)خ	s (greater than 6mm	leadspace in VOA Vials
See Exception			13'	A\N⊠	oN□	S∌Y□	containers?	OAGIW or AOV lios	xtra labels present on
dint2 41-0	qint2 9-0	llog 9-0	Res. Chlorine					-	PRO/8015 (water) and
See Exception	H Paper Lot#	Yes p	Positive for Res.	A\N <b>⊠</b>	_ ON∏	S∋Y□			xceptions: VOA, Colifo
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Labeled by:

Pace Analytical

8/3/2020

Results Requested By:

7/27/2020 ×

Owner Received Date:

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)637-1700

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

יכור meened:

u DM pA 255 (b9c6 EF)

Yes

in: MN

WO#:35566015

Internal Transfer Chain of Cust

× Samples Pre-Logged into eCOC.

Workorder: 10526356

Sample Collect   Lab ID   Matrix   AG1T   AG1T   Matrix   AG1T   AG							Preserved Containers				
Date/Time   Received By   100000000000000000000000000000000000	tem Sar		sample	Collect Date/Time	Lab ID	Matrix	EOSSEN AG1T	iexoiŪ-∔,I			LAB USE ONLY
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\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form
Document No.: Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

F-FL-C-007 rev, 13

Form (SCUR)

Date:

Proj€ **Project Mana** 

Project Manager Review:

WO#:35566015

Due Date: 08/03/20

CLIENT: PACMIN

Date and Initials of person:
Examining contents: Label:\_

CIII	Deliver:
Thermometer Used: 1349 Date: 7/38/30	Time: 1045 Initials: BRN
	Time. 1045 Initials. DEN
7.1	ects, all containers verified to ≤6 °C
Cooler #1 Temp. C (Visual) (Correction Factor)	
Cooler #2 Temp. C5 (Visual) (Correction Factor) 5	(Actual) Samples on ice, cooling process has begin
Cooler #3 Temp. °C (Visual) (Correction Factor)	(Actual) Samples on ice, cooling process has begin
Cooler #4 Temp. C(Visual)(Correction Factor)	(Actual) Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)(Correction Factor)	(Actual) Samples on ice, cooling process has begu
Cooler #6 Temp. C(Visual)(Correction Factor)	(Actual) Samples on ice, cooling process has begu
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Custody Seal on Cooler/Box Present: ☐Yes ☐No Seals intac	:t: ☑ Yes ☐ No 1ce: We Blue Dry None
Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐None ☐Other	
Samples shorted to lab (If Yes, complete) Shorted Date:	Shorted Time: Qty:
	mments:
Chain of Custody Present	
Chain of Custody Filled Out Yes No N/A	
Relinquished Signature & Sampler Name COC	
Samples Arrived within Hold Time	
Rush TAT requested on COC   Yes No N/A	
Sufficient Volume	
Correct Containers Used ☐ Yes ☐ No ☐N/A	
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Containers needing preservation are found to be in	Preservative: Lot #/Trace #:
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eadspace in VOA Vials? (>6mm): □Yes □ No □N/A	mado:
rip Blank Present: □Yes □ No ΦN/A	
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omments/ Resolution (use back for additional comments):	
2555 ONG OF BU Lange	PHOD
	Page 12 of





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526992001	793958	Drinking Water	07/31/20 12:52	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526992001	793958	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

Date: 08/11/2020 10:30 AM

Sample: 793958	Lab ID: 10526992001		Collected: 07/31/20 12:52		Received: 07/31/20 15:00		Matrix: Drinking Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.19	1	08/07/20 17:05	08/10/20 17:33	123-91-1	
1,4-Dioxane-d8 (S)	104	%	70-130		08/07/20 17:05	00/40/00 47 00		



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

QC Batch: 655132 Analysis Method:

EPA 522

QC Batch Method: EPA 522 Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

10526992001 Associated Lab Samples:

Parameter

METHOD BLANK: 3561521 Matrix: Water

Associated Lab Samples:

10526992001

Blank Reporting Result Limit

ND

Qualifiers Analyzed

0.20 08/10/20 11:01

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

1,4-Dioxane-d8 (S)

ug/L 117 %

70-130 08/10/20 11:01

LCS

LABORATORY CONTROL SAMPLE: 3561522

Spike LCS Parameter Units Conc. Result % Rec 1,4-Dioxane (p-Dioxane) 2 1.8 ug/L

%

35567038003

Result

32.8

Units

ug/L

%

3561524

MS

Units

Limits 91 70-130 109 70-130

% Rec

Qualifiers

LABORATORY CONTROL SAMPLE: 3561523

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .19J 95 50-150 1,4-Dioxane-d8 (S) % 109 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

Parameter

1,4-Dioxane (p-Dioxane)

Date: 08/11/2020 10:30 AM

1,4-Dioxane-d8 (S)

3561525 MSD Spike Spike MS MSD MS MSD % Rec Max Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 2.1 2.1 38.2 255 70-130 2 20 M1 37.6 224 107 110 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526992

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 08/11/2020 10:30 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526992

Date: 08/11/2020 10:30 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526992001	793958	EPA 522	655132	EPA 522	655489

Face Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ntact (V/V) Samples (N/A) ð Cooler pelse ā Regulatory Agency Custody 40#:10526992 (N/A) 90) Received on 4-8 Residual Chlorine (Y/V) Page: TEMP in C (38 2/21/20/21/2 H3 Veo DATE Signed: 7/31/20 annika.asp@pacelabs.com, wench 1, 4 Dioxane 522 N/A 189T aesylanA Other Not 1-5 Oc Methanol ROSSEN Preservatives るならいろ HOBN Pace Quote:
Pace Project Manager:
Pace Profile #: n Section C Invoice Information: ЮН Company Name: Address: EONH 8.9 **POSZH (29)** Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: SIGNATURE of SAMPLER: 6 Part COLLECTED Project Name: 522 Bisulfate vials Project # 1800 2 606 - 19-017 Report To: Waterman, Shane
Copy To: Kelly I BurpKK TIME C/3/2/20 START Required Project Information: Report To: Waterman, Shane DATE (G=GRAB C=COMP) SAMPLE TYPE Purchase Order #: (see valid codes to left) Section B PA 3999 Schrangemen One Character per box. (A-Z, 0-9 /, -). Sample Ids must be unique ADDITIONAL COMMENTS SAMPLE ID 193958 Wenck Associates, Inc 2080 Wooddale Drive mail: swaterman@wenck.com Required Client Information: Woodbury, MN 55125 Requested Due Date: 8 .0 9 6 5 N # WELL Page 9 of 12

# Pace Analytical\*

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Page 10 of 12

Labeled by: \_\_\_\_\_\_\_CFC

### ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt	Client Name:				P	roject #	:∏ <u>W</u>	0#:	10	5269	92	
Courier:	☐Fed Ex ☐Pace	UPS SpeeDee		JSPS commerc	cial See E	Client Exceptions		: AKA IENT: W	ENCK	Due Dat	e: 08	/07/20
Tracking Number:												
Custody Seal on Co	oler/Box Present?	Yes Z	Νο	Se	eals Intac	t? 🔲	es 🗾	No Bio	ological .	Tissue Froze	n? 🔲Y	es □No □N/A
Packing Material:	Bubble Wrap	Bubble B	ags [	None	□Ot	her:		· · · · · · · · · · · · · · · · · · ·		Temp Blanl	? Z	Yes □No
	T1(0461) T2(133) T4(0254) T5(048)			Type of	fice:	₩et	□Blue	□Non	e 🔲	Dry M	elted	
Did Samples Origina	te in West Virginia? [	Yes Avo	W	ere All C	ontainer	Temps T	aken? 🗀	Yes □No	Ð⁄n/A			<u></u>
Temp should be above fro	eezing to 6°C Cooler Te	ler Temp Rea		•		1.4	, 5.0 40	°c	(n	rage Correct o temp blar	nk only):	See Exceptions
USDA Regulated Soil	1		u w/ten	np biani	<u>:</u>						_°C	1 Container
Did samples originate in ID, LA. MS, NC, NM, NY	n a quarantine zone w	ithin the Unit	aps)?	Yes	□No	iA, Did Hav	l samples o waii and Pu	riginate from erto Rico)?	n a foreigi I	n source (inte	rnationa No	- 7/3 (/ 7 lly, including
										MENTS:		
Chain of Custody Preser			_ <b>∀</b> ves	□No		1.						
Chain of Custody Reling			Yes	□No		2.						
Sampler Name and/or S			Yes	□No	□N/A	<del></del>						
Samples Arrived within Short Hold Time Analys			□⁄rēs □Yes			5.	Fecal Colifo	orm HPC	Total Co	liform/E coli	BOD/cB	OD Hex Chrome
Rush Turn Around Time	Requested?		∐Yes	No		6.	I urbidity L	_NitrateN	litrite []C	Orthophos 🔲	Other	
Sufficient Volume?	requestes		Yes	<u>⊮∠ino</u> ∐No	<del>7.17 · ·</del>	7.				·		
Correct Containers Used	?		Yes	□No	<del></del>	8.					·	
Pace Containers Use			Ves	□No		6.						
Containers Intact?		***	Yes	□No	• ••••	9.						
Field Filtered Volume Re	ceived for Dissolved To	ests?	□Yes	□No	Z/N/A	10.	s sediment	visible in th	a dissolu	ed containe	-2 🗆 Va	s □No
Is sufficient information to the COC?	available to reconcile		Ø ∜es	□No	<u> </u>			/ Date/Time				See Exception
Matrix: Water Soil All containers needing acchecked?		have been	∐Yes	□No	.⊟ <b>N</b> TA	12. San	nple#					<del></del>
All containers needing procompliance with EPA rec (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, Nat	ommendation?		∐Yes	□No	.⊠Ñ/A		☐ NaOH	□H	INO₃ .	∏H₂SO∠	. [	Zinc Acetate
Exceptions: VOA, Coliforn DRO/8015 (water) and D		rease,	∐Yes	□No	ØN/A	Positive Chlorin Res. Ch		Yes No 0-6 Roll	рН Рар	oer Lot# 0-6 Strip		See Exception O-14 Strip
Extra labels present on so Headspace in VOA Vials (		ainers?	☐Yes ☐Yes	∏No ∏No	DN/A DN/A	13.		<u> </u>				See Exception
Trip Blank Present? Trip Blank Custody Seals			☐Yes ☐Yes	□No □No	DN/A	14. Pa	ice Trip Bla	ank Lot # (if	purchase	ed):		
CLIENT NOTIF Person Contacted: Comments/Resolution:	ICATION/RESOLUTIO	N					Time:		·	Required?	∐Yes	□No
Project Manag		Quanth Carolina	w(	Dy	O	£+L:- £	Date:		8/3/2	020		
hold, incorrect preservative	out of temp, incorrect	containers).	omphailt.	c sample	a, a copy c	a uns iorr	ıı wılı be se	iit to the No:	ın caroli	na DEHNK CE	rtificatio	π υπιce ( i.e out of

# Internal Transfer Chain

Samples Pre-Logged into eCOC. ×

Workorder: 10526992

7/31/2020 × Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Results Requested By: Requested Analysis

8/7/2020

Pace Analytical

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Suite 200 Minneapolis, MN 55414

Phone (612)607-1700

Ormond Beach, FL 32174 Phone (386)672-5668

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

 $\times$ 

AG1R Other

> Drinking Matrix

10526992001 Lab ID

7/31/2020 12:52

PS

Date/Time Collect

Sample Type

Item Sample ID

793958

LAB USE ONLY

Date/Time

Received By

Date.Time

Released By

**Transfers** 

Comments

アッカ マン

Samples Intact Y or

Received on Ice Y or N

Custody Seal Y or N

ပွ

Cooler Temperature on Receipt

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009

## Pace Analytical

# Document Name: Sample Condition Upon Receipt Form Document No.:

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

PM: SMM

Que Date: 08/07/20

m (SCUR)

Projec Project Manage

CLIENT: PACMIN

Date and Initials of	f person:
Examining contents:	TA
Label:	.10
Deliver:	
pH:	

Client			Label:
Client:			Deliver: pH:
Thermometer Used: 1-5 (19)	Date: 8/4/2	∂ Time: ∐!	22 Initials: (EJ
State of Origin:	☐ For WV p	rojects, all containers veri	fied to ≤6 °C
Cooler #1 Temp. °C (Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp. c (Visual)			Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)	•		Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #5 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #6 Temp. C(Visual)			Samples on ice, cooling process has begu
Courier: Fed Ex UPS U	SPS Client Cor	mmercial  Pace	Other
Shipping Method: ☐ First Overnight ☐ Prio	rity Overnight	Overnight   Ground	d □ International Priority
□ Other			
Billing: ☐ Recipient ☐ Sende	r	☐ Credit Card	□ Unknown
Tracking #	26 7523	5670	
Custody Seal on Cooler/Box Present: Yes	□No Seals int	act: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bubble	Bags None Oth	er	
Samples shorted to lab (If Yes, complete)	Shorted Date:		ed Time: Qty:
Chain of Custody Present	✓Yes □ No □N/A	omments:	
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Name COC	ØYes □ No □N/A		
Samples Arrived within Hold Time	ZYes □ No □N/A		
Rush TAT requested on COC	QYes □ No □N/A	Due 817	
Sufficient Volume	□Yes □ No □N/A	3.7	
Correct Containers Used	☐Yes ☐ No ☐N/A		
Containers Intact	Yes 🗆 No LIN/A		
ample Labels match COC (sample IDs & date/time of ollection)	ØYes □ No □N/A		
Il containers needing acid/base preservation have been		1	Preservation Information;
hecked.  Il Containers needing preservation are found to be in	Yes □ No □N/A	Preservative	
ompliance with EPA recommendation:	□Yes □ No □N/A	Lot #/Trace # Date:	Time:
eadspace in VOA Vials? ( >6mm):	100000000000000000000000000000000000000	Initials:	
rip Blank Present:	□Yes □ No □N/A		
	□Yes □ No □N/A	-	
lient Notification/ Resolution:  Person Contacted:		Deta/Fime:	
. Groon Contacted.		Date/Time:	
omments/ Resolution (use back for additional o	comments):		
Project Manager Review:			Deter
. ojo ot managor review.			Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Enclosures

Project Manager







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958 New Jersey Certification #: FL022

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525693001	13988	Drinking Water	07/21/20 13:30	07/21/20 14:40





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525693001	13988	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

Date: 07/29/2020 09:39 AM

Sample: 13988	Lab ID: 10	<b>Lab ID: 10525693001</b> Collected: 07/21/20 13:30 R		Received: 07	/21/20 14:40 I	Matrix: Drinking Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
	Pace Analyti	cai Services -	Ormond Beach						
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 14:26	123-91-1		
1,4-Dioxane-d8 (S)	101	%	70-130	4	07/27/20 10:45	07/20/20 14:26			



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525693001

METHOD BLANK: 3543368

Date: 07/29/2020 09:39 AM

Matrix: Water

Associated Lab Samples: 10525693001

Blank Reporting

Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

Parameter	Units	10525818001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94 101	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525693

Date: 07/29/2020 09:39 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525693

Date: 07/29/2020 09:39 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525693001	13988	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ction A	Section B	completed accurately.
ĕΙ	Required Project Information:	Invitor Let
- [	Report To: Kelly Jaworski	Affering Internation
Idress: 1800 Pioneer Creek Center	Copy To:	Page:
aple Plain, MN 55359		Company Name:
nail: kjaworski@wenck.com	Purchase Order#:	Address;
Fax	Project Name: Water Gramlin Well Sampling 2505 0047	race Quote:
equested Due Date: C can C AG	Project # Rob 21, 06 - 19-017	Face rights manager, annika.asp@pacelabs.com,
	) h	50004, 4
•		requested Applysis Fileced (y/N)
	cope cope confected	Preservatives
	IN COOR	
SAMPLE ID	START ENERT	S
One Character per box.  (A-Z, 0-91, -)  Sample Ids must be unique	Jeyr Tay	€0
	AMAR HATAM	
88681	7/1/2 1330	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
સ		
4.		
5		
9		
8		
6		
0		
2		
12.		
ADDITIONAL COMMENTS	RELINQUISHED BY LAFFILATION DATE	TIME ACCEPTED BY / AFFILLATION
ysis to be performed at Pace FL	M. Roffle Pres Hills	0905 But Inchient 11 2000
	1/2	110 X (1.31)(V
		13 - RA 12 - 21 - 13 - 13 - 13 - 13 - 13 - 13 -
	The state of the s	
Pa	SAMPLER NAME AND SIGNATURE DOWNTHE	URE
ge 9	CICAN THE SE SAMPLER	3 0
of 12	The same of the sa	PTT Signed:
2		CO CO CO ICE ICE ICE



hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

Sample Condition Upon Receipt  Client Name:			Pre	oject #:	WO#	:105	25693	
Wench Associates I.	ric .				PM: AKA		Due Date: 07	(20 (00
Courier:	□us		— □ <b>k</b> í		CLIENT:	-	oue Date: 07,	/ 28/20
☐Pace ☐SpeeDee Tracking Number:	□Co	mmerci	al See Ex	ceptions				
	<u> </u>			┙ <u> </u>				
	No _	Sea -	als Intact	? ∐Yes	No	Biological Ti	issue Frozen? Y	es ∐No ∭N/A
Packing Material: Bubble Wrap Bubble Ba		None	☐Oth	er:		_ 1	Temp Blank? 💹	Yes No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of I	ce:	ØWet □B	Blue 🔲	None 🔲 D	ry	
Did Samples Originate in West Virginia? ☐Yes ☐No	Wei	re All Co	ntainer 1	Temps Taken	? □Yes □	No N/A		
Temp should be above freezing to 6°C Cooler Temp Rea	d w/tem	ıp blank	; <u> </u>	1.6,1.	.2		age Corrected Tem	•
Correction Factor: 1000 Cooler Temp Corrected	d w/tem	n blank	•	1.6, 1.	2	oc (no	temp blank only): °C	See Exceptions  1 Container
USDA Regulated Soil: (N/A water sample Other:	,	) Didiik	-		als of Perso	<del>-</del>		7/21/20
Did samples originate in a quarantine zone within the Unite	d States:	, : AL, AR,	CA, FL, GA				source (internationa	
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check ma	ıps)? [	Yes	□No	Hawaii ar	nd Puerto Ric	o)? [	]Yes □No	,,
If Yes to either question, fill out a R	egulated	Soil Ch	ecklist (F	-MN-Q-338)	and include			
	-J·/					COM	MENTS:	
Chain of Custody Present and Filled Out? Chain of Custody Relinquished?	Ves	□No	-	1.				
Sampler Name and/or Signature on COC?	<del>//</del>	□No		2.				= 1/2-1/2
Samples Arrived within Hold Time?	Yes Ves	∐No □No	□N/A	3. 4.				
Short Hold Time Analysis (<72 hr)?	☐Yes	No No		5. Fecal	Coliform H	PC Total Coli	form/E coli BOD/cB	OD Hex Chrome
Rush Turn Around Time Requested?	√Yes	□No		6. 5 day			rtnopnosotnei	
Sufficient Volume?	Yes	□No		7.	<del>/</del>		,	
Correct Containers Used?	□√les	□No		8.	-			
-Pace Containers Used?		□No		"				
Containers Intact?	Wes	□No		9.				
Field Filtered Volume Received for Dissolved Tests?	□Yes	□No	ØN/A	10. Is sedi	iment visible	in the dissolv	ed container? Ye	s No
Is sufficient information available to reconcile the samples	1			11. If no, wr	rite ID/ Date/1	ime on Contain	er Below:	See Exception
to the COC?	Yes	□No						
Matrix: ☐Water ☐Soil ☐Oil ☐Other	<del>/</del>							<u>.</u>
All containers needing acid/base preservation have been checked?	∐Yes	□No	ØN/A	12. Sample #	#			
All containers needing preservation are found to be in	∐Yes	□No	ØN/A	· □ N	NaOH	∏ HNO₃	∐H₂SO₄ [	Zinc Acetate
compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)			•					
(mes) 1204) 12pm, memory summe, mesh 12 cyaniae			,	Positive for I	Res. TYes			See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	☐Yes	□No	<b>⊠</b> N∕a	Chlorine?	□No	рН Рар	er Lot#	□
DRO/8015 (water) and Dioxin/PFAS				Res. Chlorine	e 0-6 F	Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	□Yes	[TN-	ZN/A	13.				See Exception
Headspace in VOA Vials (greater than 6mm)?	□ Yes □ Yes	∐No ∐No	⊿n/A ⊿n/A	15.			•	
Trip Blank Present?	Yes	□No	Z/N/A	14.				
Trip Blank Custody Seals Present?	Yes	□No	[☑Ñ/A	Pace Ti	rip Blank Lot	# (if purchase	ed):	
CLIENT NOTIFICATION/RESOLUTION						Field Data	Required? Yes	No
Person Contacted: Comments/Resolution:				Date/Time	e:			
Comments/nesolution,								
Project Manager Review:	w(	) SF	)		Date:	7/22/20	)20	

Page 10 of 12

FMT-ALL-C-002rev.00 24March2009

# Internal Transfer C x Samples Pre-Logged into

Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10525693

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5666

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

× 7/21/2020

Pace Analytical

Requested Analysis

Results Requested By: 7/28/2020

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

AAASSO3

LAB USE ONLY

×

Drinking Matrix

10525693001

7/21/2020 13:30

PS

Lab ID

**Date/Time** Collect

Sample Type

Item | Sample ID

13988

Date/Time

Received By

Date/Time

Released By

Transfers

11/2/12/11

KIST WATERCE THE

Received on Ice ( ) or N

Z

Samples Intact (Y) or

Custody Seal N or N

Cooler Temperature on Receipt 5,8°C

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#: 35565167

m (SCUR)	

Project i	1 07/20/20	Date and Initials of person:
Project Manager CLIENT	: PACMIN	Examining contents: The Label:
Client:		Deliver:
	1.1	рН:
Thermometer Used: 1349	Date: 7 23 W	Time:
State of Origin:		ontainers verified to ≤6 °C
Cooler #1 Temp. °C S (Visual) (	(Correction Factor) 5.8 (A	Actual) Samples on ice, cooling process has begu
Cooler #2 Temp.*C(Visual)	(Correction Factor) (A	Actual) Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)	(Correction Factor)(A	Actual) Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)(A	
Cooler #5 Temp.°C(Visual)	(Correction Factor)(A	Actual) Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)	(Correction Factor)(A	Actual) Samples on ice, cooling process has begu
	USPS Client Commercial	
	riority Overnight	☐ Ground ☐ International Priority
☐ Other  Billing: ☐ Recipient Sen	dos C Third Put. C O No.	
	A	Card ☐ Unknown
Tracking #1320	1523 2854	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	ole Bags  □None  □Other Shorted Date: Comments	Shorted Time: Qty:
Chain of Custody Present	QYes □ No □N/A	
Chain of Custody Filled Out	No DNA	
Relinquished Signature & Sampler Name COC	NYes DNo DN/A	
Samples Arrived within Hold Time	NYes □ No □N/A	
Rush TAT requested on COC	Yes   No   N/A 7/75/7	0
Sufficient Volume	QYes □ No □N/A	
Correct Containers Used	O Tyes O No ON/A	
Containers Intact	Yes No N/A	
Sample Labels match COC (sample IDs & date/time of collection)	Yes □ No □N/A	-
All containers needing acid/base preservation have be checked.	DE 28	Preservation Information:
All Containers needing preservation are found to	81.11	Preservative: Lot #/Trace #:
compliance with EPA recommendation:	) The HIND MANY	Date:Time:
Exceptions: VOA, Coliform, TOC, O& Headspace in VOA Vials? ( >6mm):		Initials;
Frip Blank Present:	□Yes □ No □N/A	
	□Yes □ No ISN/A	
Client Notification/ Resolution: Person Contacted:	Date/T	ime:
Comments/ Resolution (use back for additional	ıl comments):	
Project Manager Review:		Date:





July 31, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

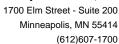
Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526359001	1000023766	Drinking Water	07/27/20 09:33	07/27/20 14:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526359001	1000023766	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

Date: 07/31/2020 12:08 PM

Sample: 1000023766	Lab ID: 10	526359001	Collected: 07/27/2	20 09:33	Received: 07	/27/20 14:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	•		2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/29/20 12:26	07/30/20 13:01	123-91-1	
•		%			07/29/20 12:26			



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

QC Batch: 652249

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Analyzed

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10526359001

METHOD BLANK: 3546520

Matrix: Water

Associated Lab Samples: 10526359001

Blank Reporting
Parameter Units Result Limit

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/30/20 08:29

 1,4-Dioxane-d8 (S)
 %
 88
 70-130
 07/30/20 08:29

LABORATORY CONTROL SAMPLE: 3546521

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 2 1.9 94 70-130 ug/L 1,4-Dioxane-d8 (S) 98 70-130 %

LABORATORY CONTROL SAMPLE: 3546522

Date: 07/31/2020 12:08 PM

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 ND 98 50-150 1,4-Dioxane-d8 (S) % 97 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3546523 3546524

			MS	MSD								
		10526212001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.1	2.1	1.7	1.8	80	84	70-130	2	20	
1,4-Dioxane-d8 (S)	%						90	91	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526359

Date: 07/31/2020 12:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526359

Date: 07/31/2020 12:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526359001	1000023766	EPA 522	652249	EPA 522	652612



	Pace Analytical WWW.PACELASS.COM	CHAIN-OI The Chain-of-C	F-CUSTODY / Analytical Request Document Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.
ection			Section C
mpar	ed Client Information:  19: Wenck Associates, Inc.	Required Project Information:	Invoice Information:
Idress	175,1617,25556405, 176	Report To: Kelly Jaworski Copy To:	Attention: Page: 1 Of
	Plain, MN 55359		Company Name:  Address:
nail: ione:	kjaworski@wenck.com	Purchase Order#:	
	NONE Fax:	Project Name: Water Gremlin Well Sampling - 2606-0017	Pace Quote:  Pace Project Manager: annika.asp@pacelabs.com,  Regulatory/Agency
<u> </u>	J 3/4) 161	Project # \$002606 - 19 -017	Pace Profile #: 39664, 4
	Wate	Water WW SI P SI START END  WP AR OOT TS  PART OO NALL HAVE SO DATE TIME DATE TIME START  RELINQUISHED BY AFFILIATION DATE  PART OO TO START SO DATE  RELINQUISHED BY AFFILIATION DATE  PART OO TO START SO DATE  RELINQUISHED BY AFFILIATION DATE  PART OO TO START SO DATE  RELINQUISHED BY AFFILIATION DATE  PART OF THE START SO DATE  PART OF THE ST	Preservatives  What is a control of the property of the proper
		SIGNATURE of SAMPLER:	Don Lgrzon  Date Signed: 7/27/20  Date Signe

siloqeanniM	ENV-FRM-MIN4-0150 Rev.00
- Pace Analytical Services -	Document No.:
t io £ ageq	Sample Condition Upon Receipt (SCUR) - MM
Document Revised: 27Mar2020	Document Name:



Page 10 of 12

rth Carolina DEHNR Certification Office ( i.e. out of	is form will be sent to the Nor	inż copy of thi	səjdwes a	compliance	Morth Carolina ct containers).	s a discrepancy attecting tive, out of temp, incorre	note: wnenever tnere i hold, incorrect preservat
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porchased):	Pace Trip Blank Lot # (if p	A/NZ	ON	SēX.□		Stresent?	Trip Blank Custody Sea
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n Container Below: See Exception	. If no, write ID/ Date/Time o	. <sub>++</sub>	oN□	29Ÿ <b>K</b>	səidwes əm	on available to reconcile	is sufficient information to the COC?
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trite Orthophos Other	Turbidity Nitrate Ni	-	····	· · · · · · · · · · · · · · · · · · ·			
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Labeled by:

FMT-ALL-C-002rev.00 24March2009

Samples Pre-Logged into eCOC.

Workorder: 10526359

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#	<b>6018</b>
3	3556

te Of Origin: MN t. Needed:

Yes

7/27/2020 ×

Pace Analytical ®

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Owner Received Date:

Requested Analysis

Results Requested By: 8/3/2020

1,4-Dioxane in DW by 522 (Pace FL)

Ormond Beach, FL 32174 Phone (386)672-5668

Preserved Containers MASS203

Drinking Matrix 10526359001 Lab ID 7/27/2020 09:33 Date/Time Collect Sample Туре PS

> Sample ID 1000023766

Item

LAB USE ONLY

 $\times$ 

Released By

Transfers

Received By Date/Time

Z Yor **Custody Seal** Cooler Temperature on Receipt

Received on Ice

Z

Samples Intact Y or

Z 0

Comments

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からなっ

Date/Time

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Project Manager Review:

Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Date:

Project Manag			
	: SMM Due Date: IENT: PACMIN	08/03/20	Date and Initials of person: Examining contents: Label:
Clie			Deliver: pH:
Thermometer Used: 134	19 Date: 7/28/	3.0 Time: 10	
State of Origin:	For W	N projects, all containers verifi	ed to ≤6 °C
Cooler #1 Temp. C 3, U (Visua	I)(Correction Factor)	3-5 (Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp. C5 (Visua	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visua	l)(Correction Factor) _	(Actual)	<ul> <li>Samples on ice, cooling process has begu</li> </ul>
Cooler #4 Temp. °C(Visua	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #5 Temp. °C(Visual	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #6 Temp. C(Visual	)(Correction Factor) _	(Actual)	Samples on ice, cooling process has begu
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Chain of Custody Present	Ø1Yes □ No □N/A	Comments:	
Chain of Custody Filled Out	ØYes □ No □N/A		
Relinquished Signature & Sampler Nam	- L.		
Samples Arrived within Hold Time	Yes \( \sigma \text{No } \sigma \text{No } \sigma \text{NA}		
Rush TAT requested on COC	□Yes ☑No □N/A		
Sufficient Volume	□Mes □ No □N/A		
Correct Containers Used	ØYes □ No □N/A		
Containers Intact	□Yes □ No □N/A		
Sample Labels match COC (sample IDs & da	ate/time of		
collection) All containers needing acid/base preservation	□Yes □ No □N/A		
checked.	D∫Yes □ No □N/A	Preservative:	Preservation Information:
	d to be in 9 □Yes □ No □N/A	Lot #/Trace #:	
		Date:	Time:
ompliance with EPA recommendation: Exceptions: VOA, Coliform,	□Yes □ No ФN/A		
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All Containers needing preservation are foun compliance with EPA recommendation:  Exceptions: VOA, Coliform, Headspace in VOA Vials? ( >6mm):  Trip Blank Present:  Client Notification/ Resolution:  Person Contacted:			
Exceptions: VOA, Coliform, Leadspace in VOA Vials? ( >6mm):  Trip Blank Present:  Client Notification/ Resolution: Person Contacted:	□Yes □ No □N/A		
compliance with EPA recommendation: Exceptions: VOA, Coliform, Headspace in VOA Vials? ( >6mm): Trip Blank Present: Client Notification/ Resolution:	□Yes □ No □N/A		





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

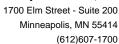
Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

Lab ID	Sample ID	Matrix	Date Collected	Date Received		
10526073001	4100 Scheuneman Rd	Drinking Water	07/23/20 08:55	07/23/20 15:25		
10526073002	Dup072320	Drinking Water	07/23/20 00:00	07/23/20 15:25		





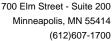
### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526073001	4100 Scheuneman Rd	EPA 522	СТВ	2	PASI-O
10526073002	Dup072320	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

Date: 07/29/2020 03:09 PM

Sample: 4100 Scheuneman Rd	Lab ID: 10526073001		Collected: 07/23/20 08:55		Received: 07	/23/20 15:25 I	5 Matrix: Drinking Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
522 MSS 1,4 Dioxane	Analytical Met	nod: EPA 52	22 Preparation Metho	od: EPA	522					
	Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	07/27/20 10:45	07/28/20 17:55	123-91-1			
1,4-Dioxane-d8 (S)	94	%	70-130	1	07/27/20 10:45	07/28/20 17:55				
Sample: Dup072320	Lab ID: 105	26073002	Collected: 07/23/2	20 00:00	Received: 07	/23/20 15:25 <b>I</b>	Matrix: Drinking	Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
522 MSS 1,4 Dioxane	Analytical Met	nod: EPA 52	22 Preparation Metho	od: EPA	522					
	Pace Analytica	I Services -	Ormond Beach							
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 18:43	123-91-1			
1,4-Dioxane-d8 (S)	76	%	70-130		07/27/20 10:45	07/00/00 40 40				



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin Project: 10526073

Pace Project No.:

QC Batch Method:

QC Batch: 651671

EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526073001, 10526073002

METHOD BLANK: 3543368

Matrix: Water

Associated Lab Samples:

Date: 07/29/2020 03:09 PM

10526073001, 10526073002

Blank Parameter Units Result

Limit Analyzed

Reporting

Qualifiers

1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) 98 70-130 07/28/20 12:00 %

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371						3543372							
			MS	MSD									
		10525818001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
1,4-Dioxane (p-Dioxane)	ug/L	ND	20.4	20.2	19.6	19.0	96	94	70-130	3	20		
1,4-Dioxane-d8 (S)	%						101	101	70-130				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526073

Date: 07/29/2020 03:09 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526073

Date: 07/29/2020 03:09 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526073001	4100 Scheuneman Rd	EPA 522	651671	EPA 522	652021
10526073002	Dup072320	EPA 522	651671	EPA 522	652021

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4

Samples Intact (V/V) ŏ Regulatory Agency SAMPLE CONDITIONS 603 WO#: 10526073 Page: ВЯ Received on CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. TEMP In C TIME 17:00 1533 Mich DATE 10526073 annika.asp@pacelabs.com, ACCEPTED BY (AFFILIATION enexolb-4,1 SS3 N/A 1seT sesylanA Other Methanol Preservatives Na2S203 Pace Project Manager. Pace Profile #: 39664, 4 HOBN 4530r Invoice Information: Attention: Company Name: НСІ ниоз Pace Quote: ₽OSZH Address: 2060 スジタ ₹ **§** Unpreserved # ОГ СОИТАІИЕВЗ SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION SIGNATURE of SAMPLER: 7/23/2 PRINT Name of SAMPLER: Water Gremlin Well Sampling - 2606-0017 COLLECTED RELINQUISHED BY / AFFILIATION Project # 80026.06-19-017 TIME START G7/23/20 16 Required Project Information: DATE Report To: Kelly Jaworski SAMPLE TYPE (G=GRAB C=COMP) Purchase Order# MATRIX CODE (see valid codes to left) roject Name: Section B Copy To: MATROX
Dinisting Water
Water
Waste Water
Product
SolifSolid
Oil
Wipe
Air
Other य 4100 Schevneman One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique ADDITIONAL COMMENTS Fax 1800 Pioneer Creek Center quested Due Date: 5 day - SH SAMPLE ID 0282704vd equired Client Information: tail: kjaworski@wenck.com ysis to be performed at Pace FI aple Plain, MN 55359 1 0 0 0 4 3 7 2 1 TEM #

Page 9 of 10

האאז Custody Sealed Cooler

(N/X)



### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.: ENV-FRM-MIN4-0150 Rev.00 Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -**Minneapolis** 

### Project #: 10526073 Sample Condition **Client Name:**

Upon Receipt	Wenck						M	<u>/# · T</u>	UJ.	<u> </u>	<u> </u>	
Courier:	Fed Ex [	UPS SpeeDee	Us	SPS ommercia	_ ☑C al See Ex		PM: CLIE	AKA ENT: WENC		ue Date:	07/30	/20
Tracking Number:												
Custody Seal on Coo		ÎYes 🔲 N		Sea	ls Intaci	:? / Yes	i □!	No <b>Biolo</b>	gical T	issue Frozen?	∐Yes	□no Øn/a
_	_	Bubble Bag	s [	None	Oth	ner:			7	Temp Blank?	Yes	s 🗌 No
Thermometer:	] T1(0461)	T3(0459)		Type of i	ce: Æ		Blue	□None	□D	ry [Melte	d	
Did Samples Originat	e in West Virginia? □Y	es 🗹 No	We	re All Co	ntainer	Temps Tak	ken? ∐Y	es 🗌 No 🛭	N/A			
Temp should be above fre	ezing to 6°C <b>Cooler</b>	Temp Read	w/tem	p blank	:C	15,	1.7	°C	Avera	age Corrected	Temp	
Correction Factor:	Cooler Tem	p Corrected	w/tem	p blank	<u>. O</u> .	5,1	7	°C	(na	temp blank o		See Exceptions  1 Container
	( N/A, water sample,			)		Date/li	nitials of	Person Exar	nining	Contents:	N 7	232e
Did samples originate in	n a quarantine zone with	in the United	d States:	AL, AR,	_	-			_	source (interna	• •	ncluding
	, OK, OR, SC, TN, TX or V				∐No			erto Rico)?		_YesN		
it	Yes to either question,	fill out a Re	gulated	Soil Ch	ecklist (l	-MN-Q-33	88) and i	nclude with :	SCUR/C	COC paperwo	rk.	
			<del></del>						COM	MENTS:		
<b>Chain of Custody Presen</b>	t and Filled Out?		☑ Yes	□No		1.						
Chain of Custody Relinqu	uished?		✓Yes	□No		2.						
Sampler Name and/or Si	gnature on COC?		Yes	□No	□n/a	3.						
Samples Arrived within I	lold Time?		Yes	□No		4.	.,					
Short Hold Time Analysi	s (<72 hr)?		∐Yes	∕ZÍNo						form/E coli Bo		Hex Chrome
Rush Turn Around Time	Requested?		Yes	□No		6.						
Sufficient Volume?		/	Yes	□No		7.						
Correct Containers Used	?		Yes	□No		8.						
-Pace Containers Used			Yes	□No		<b>o.</b>						
Containers Intact?	A (		Yes			9.					<del></del>	
						<u> </u>						
Field Filtered Volume Re			Yes	∐No	/Z]N/A	<del>  </del>				ed container?	Yes _	No
Is sufficient information a to the COC?	available to reconcile the	•	∕∑Yes	□No		11. If no,	write ID/	Date/Time on	Contain	er Below:		See Exception
Matrix: ☐Water ☐Soil [	Oil Other	,										
All containers needing ac checked?		ve been	∐Yes	□No	∏N/A	12. Samp	le#					
All containers needing pr compliance with EPA reco	ommendation?	l	∐Yes	□No	Øn/a		NaOH	□ни	O <sub>3</sub>	∐H₂SO₄	∐zi	inc Acetate
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaO	OH >9 Sulfide, NaOH>12	Cyanide)					_	_				
Frantisms VOA Californ	- TOC/DOC Oil and Co		∕ÍYes	□No	□N/A	Positive f		Yes				See Exception
Exceptions: VOA, Coliforr DRO/8015 (water) and Di		ise,	<u>K</u> 1.63		□! <b>!</b> /^	Chlorine			pH Pap	er Lot#		
DIVO/BOTO (Mater) alla Di	OXIII/II BO					Res. Chlo	rine	0-6 Roll		0-6 Strip	0-	-14 Strip
Extra labels present on so	nil VOA or WIDRO contain	ners? I		П.,	<del></del>	13.		<u> </u>				Can Franchisco
Headspace in VOA Vials (			∐Yes ∐Yes	∏No ∏No	☑N/A ☑N/A	15.						See Exception
Trip Blank Present?	<u> </u>		Yes	□No	切 <sub>N/A</sub>	14.						
Trip Blank Custody Seals I	Present?		Yes	□No	ŪN/A		e Trip Bla	ank Lot # (if pu	ırchase	d):		
			<del></del>								7., -	
Person Contacted:	ICATION/RESOLUTION					Det- /m		Field	ı Data I	Required?	Yes	_INo
Comments/Resolution:						Date/Ti	me:					
comments/ Resolution:										-		
Oraiost Manage	ror Boulous	1000	0	10					7/04	/0000		
Project Manag		h Carolina co	noline		2.000		Date:		1/24	/2020		uren da e e

hold, incorrect preservative, out of temp, incorrect containers).

Page 10 of 10





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526072001	521371	Drinking Water	07/21/20 09:25	07/23/20 15:25





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526072001	521371	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

Date: 07/29/2020 03:09 PM

Sample: 521371	Lab ID: 10	526072001	Collected: 07/21/2	20 09:25	Received: 07	/23/20 15:25	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 18:1	1 123-91-1	
1,4-Dioxane-d8 (S)	72	%	70-130	4	07/27/20 10:45	07/20/20 40.4	1	



### **QUALITY CONTROL DATA**

B002606-19-017 Water Gremlin W Project:

Pace Project No.: 10526072

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Description:

Analysis Method:

EPA 522

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526072001

METHOD BLANK: 3543368

Date: 07/29/2020 03:09 PM

Matrix: Water

Associated Lab Samples: 10526072001

Blank Reporting Parameter Units Qualifiers Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/28/20 12:00 ug/L 1,4-Dioxane-d8 (S) % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE:

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

Parameter	Units	10525818001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94 101	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526072

Date: 07/29/2020 03:09 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10526072

Date: 07/29/2020 03:09 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526072001	521371	EPA 522	651671	EPA 522	652021

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CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Section C Invoice Information: Section B Required Project Information: ection A squired Client Information:

mpany:		Report To: Kelly Jaworski	Attention:
2   2	1800 Proneer Creek Center	Copy To:	Name:
1 18	apre radii, min 33339	Discharge Calant	Address:
9	Month of the contract of the c		
Sales	Suested Due Date:	Project Name: Water Gremlin Well Sampling - 2606-0017	<u> </u>
	t b	Iriged #. 15002606-19-617	Pace Profile #: 39664, 4
	MATRIX Profession to	cobe cobe comp.	Preservatives >
	SAMPLE ID Solisoid Officer	WW	
# MBTI	One Character per box. Wipe (A-Z, 0-9 /, -) Air Cher Sample Ids must be unique Tissue	충 유 유 유 adop xirtam	HOOS
Ţ	521371	\$ 6.5 %	
72			
က			
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2			
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-			
8			
	ADDITIONAL COMMENTS.	RELINQUISHED BY: AFFILIATION DATE	TIME ACCEPTED BY (AFFILIATION
ysis to t	ysis to be performed at Pace FL	M. Bottle Des HIGH,	
		7674	(32) 1 DATE WAS 12:40
			A A S I ASIMINITY SOLD IN
	: Pa	SAMPLER NAME AND SIGNATURE	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ge 9 (	FIGHT I Name of SAMPLER: (7)	Con Laiser

age 9 of 12

SIGNATURE of SAMPLER:

Samples Intact (Y/V)

Custody Sealed Cooler

Received on (V/V)

TEMP in C

# ace Analytical

hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -**Minneapolis** 

Sample Condition **Client Name:** WO#: 10526072 Project #: **Upon Receipt** Wenck Due Date: 07/30/20 Courier: □UPS USPS Client CLIENT: WENCK SpeeDee Commercial See Exceptions **Tracking Number:** Custody Seal on Cooler/Box Present?

□No Biological Tissue Frozen? Yes No N/A Seals Intact? □No Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: **□**Blue Type of Ice: □None □ Drv Meited T4(0254) 🗹 T5(0489) Did Samples Originate in West Virginia? ☐Yes ☑No Were All Container Temps Taken? ☐Yes ☐No ☐N/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank:\_ 0C **Average Corrected Temp** (no temp blank only): See Exceptions Correction Factor: + Cooler Temp Corrected w/temp blank: °C 1 Container **USDA Regulated Soil:** ( N/A, water sample/Other: Date/Initials of Person Examining Contents: 770 723201 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? □No Hawaii and Puerto Rico)? Yes If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: ſ∕ÍYes Chain of Custody Present and Filled Out? □No Chain of Custody Relinquished? **Z**Yes □No Sampler Name and/or Signature on COC? **☑**Yes □No □N/A 3. Samples Arrived within Hold Time? Yes □No 4. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome Short Hold Time Analysis (<72 hr)? Yes 17ÎNo ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other **Rush Turn Around Time Requested?** Yes No 6. Sufficient Volume? Yes □No 7. Correct Containers Used? ∕ZYes □No 8. -Pace Containers Used? ZÎYes ∐No Containers Intact? **⊠**Yes □No 9. Field Filtered Volume Received for Dissolved Tests? ØN/A Yes ∏No 10. Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? Yes □No Ш Matrix: Water Soil Oil Other All containers needing acid/base preservation have been 12. Sample # □No .∕∐N/A checked? All containers needing preservation are found to be in ØN/A ■ NaOH ☐ HNO<sub>3</sub> ☐H<sub>2</sub>SO<sub>4</sub> □No ☐Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception No Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, □N/A Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-14 Strip 0-6 Strip Extra labels present on soil VOA or WIDRO containers? IZN/A ☑N/A ∐Yes □No □No 13. See Exception Headspace in VOA Vials (greater than 6mm)? Yes Trip Blank Present? ∐Yes □No ØŊ/A 14. Trip Blank Custody Seals Present? Yes □No Ū⁄n/a Pace Trip Blank Lot # (if purchased):\_ CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No

Person Contacted: Date/Time: Comments/Resolution:

**Project Manager Review:** (mm) Date: 7/24/2020 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labeled by:

Page 10 of 12

# Internal Transfer Chai

Samples Pre-Logged into eCOC

Workorder: 10526072

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

	Mical	rww.pacelabs.com	
	e Anai	www.pa	
1	Pac		
1	/	1	

7/30/2020

Results Requested By:

× 7/23/2020

Workorder Name: B002606-19-017 Water Gremlin W

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414 Phone (612)607-1700

Suite 200

Phone (386)672-5668

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

LAB USE ONLY

Dripreserved MG1T(U)

Drinking Matrix

10526072001

7/21/2020 09:25

PS

Lab ID

Date/Time Collect

Sample Type

Item | Sample ID

521371

×

Date/Time

Comments

Received on Ice /

Z

Samples Intact

¥ o**r** 

**Custody Seal** 

Received By

Date/Time

Released By

Transfers

ZZ

ပ

Cooler Temperature on Receipt 47

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, July 24, 2020 11:43:19 AM

Page 11 of 12

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009



Client Notification/ Resolution: Person Contacted:

Project Manager Review:

Comments/ Resolution (use back for additional comments):

### Document Name Sample Condition Upon Receipt Form Document No.:

Document Revised May 30, 2018 Issuing Authority

F-FL-C-007 rev. 13 Pace Florida Quality Office Sample Condition Upon Receipt Form (SCUR) Project # Date and Initials of person: Due Date: 07/30/20 **Project Manager:** PM: SMM Examining contents: Label: CLIENT: PACMIN Client: Deliver: Thermometer Used Time: 1042 Initials: State of Origin: For WV projects, all containers verified to ≤6 °C (Correction Factor) 4-7 Cooler #1 Temp. °C Y. 6 (Visual) \_\_(Actual) Samples on ice, cooling process has begun Cooler #2 Temp. C\_\_\_\_(Visual) \_\_ \_\_\_\_\_(Correction Factor) \_\_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #3 Temp.°C\_\_\_\_ \_\_\_(Visual) \_\_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #4 Temp.°C\_\_\_\_ \_\_(Visual) \_\_\_(Correction Factor) \_\_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #5 Temp.\*C \_\_(Visual) \_\_\_\_(Correction Factor) \_\_\_\_(Actual) Samples on ice, cooling process has begun Cooler #6 Temp. C (Visual) (Correction Factor) (Actual) Samples on ice, cooling process has begun Fed Ex UPS USPS Client Commercial Pace Other Courier: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground Shipping Method: ☐ International Priority ☐ Other Billing: □ Recipient Sender ☐ Third Party ☐ Credit Card ☐ Unknown Tracking # Custody Seal on Cooler/Box Present: Seals intact: Yes No Ice: Wet Blue Dry None Packing Material: Bubble Wrap Bubble Bags □None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty:\_\_\_ Comments: Chain of Custody Present Yes □ No □N/A

Chain of Custody Filled Out	Yes	□ No □N/A	
Relinquished Signature & Sampler Name COC	Yes	□ No □N/A	
Samples Arrived within Hold Time	Yes	□ No □N/A	
Rush TAT requested on COC	□Yes	No ON/A	
Sufficient Volume	<b>∠</b> Yes	□ No □N/A	
Correct Containers Used	Ves	□ No □N/A	
Containers Intact	Ves	□ No □N/A	
Sample Labels match COC (sample IDs & date/time of collection)	Yes	□ No □N/A	
All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be in compliance with EPA recommendation.	Yes	□ No □N/A	Preservation Information: Preservative: Lot #/Trace # Date: Time:
Exceptions VOA, Coliform, TOC, O&G, C	arbamates		Initials:
Headspace in VOA Vials? ( >6mm):	□Yes	□ No DN/A	
Trip Blank Present:	□Yes	DNO DN/A	

Date/Time:

Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525816001	4134 Scheuneman Rd	Drinking Water	07/22/20 12:30	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525816001	4134 Scheuneman Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

Date: 07/29/2020 02:54 PM

Sample: 4134 Scheuneman Rd	Lab ID: 10	525816001	Collected: 07/22/2	20 12:30	Received: 07	//22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522								
	Pace Analyti	cal Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 16:35	5 123-91-1	
Surrogates								

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525816001

METHOD BLANK: 3543368

Date: 07/29/2020 02:54 PM

13308

Matrix: Water

Associated Lab Samples: 10525816001

Blank Reporting
Parameter Units Result Limit

 Parameter
 Units
 Result
 Limit
 Analyzed

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/28/20 12:00

 1,4-Dioxane-d8 (S)
 %
 98
 70-130
 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

Parameter	Units	10525818001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	ND	20.4	20.2	19.6	19.0	96 101	94 101	70-130 70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525816

Date: 07/29/2020 02:54 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525816

Date: 07/29/2020 02:54 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525816001	4134 Scheuneman Rd	EPA 522	 651671	EPA 522	652021

Pace Analytical www.paceabscom

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Regulatory Agency 8 seldmb8 SAMPLE CONDITIONS WO#:10525816 Page: Residual Chlorine (Y/V) Received on 7 LEMP IN C 3 1222 (23V 1/19/20 DATE wench annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION 522 1,4-dioxane N/A 189T seavishA Other lonsitieM Preservatives NezS203 Pace Project Manager: Pace Profile #: 39664, 4 ИвОН Invoice Information:
Attention:
Company Name:
Address: ЮН ниоз Pace Quote: H2SO4 Section C 12:30 Unpreserved TIME 1/22/00/12 z) SABNIATIVOD 40 # SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION Media H16/201 PRINT Name of SAMPLERS SIGNATURE of SAMPLER: Project Name: Water Grennin Well Sampling - 2606-0017
Project # 18 000 100 - 14 - 014 DATE TIME END DATE لي COLLECTED RELINQUISHED BY / AFFILIATION. TIME 3 750 START 7/24/ Required Project Information: Report To: Kelly Jaworski 9 (G=GRAB C=COMP) SAMPLE TYPE Jurchase Order#: (see valid codes to left) MATRIX CODE Section B Copy To: MATRIX
Dainking Water
Waste water
Waste water
Product
Soul/Soild
Oil
Wipe
Air Scholyeman One Character per box. (A-Z, 0-91, -) Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. ail: kjaworski@wenck.com equired Client Information: 124 rsis to be performed at Pace Ft aple Plain, MN 55359 quested Due Date: NONE

Page 9 of 12

(N/A)

ntact

WW Sealed Custod

(N/A)

## Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document Revised: 27Mar2020

Page 1 of 1

### Document No.: Pace Analytical Services -ENV-FRM-MIN4-0150 Rev.00 Minneapolis Sample Condition เมด# : 10525816 **Client Name:** Project #: **Upon Receipt** Wench Associates, Inc. Due Date: 07/29/20 PM: AKA Fed Ex □UPS **□USPS** Client CLIENT: WENCK Pace SpeeDee Commercial See Exceptions

Courier: **Tracking Number: Custody Seal on Cooler/Box Present?** Yes ΧNο Μo Seals Intact? Yes Biological Tissue Frozen? ☐ Yes ☐ No ☒N/A Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Type of ice: Wet □Blue □ None Melted T4(0254) 🛭 T5(0489) Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? 
☐Yes ☐No ☒N/A Temp should be above freezing to 6°C 2,1,2.5 Cooler Temp Read w/temp blank: **Average Corrected Temp** (no temp blank only): See Exceptions 21,25 Cooler Temp Corrected w/temp blank: **Correction Factor:** °C 1 Container USDA Regulated Soil: ( N/A, water sample/Other:\_ Date/Initials of Person Examining Contents: 101 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? □No Hawaii and Puerto Rico)? Yes □No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Chain of Custody Present and Filled Out? Yes No 1. Chain of Custody Relinquished? Yes □No 2. Sampler Name and/or Signature on COC? Yes □No □N/A 3. Yes Samples Arrived within Hold Time? □No 4. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Short Hold Time Analysis (<72 hr)? No □Yes ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other\_ 6. S Day TAY **Rush Turn Around Time Requested?** XÎYes □No Sufficient Volume? Yes 7. □No Correct Containers Used? Yes □No 8. -Pace Containers Used? **⊠**Yes □No **Containers Intact?** ✓Yes □No 9. □No Field Filtered Volume Received for Dissolved Tests? Yes **⊠**N/A 10. Is sediment visible in the dissolved container? Yes No is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? ₩es □No Matrix: ▼Water Soil Oil Other All containers needing acid/base preservation have been **∠Z**in/a 12. Sample # ☐ Yes □No checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO<sub>3</sub> H<sub>2</sub>SO<sub>4</sub> Zinc Acetate □Yes compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception □Yes Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. ØN/A N/A ☐ Yes See Exception □No Headspace in VOA Vials (greater than 6mm)? □Yes □No N/A N/A Trip Blank Present? **∐**Yes □No 14. Trip Blank Custody Seals Present? Yes □No Pace Trip Blank Lot # (if purchased):\_ CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

**Project Manager Review:** Date: 7/22/2020 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Page 10 of 12

Labeled by: M& U

# WO#:35565181 x Samples Pre-Logged into 35565181 Internal Transfer (

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Results Requested By: 7/22/2020 ×

7/29/2020

Pace Analytical ®

Workorder Name: B002606-19-017 Water Gremlin W

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Workorder: 10525816

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

LAB USE ONLY

bevieseived € 1 Drinking

Matrix

Lab ID

Date/Time Collect

> Type PS

> > 4134 Scheuneman Rd

Sample ID

Item

Sample

7/22/2020 12:30

10525816001

Received By 155 TIME Date/Time

0

Released By

Transfers

Custody Seal (T) or N Cooler Temperature on Receipt 5.8 °C

Received on Ice(Y) or

Samples Intact Y) or

Comments

0

1105/2011

Date/Time

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

n (SCUR)

Project i Project Manager

Due Date: 07/29/20

CLIENT: PACMIN

Date and Initials of person: Examining contents: Th

Client:		Deliver:	
	1	pH:	•
Thermometer Used: 1349 Date:	Z3 W Time:	((14Initials:	In.
State of Origin: Fo	· WV projects, all containe	ers verified to ≤6 °C	
Cooler #1 Temp. C S (Visual) (Correction Factor	<u> </u>	) Samples on ic	e, cooling process has begun
Cooler #2 Temp. °C 1-7 (Visual)(Correction Factor	1-8 (Actual		e, cooling process has begun
Cooler #3 Temp.°C(Visual)(Correction Factor	(Actual		e, cooling process has begun
Cooler #4 Temp.°C(Visual)(Correction Factor	(Actual	_	e, cooling process has begun
Cooler #5 Temp.°C(Visual)(Correction Factor	(Actual	Samples on ice	e, cooling process has begun
Cooler #6 Temp.°C(Visual)(Correction Factor)	(Actual	Samples on ice	e, cooling process has begun
Courler: Fed Ex UPS USPS Client Shipping Method: First Overnight Priority Overnight Star	Commercial D P	ace Other	iority
Billing: ☐ Recipient ☐ Sender ☐ Third Party	☐ Credit Card	□ Unknown	
	54	LI CHINIOWIT	
	als intact: Yes	No Ice: Wet Blue Shorted Time:	Dry None  Qty:
	Comments:		
Chain of Custody Present ☐ Yes ☐ No ☐N	/A		
Chain of Custody Filled Out Types INO IN			
Relinquished Signature & Sampler Name COC Syes O No ON			
Samples Arrived within Hold Time Syes □ No 5N	THE		
Rush TAT requested on COC	111111	7/29/20 Thu	A
Sufficient Volume QYes No No			
Correct Containers Used	- 1		
Containers Intact  Sample Labels match COC (sample IDs & date/time of COC)	/A	741	
Collection)  All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to been compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, Carbamates	Prese	Preservation Information; vative;  race #: Time;	
Headspace in VOA Vials? ( >6mm): □Yes □ No ℚN.	Ά		
Trip Blank Present: □Yes □ No □N	'A		
Client Notification/ Resolution: Person Contacted:	Date/Time:		
Comments/ Resolution (use back for additional comments):			-
Project Manager Review:		Date;	





August 11, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

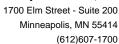
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

**Enclosures** 







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526995001	4134 Scheuneman Rd	Drinking Water	07/31/20 13:18	07/31/20 15:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526995001	4134 Scheuneman Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

Date: 08/11/2020 10:30 AM

Sample: 4134 Scheuneman Rd	Lab ID: 10	526995001	Collected: 07/31/2	20 13:18	Received: 07	/31/20 15:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA (	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane)	ND	ug/L	0.20	1	08/07/20 17:05	08/10/20 17:1	1 123-91-1	
Surrogates		•						

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

QC Batch: 655132

QC Batch Method: EPA 522 Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526995001

METHOD BLANK: 3561521

Date: 08/11/2020 10:30 AM

Matrix: Water

Associated Lab Samples:

10526995001

Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	0.20	08/10/20 11:01	
1,4-Dioxane-d8 (S)	%	117	70-130	08/10/20 11:01	

LABORATORY CONTROL SAMPLE:	3561522					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L		1.8	91	70-130	
1.4-Dioxane-d8 (S)	%			109	70-130	

LABORATORY CONTROL SAMPLE:	3561523					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	.19J	95	50-150	
1,4-Dioxane-d8 (S)	%			109	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561524					3561525							
			MS	MSD								
	3	5567038003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	32.8	2.1	2.1	38.2	37.6	255	224	70-130	2	20	M1
1,4-Dioxane-d8 (S)	%						107	110	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526995

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 08/11/2020 10:30 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526995

Date: 08/11/2020 10:30 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526995001	4134 Scheuneman Rd	EPA 522	655132	EPA 522	655489

# CHÁIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section A	•	Section B		,				Š	Section C																	
Kequired	<u> 9</u> 1	Required Project Information:	i i	formation:				Ě		hvoice information:	ij										Page	<u>e</u>	-	ŏ		
Company:	ار	Report To: Waterman, Shane	Naterr	man, Shane				Affe	Attention:																	
Address:	2080 Wooddale Drive	COPY TO: Kelly Jawarsk	3/6	1 1 am	DESC			ဦ	Company Name:	lame:																
Woodbury	Woodbury, MN 55125							Ago	ress:												B	Boulance	Regulatory Agency	7		
Email:	swaterman@wenck.com	Purchase Order	r#.					Pac	Pace Quote:	, i									L							Γ
Phone:	651-294-4588 Fax	Project Name:	1	22 Rist dfate	viale			18	e Proje	Mans	Joer	Sicolo	mon adelegen@nee evinge	1000	la stat				ľ					500		
Requeste	Requested Due Date: 544 - 5021	Project #. 13002666-19-017	Q	2606-	10-5	7		P.	e Profil	Pace Profile #: n		5			5								The second			T
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Page 9 o					SAMPLERN PRINT N	PLEK NAME AND SIGNATURE. PRINT Name of SAMPLER:	AMPLE		尨		वि	र्ड										O ni 9N	no bevied ()	sfody led sody	ubjea ()	
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### Pace Analytical®

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Page 1 of 1

Document Revised: 27Mar2020

Page 10 of 12

<u>CEG</u>3

Labeled by: \_\_\_\_\_

ENV-FRM-MIN4-0150 Rev.00

Pace Analytical Services -Minneapolis

Sample Condition Upon Receipt			P	roject #:	W	<b> 0#</b> :	10	<b>5269</b>	95	
Courier: Fed Ex UPS Pace SpeeDe		JSPS Commerc	 Cial See E	Client Exceptions		I: AKA .IENT: W	ENCK	Due Date	e: 08.	/07/20
Tracking Number:										<i>j</i>
Custody Seal on Cooler/Box Present? Yes	Ν̈́ο	Se	eals Intac	:t? □Ye	s A	lo Biole	ogical T	issue Frozen	P □Ve	s □No □M/A
Packing Material: Bubble Wrap Bubble B		None		her:	. اعقر					
					· · · · · · · · · · · · · · · · · · ·			Temp Blank?	N CONTRACTOR	es <u></u> No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)	,	Type of	fice:	_₩et	Blue	□None		ry Melt	ed	
Did Samples Originate in West Virginia? ☐Yes ☐No	We	ere Ali C	ontainer	Temps Ta	ken? ∐Ye	es ∐No {E	<b>∄√</b> /A			
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ter	mp blan	k:	1.4,	5-0	ос	Avera	age Correcte	Temp	
Correction Factor: Cooler Temp Correct	ed w/ten	nn blank	<b>.</b>	1.2,	4.8	°С	(no			See Exceptions
USDA Regulated Soil: ( N/A/water sample/Other:		ip Dialii	'							1 Container
Did samples originate in a quarantine zone within the Uni	ited States	s: AL, AR	.) , CA, FL, G					Contents: source (intern		7/3 1/7
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check n	naps)?	Yes	□No	Hawa	aii and Pue	rto Rico)?	Г	∃Yes □N	lo .	,
If Yes to either question, fill out a	Regulate	a Soli Ci	neckiist (	F-MN-Q-3	38) and ir	nclude with			rk.	
Chain of Custody Present and Filled Out?	-2-		<del></del>	+			COM	MENTS:		
Chain of Custody Present and Philed Out?	☑Yes ☑Yes	No □No		1. 2.					·	
Sampler Name and/or Signature on COC?	Ves	□No	□N/A	<del></del>		<del></del>				
Samples Arrived within Hold Time?	<b>⊉</b> ∀es	□No	٨٧٨ليا	4.						· · · · · · · · · · · · · · · · · · ·
Short Hold Time Analysis (<72 hr)?	∐Yes	D/No		5.	ecal Colifor urbidity [	m	otal Coli	form/E coli 🔲 E	OD/cBOI	Hex Chrome
Rush Turn Around Time Requested?	☐Yes	No		6.	*****					
Sufficient Volume?	- EV <sub>E</sub> s	□No		7.						
Correct Containers Used?	Yes	□No		8.						
-Pace Containers Used?	ØYes	□No				·				
Containers Intact?	Yes	∏No		9.						
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	ZN/A					ed container?	Yes	□No
Is sufficient information available to reconcile the samples to the COC?	Γ <del>ανί</del>	П.,	_	11. If no,	write ID/	Date/Time on	Contain	er Below:		See Exception
Matrix: Water Soil Oil Other	Hes	∐No								Ш
All containers needing acid/base preservation have been	□Yes	□No	,⊟ <b>n</b> √A	12. Samp	nie #			· .	····	
checked?	□1.62	Пио	HV/A	12. 54111	nc #					
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	.⊠Ñ/A	[	☐ NaOH	∐ HN	O <sub>3</sub>	∐H₂SO₄		Zinc Acetate
(mos) (12004) (2pri) (Morry 5 Sunide, Maoriy 12 Cyanide)			4	Positive f	or Res	Yes				See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	∐Yes	□No	ØN/A	Chlorine		=	рН Рар	er Lot#		
DRO/8015 (water) and Dioxin/PFAS				Res. Chlo	rine	0-6 Roll	<u> </u>	0-6 Strip	C	-14 Strip
Extra labels present on soil VOA or WIDRO containers?	Tv		Takir.	13.						C
Headspace in VOA Vials (greater than 6mm)?	Yes Yes	∐No ∐No	N/A	15.						See Exception
Trip Blank Present?	□Yes	□No	ØN/A	14.					-	
Trip Blank Custody Seals Present?	Yes	□No	\N/A	Pac	e Trip Blar	nk Lot # (if pu	ırchase	d):	***************************************	
CLIENT NOTIFICATION/RESOLUTION						Field	l Data F	Required? [	Yes [	□No
Person Contacted: Comments/Resolution:				Date/Ti	me:					
Decided Manager P										
Project Manager Review:	ب ب	yp		- <b>CAL</b> :- *	Date:	3	3/3/20	20		
lote: Whenever there is a discrepancy affecting North Carolina old, incorrect preservative, out of temp, incorrect containers).	Compilation	c sairy)ie	s, a copy c	or triis torm '	wiii be sen	t to the North	n Carolín	a DEHNR Certi	rication (	Office ( i.e out of

## MO#:35567493

Internal Transfer Chain of

x Samples Pre-Logged into eCOC.

Workorder: 10526995

Workorder Name: B002606-19-017 Water Gremlin

Subcontract To

Pace Analytical Ormond Beach

Yes Of Origin: MN Needed:

Pace Analytical

8/7/2020

Results Requested By:

7/31/2020 ×

Owner Received Date:

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL)

Phone (386)672-5668

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Preserved Containers

Lab ID Collect Date/Time Sample Type

AG1R

LAB USE ONLY

PS

7/31/2020 13:18

4134 Scheuneman Rd

Item | Sample ID

10526995001

Drinking Matrix

 $\times$ 

Date, Time

Released By

Transfers

Received By

Custody Seal Y or N ပ္ပ Cooler Temperature on Receipt

ō

Samples Intact Y

Received on Ice Y or N

1-349 U.V

07/1/X

Date/Time

Comments

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Monday, August 03, 2020 2:33:59 PM Page 11 of 12



### Document Name: Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#: 35567493

orm (SCUR)

Proje Project Mana

Project Manager Review:

PM: SMM

Due Date: 08/07/20

CLIENT: PACMIN

Date and Initials of person:
Examining contents:

LAGITHINING CONTENTS.	N/
Label:	. 17
Deliver:	
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Client.			Deliver:
T-50d	Date: 8/4/7	a - 111	pH:
Thermometer Used:	Date: DI \ [ ]	Time:	22 Initials:
State of Origin:	☐ For WV pr	ojects, all containers verifi	ed to ≤6 °C
Cooler #1 Temp. "C (Visual)	(Correction Factor) <u></u>	(Actual)	Samples on ice, cooling process has begur
Cooler #2 Temp. C (Visual)	(Correction Factor)	7(Actual)	Samples on ice, cooling process has begur
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begur
Shipping Method: ☐ First Overnight ☐ Pric			☐ Other
			☐ Unknown
Tracking #	7523	5670	
Custody Seal on Cooler/Box Present:	s	act: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bubble		,	0
	Shorted Date:		ed Time: Qty:
the state of the s	Shorted Bate.	Gildre	ed Time: Qty:
		omments:	
Chain of Custody Present	DYes □ No □N/A		
Chain of Custody Filled Out	□Yes □ No □N/A		
Relinquished Signature & Sampler Name COC	□Yes □ No □N/A		
Samples Arrived within Hold Time	Yes No No N/A	N = C17	
Rush TAT requested on COC	Yes No No N/A	Due 817	
Sufficient Volume	✓Yes □ No □N/A		
Correct Containers Used	ØYes □ No □N/A		
Containers Intact  Sample Labels match COC (sample IDs & date/time of	□Yes □ No □N/A		
ollection) dl containers needing acid/base preservation have beer	Yes 🗆 No 🗆 N/A		
hecked	Ves □ No □N/A	Preservative:	Preservation Information:
Il Containers needing preservation are found to be in ompliance with EPA recommendation:	ZYes □ No □N/A	Lot #/Trace # Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G		Initials:	Time
leadspace in VOA Vials? ( >6mm):	□Yes □ No □N/A		
rip Blank Present:	□Yes □ No ΦN/A		
Person Contacted:		Date/Time:	
omments/ Resolution (use back for additional	comments):		

Date





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525818001	4136 Scheuneman Rd	Drinking Water	07/22/20 12:55	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525818001	4136 Scheuneman Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

Date: 07/29/2020 08:20 AM

Sample: 4136 Scheuneman Rd	Lab ID: 10	525818001	Collected: 07/22/2	20 12:55	Received: 07	//22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA	522			
	Pace Analytic	cal Services -	Ormond Beach					
1 4 Diayana (n Diayana)	ND	ug/L	0.20	1	07/27/20 10:45	07/29/20 14:59	123-01-1	
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.20	'	07/27/20 10.43	07/20/20 14.30	123-31-1	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Analyzed

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525818001

METHOD BLANK: 3543368

Date: 07/29/2020 08:20 AM

Matrix: Water

Associated Lab Samples: 10525818001

Blank Reporting
Parameter Units Result Limit

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/28/20 12:00

 1,4-Dioxane-d8 (S)
 %
 98
 70-130
 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

MS MSD 10525818001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 20.2 96 70-130 3 20 ug/L 20.4 19.6 19.0 94 1,4-Dioxane-d8 (S) 101 % 101 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525818

Date: 07/29/2020 08:20 AM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525818

Date: 07/29/2020 08:20 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525818001	4136 Scheuneman Rd	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section B

Pace Analytical
www.pacelass.com

ŏ Intact (Y/V) 8 SAMPLE CONDITIONS SeldmbS State / Location MO#: 10525818 ኢየስን 2 Cooler Sealed Custod Page: (V/V) Residual Chlorine (Y/N) Received on R 7 LEMP IN C 00:31 1249 (7.12mg 1/19/20 DATE annika.asp@pacelabs.com, ACCEPTED BY JAFFILLATION 522 1,4-dioxane N/A teeT sesylanA Other lonsdieM Preservatives NaZSZO3 Pace Project Manager: Pace Profile #: 39664, 4 HOBN Invoice Information:
Attention:
Company Name: 6 3cm НСІ ниоз Pace Quote: #OSZH Address: 2/24 (2:44 Hile/201905 Unpreserved PRINT Name of SAMPLERS 1/22/W 1321 # OF CONTAINERS SIGNATURE of SAMPLER SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION Project Name: Water Gremlin Well Sampling - 2506-0017 DATE TIME 1285 END DATE COLLECTED RELINQUISHED BY LAFFILIATION TIME 12/2 START Required Project Information: Report To: Kelly Jaworski (G=GRAB C=COMP) 4 SAMPLE TYPE Purchase Order # MATRIX CODE (see valid codes to left) aQ Copy To: 72 MATRIX
Drinking Water
Water
Waste Water
Product
SoulSolid
Oil
Wipe
Air
Chher Schounanan ADDITIONAL COMMENTS One Character per box. (A-Z, 0-91, -) Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com equired Client Information: 2 ysis to be performed at Pace FI **グ**ろり HW # tple Plain, MN 55359 quested Due Date: Page 9 of 12 1 0 8 7 6 5 1 3 2

### Pace Analytical®

hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

Courier:   Get Ex   SpeeDee   Spee	Sample Condition Client Name:	_		Pro	oject #:	M	0#:1	0525	<b>5818</b>	}
Custody Seal on Cooler/Box Present?   Yes   No   Seals Intact?   Yes   No   Biological Tissue Frozent?   Yes   No   Mone   Other   Temp Blank?   Yes   No   Mone   Other   Oth	Wench Association	الأر ك	nc.							
Packing Number:	Courier: Fed Ex UPS	U	SPS	XIcı	ient					
Custody Seal on Cooler/Box Present?   Yes   No   Seals Intact?   Yes   No   Biological Tissue Frozent?   Yes   No   M/A		e ∏Co	mmerci							
Packing Material:   Blubble Wrap   Blubble Bags   None   Other:     Temp Blank?   No   None   Dry   Intermometer:   11(0641)   17(14364)   17(0458)   17(0		₹INo	Sea	als Intact	 ? □Yes	ΧN	lo <b>Riolo</b> gi	cal Tissue Fr	ozen?	Ves DNo MIN/A
Thermometer:   TI(0461)   T2(1335)   T3(0459)   Type of ker:   Wet   Blue   None   Dry   Molted		_	_		_	۰۰۰ لیسے			`	
Did Samples Originate in West Virgina?   Two   No   Were All Container Temps Taken?   Tvs   No   No   No   Temp should be above freezing to 6°C   Cooler Temp Read w/temp blank:   Z	Thermometer:		-			Dive				<u> </u>
Temp should be above freeling to 6°C	14(0254) 🔀 15(0489)	Wa							Inverted	
Correction Factor: TWC						it Lite			rected Ten	nn
Did samples originate   na quarantine convertin the United States: AL, AR, CA, FL, GA, DI, DLA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps?   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, SC, TN, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, CR, TM, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, CR, TM, TX or VM, check mapps.   res   No   LA MS, NC, NMI, NY, OK, CR, TX, TY, TX or VM, check mapps.   res   No   LA MS, NC, NC, NMI, NY, OK, CR, TX, TY, TX or VM, check mapps.   res   No   LA MS, NC, NC, NMI, NY, OK, CR, TX, TX, TX, TX, TX, TX, TX, TX, TX, TX	-na				<del></del>			-	blank only	): See Exceptions
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, DL, LA, MS, NC, NM, NY, OK, QK, CT, NT, Xor VA, (check maps);	USDA Regulated Soil: (X) N/A, water sample/Other:	<del></del>		<u> </u>	Date/Init	ials of	Person Exami	ning Conten	ts: MA	
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.  Chain of Custody Present and Filled Out?  Chain of Custody Relinquished?  Sampler Name and/or Signature on COC?  Syres No N/A 3.  Sampler Name and/or Signature on COC?  Syres No N/A 3.  Sampler Name and/or Signature on COC?  Syres No N/A 4.  Short Hold Time Analysis (<72 hr)?  Pres No N/A 5.  Short Hold Time Analysis (<72 hr)?  Rush Turn Around Time Requested?  Syres No 6. S. D'Ay TAY  Correct Containers Used?  Syres No 7.  Correct Containers Used?  Syres No 9.  Field Filtered Volume Received for Dissolved Tests?  Syres No N/A 12. Sample #  Containers Intend?  Syres No N/A 12. Sample #  Containers needing preservation have been checked?  All containers needing preservation have been checked?  All containers needing preservation have been checked?  All containers needing preservation are found to be in compliance with EPA recommendation  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers?  Pres No N/A 13.  See Exception  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present?  Trip Blank Custody Seals Present?  Trip Blank Custody Seals Present?  Trip Blank Custody Seals Present?  CUENT NOTIFICATION/RESOLUTION  EXCEPTION CONTAINERSOLUTION  Pres No N/A 14.  Project Manager Review:  Date: T/22/2020	Did samples originate in a quarantine zone within the Uni			CA, FL, GA	A, Did sam	ples ori	iginate from a fo			
Chain of Custody Present and Filled Out?  Chain of Custody Relinquished?  Sampler Name and/or Signature on COC?  Sampler Name and/or Signature on Container Name Container										
Chain of Custody Present and Filled Out?  Chain of Custody Relinquished?  Syres No No No 3  Sampler Name and/or Signature on COC?  Syres No No No 4  Short Hold Time Analysis (*72 hr)?  Ves No 5  Short Hold Time Analysis (*72 hr)?  Ves No 5  Syres No 5  Syres No No 5  Syres No No 6  Syres No 6  Syres No 7  Syres No 8  Syres No 9	in res to clarer question, in out a	певиние	- Jon Ci	ieckiist (i	-14114-Q-556	anu n			perwork.	
Sampler Name and/or Signature on COC?   Sives   No   N/A	Chain of Custody Present and Filled Out?	Xives	Пио		1			COMMUNICIATIO.		
Samples Arrived within Hold Time?  Short Hold Time Analysis (<72 hr)?  Ves No					·					<del></del>
Samples Arrived within Hold Time?  Short Hold Time Analysis (<72 hr)?  Ves No	Sampler Name and/or Signature on COC?		□No	□n/a	3.				-	
Turbidity   Nitrate   Orthophos   Other	Samples Arrived within Hold Time?	-67	□No		4.			· · · · · · · · · · · · · · · · · · ·		·
Sufficient Volume?    Syes	Short Hold Time Analysis (<72 hr)?	∐Yes	Mo		5. Feca	l Colifor	rm	al Coliform/E o	oli	BOD Hex Chrome
Correct Containers Used? -Pace Containers Used? -Pace Containers Used? -Pace Containers Intact?    Yes	Rush Turn Around Time Requested?	⊠Yes	□No					· <del></del> · · ··•		
-Pace Containers Used?  Containers Intact?  Field Filtered Volume Received for Dissolved Tests?  Is sufficient Information available to reconcile the samples to the COC?  Matrix: Swater   Soil   Oil   Other    All containers needing acid/base preservation have been checked?  All containers needing preservation are found to be in compliance with EPA recommendation?  (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers?  Headspace in VOA Vials (greater than 6mm)?  Trip Blank Custody Seals Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Comments/Resolution:  Type Invo   NaOH   Date: T/22/2020  Date: T/22/2020	Sufficient Volume?	⊠Yes	□No		7. /					
Containers Intact?    See   No   Since   No	Correct Containers Used?	∑Yes	∏No		8.					
Field Filtered Volume Received for Dissolved Tests?    Yes	-Pace Containers Used?	¥ZYes	□No							
Is sufficient information available to reconcile the samples to the COC?  Matrix: Water Soil Soil Soil Soil Soil Soil Soil Soil	Containers Intact?	¥Yes	□No		9.					
to the COC?  Matrix: Water Soil Oil Other  All containers needing acid/base preservation have been checked?  All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?  Trip Blank Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Project Manager Review:  No Date:  T/22/2020	Field Filtered Volume Received for Dissolved Tests?	Yes	□No	<b>⊠</b> N/A	10. Is sec	liment	visible in the d	issolved cont	ainer? 🔲 Y	es 🔲 No
All containers needing acid/base preservation have been checked?  All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers?   Yes   No   MA   NA   NA   NA   NA   NA   NA   NA	I	₩es	□No		11. If no, w	rite ID/	Date/Time on C	ontainer Belov	V:	See Exception
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers?   Yes   No   M/A   No   N/A   No   N/A   No   N/A   No   N/A   No   N/A   No   N/A   N/A   No   N/A   N/A   No   N/A   N/A   No   N/A   N/A				_						
compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH > 9 Sulfide, NaOH>12 Cyanide)  Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dloxin/PFAS  Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?  Trip Blank Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION Person Contacted:  Comments/Resolution:  Project Manager Review:  Date/Time:  CALLENT Manager Review:  Date:  T/22/2020	· · · · · · · · · · · · · · · · · · ·	□Yes	□No	<b>"</b> ZÍN∕A	12. Sample	#				
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers?	compliance with EPA recommendation?	∐Yes	∏No	ØN/A		NaOH	HNO	∃ □H	I₂SO₄	Zinc Acetate
DRO/8015 (water) and Dioxin/PFAS  Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?  Trip Blank Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Comments/Resolution:  Project Manager Review:  Date:  Trip Blank Custody Seals Present?  Date:  Trip Blank Lot # (if purchased):  Date:  Trip Blank Lot # (7/22/2020)		П.		<b>-</b> -∤ .	Positive for	Res.	Yes			See Exception
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?  Trip Blank Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Comments/Resolution:  Project Manager Review:  Date: 7/22/2020	· · · · · · · · · · · · · · · · · · ·	L_JYes	∐No	J≱N/A			<del></del>	H Paper Lot#		
Headspace in VOA Vials (greater than 6mm)?   Yes   No   N/A   14.  Trip Blank Present?   Yes   No   N/A   14.  Trip Blank Custody Seals Present?   Yes   No   N/A   Pace Trip Blank Lot # (if purchased):  CLIENT NOTIFICATION/RESOLUTION   Field Data Required?   Yes   No   No   Pace Trip Blank Lot # (if purchased):  Comments/Resolution:   Date/Time:   Date/Time:   Date   T/22/2020	DNO/8015 (water) and Dioxin/PPAS				Res. Chlorii	ie	0-6 Roll	0-6 St	rip	0-14 Strip
Trip Blank Present?  Trip Blank Custody Seals Present?  CLIENT NOTIFICATION/RESOLUTION  Person Contacted:  Comments/Resolution:  Project Manager Review:  Date:  7/22/2020		Yes	□No	₩N/A	13.		1	L		See Exception
Trip Blank Custody Seals Present?		=								
CLIENT NOTIFICATION/RESOLUTION  Person Contacted: Comments/Resolution:  Project Manager Review: Date: 7/22/2020		=		<b>~</b>		Fuin Di-		-1		
Person Contacted: Date/Time:			Пио	Æ]N/A	l Pace	пр ва			ed? []Ve	es 🗆 No
Project Manager Review: Date: 7/22/2020					Date/Tim	e:	, 1014	-au negali	- <del></del>	<u>Пио</u> ,
Project Manager Review: Date: 7/22/2020	Comments/Resolution:				•			-		
7 7 Street Somples, a copy of this form will be sent to the North Caloning Denial Celebration Children in the first		complian	e sample	s, a copy o	of this form w			7/22/2020 Carolina DEHM	) NR Certificat	ion Office ( i.e. out of

Labeled by: \_\_\_\_\_

### WO#:35565187

Samples Pre-Logged int 35565187 Internal Transfer

Workorder Name: B002606-19-017 Water Gremlin W Workorder: 10525818

Subcontract To

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Results Requested By: 7/22/2020 ×

Pace Analytical

7/29/2020

Requested Analysis

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota

Annika Asp Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Phone (386)672-5668

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

Unpreserved O T C

×

LAB USE ONLY

m

Drinking Matrix

10525818001

7/22/2020 12:55

RQS

4136 Scheuneman Rd

Sample ID

tem

Lab ID

Date/Time Collect

Sample Type

Date/Time

Received By

Date/Time

Released By

Transfers

MSMSD on these samples

Comments

7123170 TMA Paco T349

Received on Ice (Y)or

Samples Intact, Y or

Custody Seal Por N Cooler Temperature on Receipt 5.3 °C

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



### Document Name: Sample Condition Upon Receipt Form Document No ; F-FL-C-007 rev, 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Peceipt Form (SCUR)

Project # PM: SMM Project Manager CLIENT. De

Due Date: 07/29/20

Date and Initials of person: Examining contents: The A

Thermometer Used:	orrection Factor) _ orrection Factor) _ orrection Factor) _ orrection Factor) _	V projects, all containers verified  S & (Actual)  (Actual)	d to ≤6 °C	, cooling process has begin
State of Origin:  Cooler #1 Temp.°C	For Worrection Factor) _ orrection Factor) _ orrection Factor) _ orrection Factor) _	V projects, all containers verifie	d to ≤6 °C ☐ Samples on ice	, cooling process has begu
Cooler #1 Temp.°C       Cooler #2 Temp.°C       (Visual)       (Cooler #2 Temp.°C       (Visual)       (Cooler #3 Temp.°C       (Visual)       (Cooler #4 Temp.°C       (Visual)       (Cooler #5 Temp.°C       (Cooler #5	orrection Factor) _ orrection Factor) _ orrection Factor) _ orrection Factor) _	(Actual)	Samples on ice	
Cooler #2 Temp.°C       (Visual)       (C         Cooler #3 Temp.°C       (Visual)       (C         Cooler #4 Temp.°C       (Visual)       (C         Cooler #5 Temp.°C       (Visual)       (C	orrection Factor) _ orrection Factor) _ orrection Factor) _ orrection Factor) _	(Actual)	Samples on ice	
Cooler #2 Temp.°C       (Visual)       (C         Cooler #3 Temp.°C       (Visual)       (C         Cooler #4 Temp.°C       (Visual)       (C         Cooler #5 Temp.°C       (Visual)       (C	orrection Factor) _ orrection Factor) _ orrection Factor) _	(Actual)		
Cooler #4 Temp.°C         (Visual)         (C           Cooler #5 Temp.°C         (Visual)         (C	orrection Factor) _	(Actual)		, couling process has begi
Cooler #5 Temp.°C(Visual)(C			Samples on ice	, cooling process has beg
		(Actual)	Samples on ice	, cooling process has beg
Cooler #6 Temp *C Afferrally (c	orrection Factor) _	(Actual)	Samples on ice	, cooling process has beg
Cooler #6 Temp.°C(Visual)(C	orrection Factor) _	(Actual)	Samples on ice	, cooling process has beg
Courier: Fed Ex UPS USPS Shipping Method: First Overnight Priority Ov  Other  Billing: Recipient Sender	ernight   Standa  Third Party	rd Overnight ☐ Ground ☐ Credit Card ☐	☐ Other ☐ International Pri	ority
Tracking # 1320 15	13 18	9		
Custody Seal on Cooler/Box Present: Yes	]No Seals	intact: Yes No	Ice: Wet Blue	Dry None
Packing Material: Bubble Wrap Bubble Bags	□None □	Other		
Samples shorted to lab (If Yes, complete)	horted Date:	Shorted	Time:	Qty:
		Comments:	-	
Chain of Custody Present	Yes □ No □N/A			
Chain of Custody Filled Out	Yes   No   N/A			
Relinquished Signature & Sampler Name COC	Yes □ No □N/A			
Samples Arrived within Hold Time "S	Yes INO IN/A	112/10		
Rush TAT requested on COC	Yes NO DAY	175/20 7/2	9120 Tru	A
Sufficient Volume	JYes □ No □N/A		V - V	
Correct Containers Used	Yes □ No □N/A			
Containers Intact Sample Labels match COC (sample IDs & date/time of	Yes □ No □N/A			
collection)	Yes □ No □N/A			
All containers needing acid/base preservation have been checked.	Yes   No SHITA		eservation Information:	
All Containers needing preservation are found to be in Compliance with EPA recommendation:	No DINHA	Preservative:_ Lot #/Trace #:_		
Exceptions: VOA, Coliform, TOC, O&G, Carbar		Date: Initials:	Time;	
Manufacture of the second of t	Yes □ No ■N/A			
Frip Blank Present:	Yes No No NA			
Client Notification/ Resolution: Person Contacted:		Date/Time:		
Comments/ Resolution (use back for additional comm	ents):			

Project Manager Review:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525692001	4140 OTTER LK RD	Drinking Water	07/21/20 12:57	07/21/20 14:40
10525692002	DUP072120	Drinking Water	07/21/20 00:00	07/21/20 14:40





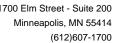
### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525692001	4140 OTTER LK RD	EPA 522	TM2	2	PASI-O
10525692002	DUP072120	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

Date: 07/29/2020 08:10 AM

Sample: 4140 OTTER LK RD	Lab ID: 105	25692001	Collected: 07/21/2	20 12:57	Received: 07	/21/20 14:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	nod: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	l Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 13:37	7 123-91-1	
1,4-Dioxane-d8 (S)	98	%	70-130	1	07/27/20 10:45	07/28/20 13:37	7	
Sample: DUP072120	Lab ID: 105	25692002	Collected: 07/21/2	20 00:00	Received: 07	/21/20 14:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	nod: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	l Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 13:21	l 123-91-1	
1,4-Dioxane-d8 (S)	96	%	70-130	1	07/27/20 10:45	07/29/20 12:24	1	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.:

10525692

QC Batch: 651671

Analysis Method:

QC Batch Method: EPA 522 Analysis Description:

EPA 522

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525692001, 10525692002

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

Parameter

10525692001, 10525692002

Blank Result

Reporting Limit

Qualifiers Analyzed

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

Units

ND 98

0.20 07/28/20 12:00 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

> Parameter Units

Spike Conc. 20

LCS LCS Result % Rec % Rec Limits 70-130

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

18.6

93 99

LABORATORY CONTROL SAMPLE:

Parameter

3543370

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

70-130

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

Units

0.2

0.20

102

50-150 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3543371 MS

ND

MSD

20.2

3543372

19.6

MSD MS

96

MSD

% Rec

Max Limits **RPD** RPD Qual 20

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

Units ug/L %

10525818001 Spike Result Conc.

20.4

Spike MS Conc. Result

Result 19.0

% Rec % Rec 96

101

70-130 94

3

70-130

101

Date: 07/29/2020 08:10 AM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/29/2020 08:10 AM





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525692

Date: 07/29/2020 08:10 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525692001	4140 OTTER LK RD	EPA 522	651671	EPA 522	652021
10525692002	DUP072120	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Regulatory Agency SAMPLECONDIDING State / Location MO#: 10525692 Page: 명 Received on TEMP In C 1480 12,0 TIME 10525692 1/19/20 John A21/2 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION 522 1,4-dioxane N/A jeoT seavisnA Methanol Preservatives Na2S2O3 Pace Quote:
Pace Project Manager: ai ИаОН resto Invoice Information: Attention: HCI Company Name: еомн Section C H2SO4 Address: Azo Hiles 0905 Unpreserved 7/2/20 1410 # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: Project Name: Water Gremlin Well Sampling - 2606-0017 DATE 12:57 SATE. COLLECTED RELINQUISHED BY LAFFILIATION TIME START 四个小的 Required Project Information: Report To: Kelly Jaworski (G=GRAB C≈COMP) SAMPLE TYPE Purchase Order# MATRIX CODE (see valid codes to left) Section B Copy To: MATROX
Drinking Water
Waste Water
Waste Water
Product
Soil/Soild
Oil
Wipe
Air
Other
Tissue 4150 SA-1KG 20072120 std-5-542 One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. aple Plain, MN 55359 nail: kjaworski@wenck.com equired Client Information: sis to be performed at Pace FL NONE quested Due Date: T 0 0 4 9 9 5 8 0 0 E

Pace Analytical www.pacelars.com

Page 9 of 12

SIGNATURE of SAMPLER:

(N/A)

зејишес

Sealed Cooler VVIVI

(N/A)



### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020 Page 1 of 1

ENV-FRM-MIN4-0150 Rev.00

Pace Analytical Services -Minneapolis

Sample Condition Clien Upon Receipt	nt Name:			Pr	oject #:		)#:10	052	25692	
	ench Associates I	~X							ue Date: 07	
Courier: Fe	d Ex UPS	□u:	SPS	 	lient	1	AKA ENT. WENG		ie pate: v	1/20/20
□Pa	ce SpeeDee	e 🔲 Co	ommerci	ial See Ex		CLI	ENT: WENC	<b>√</b> N		
Tracking Number:		· · · · · · · · · · · · · · · · · · ·		[		L			- 1869	-
Custody Seal on Cooler/Bo	,	ŽNo		als Intact	: <b>?</b> □Y	es 🏻	No <b>Biolo</b>	gical Tis	ssue Frozen?	]Yes
Packing Material: But	oble Wrap 🗗 Bubble B	ags 🗌	None	☐Oth	ner:			Te	emp Blank?	<b>∀</b> es □No
Thermometer:	61) 🔲 T2(1336) 🔲T3(0459) 54) 🙀 T5(0489)		Type of	ice: [	Wet	Blue	□None	□ Dr	y Melted	
Did Samples Originate in We	est Virginia?  Yes	We	re All Co	ntainer '	Temps T	aken? ∐Y	es 🔲 No 💋	N/A		
Temp should be above freezing to	6°C Cooler Temp Re				1.6	, 1.2	°C	·	ge Corrected Te	emp
Correction Factor: 1000	Cooler Temp Correcte		-		1.6	1,2	°C			y): See Exceptions  1 Container
USDA Regulated Soil: ( N		,	۱		Date	/Initials of		nining C		1/21/20
Did samples originate in a quar		ted States	: AL. AR.	CA. FL. G					ontents: <u>K #1</u> ource (internatio	
ID, LA. MS, NC, NM, NY, OK, OF	R, SC, TN, TX or VA (check m	aps)? [	Yes	□No	Hav	vaii and Pue	erto Rico)?		Yes No	•
If Yes to	either question, fill out a l	Regulated	d Soil Ch	ecklist (F	-MN-Q-	338) and i	nclude with S	SCUR/C	OC paperwork.	
					Ţ			сомм	IENTS:	
Chain of Custody Present and F	illed Out?	<b>⊠</b> Yes	□No		1.					
Chain of Custody Relinquished?		Ves	□No		2.					
Sampler Name and/or Signature		Yes	□No	□N/A	3.	-				
Samples Arrived within Hold Tin	ne?	Yes	No		4.					
Short Hold Time Analysis (<72 l	nr)?	∐Yes	No						orm/E coliBOD/ thophosOther_	/cBOD ☐Hex Chrome
Rush Turn Around Time Reques	ited?	√Yes	□No		6. 5	day	_			
Sufficient Volume?		✓Yes	□No		7.					
Correct Containers Used?		□Ves	□No		8.					
-Pace Containers Used?		□¥es	□No							
Containers Intact?	*** *	Wes	□No		9.					
Field Filtered Volume Received (	or Dissolved Tests?	☐Yes	□No	N/A	10. 1	s sediment	visible in the	dissolve	d container? 🔲	Yes No
Is sufficient information available to the COC?	e to reconcile the samples	Yes	□No				Date/Time on			See Exception
Matrix: ☐Water ☐Soil ☐Oil ☐	]Other									-
All containers needing acid/base checked?	preservation have been	Yes	□No	ØN/A	12. San	nple#			······································	- 1 · · · · · · · · · · · · · · · · · ·
All containers needing preservat compliance with EPA recommen (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 S	dation?	∐Yes	□No	ØN/A		☐ NaOH	□ни	O <sub>3</sub>	∏H₂SO₄	Zinc Acetate
( · · · · · · · · · · · · · · · · · · ·				j	Positive	for Res.	Yes			See Exception
Exceptions: VOA, Coliform, TOC/		∐Yes	□No	ØN/A	Chiorin	e? [	No	рН Раре	er Lot#	
DRO/8015 (water) and Dioxin/PF	AS				Res. Ch	lorine	0-6 Roll		0-6 Strip	0-14 Strip
Extra labels present on soil VOA	or WIDRO containers?	<del></del>	<del></del>		13.		<u></u>	L	44	
Headspace in VOA Vials (greater		∐Yes ∐Yes	∐ No □ No	ZIN/A ZIN/A	13.				*	See Exception
Trip Blank Present?		Yes	□No	ZN/A	14.					
Trip Blank Custody Seals Present	?	Yes	□No	ØÑ/A	Pa	ce Trip Bla	ınk Lot # (if pu	ırchased	l):	
<b>CLIENT NOTIFICATIO</b> Person Contacted:	N/RESOLUTION				Date/	Time	Field	l Data R	equired?	es No
Comments/Resolution:		****			Dute/				7657	
	1111	1		1						
Project Manager Rev		1	14			Date:	7/22/20			
Note: Whenever there is a discrepa	ncy affecting North Carolina	compliance	e sample	s, a copy o	of this form	n will be se	nt to the North	Carolina	a DEHNR Certifica	tion Office ( i.e out of

Page 10 of 12

Labeled by:

Wednesday, July 22, 2020 12:05:41 PM

Page 11 of 12

### WO#: 35565163

Samples Pre-Logged in 35565163 Internal Transfer

State Of Origin: MN Workorder Name: B002606-19-017 Water Gremlin

Yes Owner Received Date: Cert. Needed:

×

Pace Analytical

Results Requested By: 7/28/2020

7/21/2020

1,4-Dioxane in DW by 522 (Pace FL)

Pace Analytical Ormond Beach

Subcontract To

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp Report To

1700 Elm Street

Suite 200

Workorder: 10525692

Preserved Containers

ff5X

LAB USE ONLY

×

×

Drinking

10525692001

Matrix

Lab ID

Date/Time Collect

Sample Type

PS PS

4140 OTTER LK RD

DUP072120

Sample ID

Item

Drinking

10525692002

7/21/2020 00:00 7/21/2020 12:57

Z 0

Samples Intact | M

Received on Ice Mor N

JIII COLECT

TMAIRGCE TS49

Received By

Date/Time

Released By

Transfers

Date/Time

Comments

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document

Custody Seal (Y) or N

Cooler Temperature on Receipt 5,8 °C

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Ormond Beach, FL 32174

Minneapolis, MN 55414 Phone (612)607-1700

Phone (386)672-5668



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority; Pace Florida Quality Office

Project # **Project Manager:** 

Due Date: 07/28/20

CLIENT: PACMIN

(SCUR) Date and Initials of person:

Examining cont Label:	1100
Deliver:	
pH:	4

Client:			Deliver:pH:	
Thermometer Used: 1349	Date: 7 23 W	Time:{(()		エ・ル・
State of Origin:	☐ For MA/ project	oto all containers verified	to 46 %0	
	rection Factor)	cts, all containers verified t		
Cooler #2 Temp. °C [ 1 (Visual) (Cor		-		ooling process has begun
Cooler #3 Temp.°C(Visual)(Cor			-	ooling process has begun
Cooler #4 Temp.°C (Visual) (Cor				poling process has begun
Cooler #5 Temp.°C(Visual)(Cor				poling process has begun
Cooler #6 Temp.°C(Visual)(Cor				poling process has begun
Courier: Fed Ex UPS USPS  Shipping Method: First Overnight Priority Overnight  Other  Billing: Recipient Sender  Tracking # 1320 157	Client Comminight Standard Over	nercial Pace	☐ Other ☐ International Priori	
Custody Seal on Cooler/Box Present: Yes Packing Material: Bubble Wrap Bubble Bags Samples shorted to lab (If Yes, complete) Sho	o Seals intact  None Other  orted Date:	Yes No		Ory None  Qty:
	Con	ments:		
	es 🗆 No 🗆 N/A			
Chain of Custody Filled Out				
Alexander and a second a second and a second a second and	es 🗆 No 🗆 N/A			
	es 🗆 No 🗆 N/A			
0.55: 111	0.00	18/20		
2				
200				
Sample Labels match COC (sample IDs & date/time of	es □ No □N/A			
All containers needing acid/base preservation have been checked.  All Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, OAC Carbana	es   No DINA	Preservative: Lot #/Trace #:	ervation Information: Time:	
Headspace in VOA Vials? ( >6mm): □Yo		(Master)		
Trip Blank Present:				
Client Notification/ Resolution: Person Contacted:		Date/Time:		
Comments/ Resolution (use back for additional commen	ts):			
Project Manager Review.	16	Da	ate:	





August 05, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526538001	1000023758	Drinking Water	07/28/20 11:05	07/28/20 14:33
10526538002	Dup072820	Drinking Water	07/28/20 00:00	07/28/20 14:33





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526538001	1000023758	EPA 522	TM2	2	PASI-O
10526538002	Dup072820	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

Minneapolis, MN 55414 (612)607-1700



### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

Date: 08/05/2020 01:21 PM

Sample: 1000023758	Lab ID: 105	26538001	Collected: 07/28/2	0 11:05	Received: 07	/28/20 14:33 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	nod: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	l Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.20	1	08/03/20 13:32	08/04/20 10:31	123-91-1	
1,4-Dioxane-d8 (S)	108	%	70-130	1	08/03/20 13:32	08/04/20 10:31		
Sample: Dup072820	Lab ID: 105	26538002	Collected: 07/28/2	00:00	Received: 07	//28/20 14:33 I	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Meth	nod: EPA 52	22 Preparation Metho	od: EPA	522			
	Pace Analytica	l Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	08/03/20 13:32	08/04/20 10:16	3 123-91-1	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

QC Batch Method:

QC Batch:

653465 EPA 522 Analysis Method:

Analysis Description:

EPA 522

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526538001, 10526538002

METHOD BLANK:

Matrix: Water

Result

Associated Lab Samples:

10526538001, 10526538002

Blank

Reporting Limit

Qualifiers Analyzed

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L %

Units

Units

ug/L

%

ND 103

0.20 08/04/20 08:26 70-130 08/04/20 08:26

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

3552678

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

ug/L %

20

20.3

102 107 70-130 70-130

LABORATORY CONTROL SAMPLE:

Parameter

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

3552679

Spike Conc. 0.2

LCS Result 0.21

3552887

22.2

LCS % Rec % Rec Limits

50-150

70-130

Qualifiers

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Parameter

3552886

ND

MSD

21

MSD

21.9

104

111

% Rec Max

1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)

Units ug/L %

10526688001 Spike Result Conc.

MS

21.4

Spike Conc.

MS Result Result

MS % Rec

104

108

MSD % Rec 104

110

Limits 70-130

70-130

**RPD** RPD 20 Qual

Date: 08/05/2020 01:21 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

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MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526538

Date: 08/05/2020 01:21 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526538

Date: 08/05/2020 01:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526538001	1000023758	EPA 522	653465	EPA 522	653821
10526538002	Dup072820	EPA 522	653465	EPA 522	653821

# CHAIN-OF-CUSTODY / Analytical Request Document

ŏ Regulatory Agency 3 3 Page: Residual Chlorine (Y/V) Received on The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. TEMP In C 12G 7,48) 1/19/2 2/28 \`#**0**M amika.asp@pacelabs.com, 622 1,4-dioxene NA Analyses test Olher No. 150 H Methanol GISON Preservatives Nezszos Address:
Pace Quote:
Pace Project Manager:
Pace Profile #: 39664, HOBN Section C Invoice Information: нсі Company Name: くらく HIO3 H2504 Attention 0905 7,27,27 Unpreserved # OF CONTAINERS SAMPLER NAME AND SKRVATURE BAMPLE TEMP AT COLLECTION PRINT Name of SAMPLER: Purchase Order #:
Project Name: Water Grentlin Well Sampling - 2606-0017
Project #: PO(\$\frac{2}{0}\frac{1}{0}\frac{7}{0} 魯 2 d5 COLLECTED Her TIME START Required Project Information: Report To: Kelly Jawarski Copy To: SAMPLE TYPE (G=GRAB C=COMP) \S MATRIX CODE (see valid codes to left) 237 Section B 10000127758 04072820 STD School One Character per box. (A-Z, 0-9 /, -). Sample Ids must be unique 1800 Pioneer Creek Center SAMPLE ID mpany: Wenck Associates, Inc. kjaworski@wenck.com NONE squired Client Information: is to be performed at Pace Fl. ple Plain, MN 55359 quested Due Date: Page 9 of 12

(V/V)

Semples

Sealed Cooler Custody

(N/A)

DATE Signed:

SIGNATURE of SAMPLER:

# Pace Analytical®

**Project Manager Review:** 

hold, incorrect preservative, out of temp, incorrect containers).

### **Document Name:**

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -**Minneapolis** 

Sample Condition Upon Receipt  Client Name:  Wenck			Pro		0#:1	0526538	
Courier:	Us		ZCII	ent CL1	ENT: WEN		.07,047,20
Tracking Number:		ommercia	al See Exc	peptions   1			
Custody Seal on Cooler/Box Present?	ĴNo	Sea	ls Intact	? □Yes ☑N	No Biolog	ical Tissue Frozen?	]Yes □No 🎮N/A
Packing Material: Bubble Wrap Bubble Ba		None	Oth	/		Temp Blank?	
- · /-	_	Tuone		er:		remp blank?	
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         T4(0254) ☐ T5(0489)		Type of I	ce: Z	Wet □Blue	□None	☐Dry ☐Melted	
Did Samples Originate in West Virginia? ☐Yes ☐No	Wer	re All Co	ntainer T	emps Taken? □Yo	es □No 🗹	N/A	
Temp should be above freezing to 6°C Cooler Temp Rea	ad w/ten	np blank	·	1.8	°C	Average Corrected Te	mp
Correction Factor: <u>~O,2</u> Cooler Temp Correcte	ed w/tem	p blank	:	1,6	°c	(no temp blank onl	y): See Exceptions  1 Container
USDA Regulated Soil: ( N/A, water sample/Other:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	)		Date/Initials of	Person Exam	ining Contents:	
Did samples originate in a quarantine zone within the Unit	ed States:	: AL, AR,	CA, FL, GA	, Did samples or	iginate from a f	oreign source (internation	nally, including
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m			□No	Hawaii and Pue	erto Rico)?	☐Yes ☐No	
If Yes to either question, fill out a I	Regulated	d Soil Ch	ecklist (F	-MN-Q-338) and i	nclude with S	CUR/COC paperwork.	
						COMMENTS:	
Chain of Custody Present and Filled Out?	Yes	□No		1.			
Chain of Custody Relinquished?	Yes	□No		2.			
Sampler Name and/or Signature on COC?	Yes	∏No	□N/A	3.		, in	
Samples Arrived within Hold Time?	Yes	□No		4.		<del></del> .	1916
Short Hold Time Analysis (<72 hr)?	□Yes	∕ĽNo				otal Coliform/E coliBOD/ teOrthophosOther_	CBOD Hex Chrome
Rush Turn Around Time Requested?	Yes	□No		6.			
Sufficient Volume?	∕ZÎYes	□No		7			
Correct Containers Used?	Yes	□No		8.			
-Pace Containers Used?	ZÍYes	□No					
Containers Intact?	Yes	□No		9.			
Field Filtered Volume Received for Dissolved Tests?	∐Yes	□No	ØN/A	10. Is sediment	visible in the	dissolved container?	Yes 🔲 No
Is sufficient information available to reconcile the samples			7	11. If no, write ID/	/ Date/Time on	Container Below:	See Exception
to the COC?	Yes	□No					
Matrix: Water Soil Oil Other							
All containers needing acid/base preservation have been	□Yes	□No	Øn/a	12. Sample #			
checked?							
All containers needing preservation are found to be in	□Yes	□No	⊠N/A	П №	☐ HN	O₃ □H₂SO₄	Zinc Acetate
compliance with EPA recommendation?			/		_		
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)					<b>_</b>		
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	□Yes	□No	⊠N/A	Positive for Res.	Yes	-11 75114	See Exception
DRO/8015 (water) and Dioxin/PFAS			<b>9</b> -7-7-	Chlorine? [ Res. Chlorine	No   0-6 Roll	0-6 Strip	0.14 Strip
· · · · · · · · · · · · · · · · · · ·				nes. Gnorne	0-0 1(011	0-0 3tl lþ	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	□Yes	□No	ØN/A	13.		<u> </u>	See Exception
Headspace in VOA Vials (greater than 6mm)?	∐Yes	□No	[ <b>7</b> ] N/A				
Trip Blank Present?	□Yes	□No	M/A	14.			
Trip Blank Custody Seals Present?	∐Yes	□No	∏N/A	Pace Trip Bla	ank Lot # (if pu	rchased):	
CLIENT NOTIFICATION/RESOLUTION			-		Field	Data Required?	∕es
Person Contacted:				Date/Time:			
Comments/Resolution:			/				

Project Manager Review: Date: 7/29/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labeled by: \_\_\_\_\_CEC Page 10 of 12

Date:

Internal Transfer Chain X Samples Pre-Logged into eCOC. Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10526538

Subcontract To

Pace Analytical Ormond Beach

8 East Tower Circle Ormond Beach, FL 32174

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

7/28/2020 × Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Pace Analytical "

8/4/2020

Requested Analysis

Results Requested By:

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

Phone (386)672-5668

Matrix Lab ID

Sample

Sample ID 1000023758 Dup072820

tem

AIDA

LAB USE ONLY

Drinking Drinking 10526538001 Date/Time Collect

× ×

10526538002 7/28,2020 11:05 7/28,2020 00:00

Type PS S

Date/Time

Received By July 20 Released By

Transfers

7120M

ma

Date/Time

Custody Seal (Y) or ပ္စ Cooler Temperature on Receipt

Z

Z ō

Samples Intact Y

Comments

\*\*\*In order to maintain client confidentiality, locationmame of the sampling site, sampler's name and signature may not be provided on this COC document. Received on Ice (Y) or

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12

FMT-ALL-C-002rev.00 24March2009

Pace Analytical

**Project Manage** 

Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

WO#:35566641

PM: SMM

Due Date: 08/04/20

CLIENT: PACMIN

Client

Project

m (SCUR)

Date and Initials of person:

Examining contents:

Label:

Deliver:
pH:

Ollelle	1110		Deliver:
Thermometer Used: 1337	Date: 7/30/2	O Time:	20 Initials: BRN
State of Origin:	, J		
	(Correction Factor)	orojects, all containers verification (Actual)	
Cooler #2 Temp.°C(Visual)			Samples on ice, cooling process has be
Cooler #3 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has be
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
Cooler #6 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has beg
		(Actual)	Samples on ice, cooling process has beg
Courier: Fed Ex UPS US	SPS Client Cor	mmercial D Pace	Other
Shipping Method:	ty Overnight   Standard (	Overnight   Ground	☐ International Priority
Other_	-		
Billing: Becipient 75 Sender	Third Party	☐ Credit Card [	□ Unknown
Custody Seal on Cooler/Box Present:	□No Seals into	act: Yes No	
			Ice: (Wet) Blue Dry None
Packing Material:		er	0
oumples offerted to lab (if Tes, complete)	Shorted Date:	Shorte	d Time: Qty:
		omments:	
Chain of Custody Present	ØYes ØNo □N/A		
Chain of Custody Filled Out	DYES TO NO DN/A		
Relinquished Signature & Sampler Name COC	Dyes I No DNIA		
Samples Arrived within Hold Time	Yes DINO DN/A		
Rush TAT requested on COC	□Y98 No □N/A		
Sufficient Volume	DYES DNO DNA		
Correct Containers Used	Eyes I No DN/A		
Containers Intact	DYPE THO DNA		
Sample Labels match COC (sample IDs & date/time of collection)	DYES NO DNA		
All containers needing acid/hase preservation have been checked.	//	Pi	reservation Information:
All Containers needing preservation are found to be in	TYPS   No   N/A	Preservative:	osorvation information.
compliance with EPA recommendation.	ØYes □ No □N/A	Lot #/Trace #:_ Date:	Time:
Exceptions: VOA, Coliform, TOC, O&G, College on VOA Vials? ( >6mm):		Initials:	
Frip Blank Present:	□Yes □ No ØN/A		
	□Yes □ No IZN/A		
Client Notification/ Resolution: Person Contacted:			~
Leizoti Contacted;		Date/Time:	
comments/ Resolution (use back for additional co	mments):		
Designative Design			
Project Manager Review:			Date





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 23, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10526074001	4144 Otter Lk Rd	Drinking Water	07/23/20 11:16	07/23/20 15:25





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10526074001	4144 Otter Lk Rd	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

Date: 07/29/2020 03:08 PM

Sample: 4144 Otter Lk Rd	Lab ID: 105	26074001	Collected: 07/23/2	20 11:16	Received: 07	/23/20 15:25	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	,		2 Preparation Metho	od: EPA (	522			
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 17:39	9 123-91-1	
1,4-Dioxane-d8 (S)	83	%	70-130		07/27/20 10:45	07/00/00 47 0	_	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10526074001

METHOD BLANK: 3543368

Date: 07/29/2020 03:08 PM

Matrix: Water

Associated Lab Samples: 10526074001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	0.20	07/28/20 12:00	
1,4-Dioxane-d8 (S)	%	98	70-130	07/28/20 12:00	

LABORATORY CONTROL SAMPLE: 3543369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	20	18.6	93 99	70-130 70-130	

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

MS MSD

		40505040004	0	0-1-	140	MOD	140	MOD	0/ D			
		10525818001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20.4	20.2	19.6	19.0	96	94	70-130	3	20	
1,4-Dioxane-d8 (S)	%						101	101	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10526074

Date: 07/29/2020 03:08 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10526074

Date: 07/29/2020 03:08 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10526074001	4144 Otter Lk Rd	EPA 522	651671	EPA 522	652021

Face Analytical www.pacelascom

--

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ŏ Regulatory Agency SAMPLECONDIDINS State / Location 10526074 Page: Resid Received on TEMP In C 12500 222 2/61/2 DATE 10526074 865.i annika.asp@pacelabs.com, Sark 1 ensxoib-4,1 SS3 N/A teeT seavisnA Other lonariteM Na2S2O3 Address:
Pace Quote:
Pace Project Manager:
Pace Profile #: 39664. HOBN Section C Invoice Information: A15:N нсі Company Name: ниоз 42SO4 10905 TIME Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION H16/24 1/13/2 PRINT Name of SAMPLER: SIGNATURE of SAMPLER. Water Gremlin Well Sampling - 2606-0017 DATE 옆 COLLECTED Project Name: Water Gremlin Well Samplir Project # 150021,06 - 19 - 617 RELINQUISHED BY LAFFILLATION START 61/2/2 Required Project Information: Report To: Kelly Jaworski (G=GRAB C=COMP) SAMPLE TYPE 'urchase Order#. MATRIX CODE (see valid codes to left) Section B Copy To: MATRIX
Dinixing Water
Water
Water
Warste Water
Product
Soul/Solid
Oil
Wipe
Air
Other One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS quested Due Date: 5-42 1800 Pioneer Creek Center SAMPLE ID Wenck Associates, Inc. kjaworski@wenck.com rquired Client Information: rmpany: Wenck Associa rsis to be performed at Pace FL aple Plain, MN 55359 nail: kiaworski@wer

Page 9 of 12

(N/A) ntact Semples

Cooler

Custod

(N/A)

# ace Analytical `

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

**Document No.:** 

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services -Minneapolis

ENV-FRM-MIN4-0150 Rev.00 Sample Condition **Client Name:** WO#: 10526074 Project #: **Upon Receipt** Wenck PM: AKA Due Date: 07/30/20 Courier: □UPS Client USPS CLIENT: WENCK SpeeDee Commercial See Exceptions Tracking Number: Custody Seal on Cooler/Box Present? Yes No Seals Intact? □No Biological Tissue Frozen? Yes No No N/A Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: Type of Ice: ブWet. Blue None Dry T4(0254) 75(0489) Melted Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? 
☐Yes ☐No ☐N/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **Average Corrected Temp** (no temp blank only): See Exceptions Correction Factor: + Cooler Temp Corrected w/temp blank: OC. ☐1 Container USDA Regulated Soil: ( // N/A, water sample/Other:\_ 723201 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? No Hawaii and Puerto Rico)? Yes If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. COMMENTS: Chain of Custody Present and Filled Out? ∏ ÎYes □No Chain of Custody Relinquished? 7Yes ΠNo 2. Sampler Name and/or Signature on COC? **Z**Yes □No □N/A 3. Samples Arrived within Hold Time? ✓Yes □No 4. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome Short Hold Time Analysis (<72 hr)? ☐Yes ZNo ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other **Rush Turn Around Time Requested?** Yes ΠNo 6. Sufficient Volume? Yes □No 7. **Correct Containers Used? ∠**Yes □No 8. -Pace Containers Used? Yes ∐No Containers Intact? Yes □No 9. Field Filtered Volume Received for Dissolved Tests? Yes √ÎN/A □No Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? Yes □No Matrix: Water Soil Oil Other All containers needing acid/base preservation have been ÆÎN/A 12. Sample # Yes □No checked? All containers needing preservation are found to be in ☐ NaOH HNO<sub>3</sub> H₂SO₄ Yes □No ☑N/A Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. See Exception □No □N/A Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, Chlorine? No pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. Yes □No ☑N/A See Exception Headspace in VOA Vials (greater than 6mm)? ☐ Yes ∐No Trip Blank Present? □No Yes **図**N/A 14. Trip Blank Custody Seals Present? TT/N/A Yes □No Pace Trip Blank Lot # (if purchased): CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

hold, incorrect preservative, out of temp, incorrect containers).

Page 10 of 12

FMT-ALL-C-002rev.00 24March2009

Friday, July 24, 2020 11:55:26 AM

Page 11 of 12

# Internal Transfer Chair

x Samples Pre-Logged into eCOC.

Workorder Name: B002606-19-017 Water Gremlin

Workorder: 10526074

Subcontract To

Pace Analytical Ormond Beach

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Results Requested By: Requested Analysis 7/23/2020 ×

Pace Analytical

7/30/2020

1,4-Dioxane in DW by 522 (Pace FL)

Preserved Containers

Unpreserved

LAB USE ONLY

×

Drinking

10526074001 Lab ID

7/23/2020 11:16

PS

4144 Otter Lk Rd

Item Sample ID

Collect Date/Time

Sample Type

Matrix

Samples Intact

Received on Ice X' or

Comments

Date/Time 242

Received By

Date/Time

Released By

Transfers

4

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Custody Seal Y or

ပ

47

Cooler Temperature on Receipt

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Minneapolis, MN 55414 Phone (612)607-1700

Pace Analytical Minnesota 1700 Elm Street

Suite 200

Annika Asp Report To

8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project # **Project Manager:** 

PM: SMM

Date and Initials of person: Examining contents:

Client:	CLIENT: PACMIN	07/30/20	Deliver:
Thermometer Used:	3-19 Date: 7 25	ليك Time:	1042 Initials: I.w -
State of Origin:	☐ For Wir	projects, all containers verif	ied to <6 °C
Cooler #1 Temp. °C ソル (Visua			
	al)(Correction Factor)		Samples on ice, cooling process has beg
	(Correction Factor)		Samples on ice, cooling process has begi
	(Correction Factor)		Samples on ice, cooling process has beg
	(Correction Factor)		Samples on ice, cooling process has beg
	l)(Correction Factor)		Samples on ice, cooling process has beg
(Visua	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Courier: Fed Ex U	PS USPS Client Co	mmercial D Pace	Other
Shipping Method:   First Overnig	ht Priority Overnight   Standard	Overnight   Ground	☐ International Priority
☐ Other		•	a memasonary noney
Billing: Recipient	Sender	☐ Credit Card	□ Unknown
Tracking #	50.5 11179		
Custody Seal on Cooler/Box Present	t: Yes No Seals inf	act: Yes No	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap	Bubble Bags None Ott	ner	
Samples shorted to lab (If Yes, comp		-	d Times
			d Time: Qty:
Chain of Custody Present	Yes 🗆 No 🗀N/A	omments:	Jan -
Chain of Custody Filled Out	PYes □ No □N/A		
Relinquished Signature & Sampler Nam	ne COC Yes 🗆 No 🗆 N/A		
Samples Arrived within Hold Time	Yes 🗆 No 🗆N/A		***
Rush TAT requested on COC	□Yes □No □N/A		10 10 10 10 10 10 10 10 10 10 10 10 10 1
Sufficient Volume	TYPES DINO DINA		
Correct Containers Used	Øyes □ No □N/A		
Containers Intact	Yes 🗆 No 🗆N/A		
Sample Labels match COC (sample IDs & da collection)	ate/time of		
All containers needing acid/base preservation	n have been	1	many the state of
checked. All Containers needing preservation are foun	d to be in	Preservative:	
compliance with EPA recommendation:	Yes □ No □N/A	Lot #/Trace #. Date:	Time:
Exceptions: VOA, Coliform,		Initials:	
lleadspace in VOA Vials? (>6mm):	LIYes 🗆 No DWA		
Trip Blank Present:	□Yes □No □N/A		
Client Notification/ Resolution:			
Person Contacted:		Date/Time:	
Comments/ Resolution (use back for a	additional comments):		1.111
Project Manager Review			





July 27, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

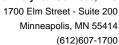
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525686001	4151 Otter LK Rd	Drinking Water	07/20/20 15:18	07/21/20 11:00





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525686001	4151 Otter LK Rd	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

Date: 07/27/2020 10:32 AM

Sample: 4151 Otter LK Rd	Lab ID: 10	525686001	Collected: 07/20/2	20 15:18	Received: 07	//21/20 11:00	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/23/20 10:53	07/24/20 14:27	7 123-91-1	



### **QUALITY CONTROL DATA**

EPA 522

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

Date: 07/27/2020 10:32 AM

QC Batch: 650880

QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane

Laboratory: Pace Analytical Services - Ormond Beach

Analysis Method:

Associated Lab Samples: 10525686001

METHOD BLANK: 3539245 Matrix: Water

Associated Lab Samples: 10525686001

Blank Reporting Parameter Qualifiers Units Result Limit Analyzed 1,4-Dioxane (p-Dioxane) ND 0.20 07/24/20 11:14 ug/L 1,4-Dioxane-d8 (S) % 76 70-130 07/24/20 11:14

LABORATORY CONTROL SAMPLE: 3539246 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.4-Dioxane (p-Dioxane) 2 1.7 83 70-130 ug/L 1,4-Dioxane-d8 (S) 88 70-130 %

LABORATORY CONTROL SAMPLE: 3539247 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 .17J 83 50-150 1,4-Dioxane-d8 (S) % 79 70-130

MATRIX SPIKE SAMPLE: 3539248 35562061001 MS MS % Rec Spike Parameter Units Result Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 0.33 1.8 70-130 M1 2.1 69 ug/L 70-130 S5 1,4-Dioxane-d8 (S) % 69

SAMPLE DUPLICATE: 3539249 35563844001 Dup Max Parameter Units Result Result RPD RPD Qualifiers 1,4-Dioxane (p-Dioxane) < 0.12 ND 20 ug/L 1,4-Dioxane-d8 (S) % 83 81

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525686

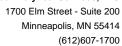
[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.

### **ANALYTE QUALIFIERS**

Date: 07/27/2020 10:32 AM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525686

Date: 07/27/2020 10:32 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525686001	4151 Otter LK Rd	EPA 522	650880	EPA 522	651289

10525686

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Section C Invoice Information: Attention: Required Project Information: Report To: Kelly Jaworski Section B equired Client Information: impany: Wenck Associates, Inc. Pace Analytical www.pucsuscon

SAMPLE ID  One Character per box.  (AZ, D-91, -)  Sample Ids must be unique  Tassue  ADDITIONAL COMMENTS  ADDITIONAL COMMENTS	Idraes: 4000 p.	Report To:	- 1	Kelly Jaworski				A.	Attention:					l	l		1	I	a	. 000			
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	SAMPLEID	Waste Water WVV Product P Soil/Soild SL			TART	Ψ	QI O						tseT							(N/)			
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### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority Pace Florida Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project # Project Manager: Client:		1100	Date and Initials of person:  Examining contents: TMA  Label: Deliver: pH:
Thermometer Used: 1349	Pate: 121	w Time: U	Initials: I.M.
State of Origin:	For WV p	projects, all containers verific	ed to ≤6 °C
Cooler #1 Temp. °C 3 6 (Visual) 0 (Corr	rection Factor) 3	(Actual)	Samples on ice, cooling process has begun
Cooler #2 Temp.°C(Visual)(Core	rection Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)(Cor	rection Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #4 Temp. °C(Visual)(Corr	rection Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)(Corn	rection Factor)	(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)(Con	rection Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS USPS Shipping Method: First Overnight Priority Overn Other  Billing: Recipient Sender	night □ Standard □ Third Party		☐ Other ☐ International Priority ☐ Unknown
Tracking #	501		
Packing Material: Bubble Wrap Bubble Bags Samples shorted to lab (If Yes, complete) Sho	orted Date:	herShorte	od Time: Qty:
Chain of Custody Present		policy	
Chain of Custody Filled Out			
Relinquished Signature & Sampler Name COC 1/Q/2	ès 🗆 No 🗆 N/A		
Samples Arrived within Hold Time	es 🗆 No 🗆 N/A		
tush TAT requested on COC	es ∇ No □N/A		
Sufficient Volume VY	es □ No □N/A		
Correct Containers Used	es □ No □N/A		
Containers Intact ample Labels match COC (sample IDs & date/time of	es □ No □N/A		
offection)	es 🗆 No 🗆N/A		
Containers needing preservation are found to be in	es □ No □N/A	Preservative: Lot #/Trace #;	reservation Information Time:
	es 🗆 No NN/A		
	es 🗆 No IQN/A		
lient Notification/ Resolution: Person Contacted:  omments/ Resolution (use back for additional commen	ts):	Date/Time:	
Project Manager Review:			Date:Page 10 of



### Document Name:

## Service Center Transfer Checklist Document Number:

**ENV-FRM-MIN4-0135** Rev.00

Document Revised: 26Mar 2020

Page 1 of 1

Pace Analytical Services -

Minneapolis

## **Service Center Transfer Checklist**

Service Center:	MPLS	BLM 🗀	AZ 🗆
Client:	Wenck		
Destination Lab:	MPLS 🗌	VM 🗆 D	uluth 🗆
National	□ Othe	Page F	L
Received w/ Cus	tody Seal ?	Yes	No □
Custody Seal Inta	nct?	Yes	No 🗆
Temperature	°C	'	orr. Factor Corr. Temp
IR Gun:	T5		Samples on ice, in cool dow
Rus	sh 🗵 Shor	t Hold □ N	I/A □
Containers	Intact ?	Yes	No 🗆
Repacked and	Re-Iced?	Yes	No 🗆
Notes: (	Ann Osp	O 7/2	2/2020

Internal Transf	er Chain	of Custo	dy —				_					- 1	2	
x Samples Pre-Logge	d into eCOC.					State Cert.		rigin: M	//N Yes	x No		1		Analytical www.pacelabs.com
Workorder: 10525686	Workorder N	Name: B00260		er Gremlir	1			eived D	_	7/21/2020	Resul	ts Reque	sted By:	7/28/2020
Report To		Subcontra	ct Ta							Requeste	d Analysi	5		
Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700		8 Eas Ormo	Analytical Ormo t Tower Circle nd Beach, FL 3 e (386)672-566	32174		erved Cont	ainers	ne in DW by 522 (Pace FL)						
Item Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Officer			1,4-Dioxane					Ш	LAB USE ONLY
1 4151 Olter LK Rd	PS	7/20/2020 15:18	10525686001	Drinking	1			X						
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\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 35564846

Wednesday, July 22, 2020 12:45:51 PM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1



# Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

DEECADAC

m (SCUR)

Duoisest	MO#:355	0484	0	
Project	PM: SMM	Due Date:	07/28/20	Date and Initials of person:
Project Manage	CLIENT: PACMIN			Examining contents: TUA
Client				Deliver:
				pH:
Thermometer Used:	1349 Date	e: 7/2	Time:_	initials: In-
State of Origin:		☐ For W	/ projects, all containers	verified to ≤6 °C
Cooler #1 Temp. C 36 (Vi	sual)(Correct	tion Factor)	5 (Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp. °C(Vi	sual)(Correc	tion Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #3 Temp. °C(Vi				Samples on ice, cooling process has begu
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Cooler #5 Temp. °C(Vi	sual)(Correc	tion Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #6 Temp. °C(Vi	sual)(Correc	tion Factor)	(Actual)	Samples on ice, cooling process has begu
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5			Comments:	
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Chain of Custody Filled Out	QYes		1000000	
Relinquished Signature & Sampler			MANAGORA	166
Samples Arrived within Hold Time	Tyles		U	
Rush TAT requested on COC	□Yes	No □N/A		
Sufficient Volume	NYes	□ Ño □N/A		
Correct Containers Used	Yès	□ No □N/A	-	
Containers Intact Sample Labels match COC (sample IDs		□ No □N/A		
collection)	TYes	□ No □N/A		
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Headspace in VOA Vials? ( >6mm):		□ No \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	_	
Trip Blank Present:	□Yes	□ No IN/A		
Client Notification/ Resolution:		1		
Person Contacted:			Date/Time:	
O			-	
Comments/ Resolution (use back	for additional comments)			
Project Manager Review:				Date:





July 29, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958 New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525690001	519835	Drinking Water	07/20/20 08:33	07/21/20 14:40





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525690001	519835	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

Date: 07/29/2020 08:11 AM

Sample: 519835	Lab ID: 10	525690001	Collected: 07/20/2	20 08:33	Received: 07	/21/20 14:40	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	•		22 Preparation Methor	od: EPA	522			
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 14:10	123-91-1	
1,4-Dioxane-d8 (S)	93	%	70-130	1	07/27/20 10:45	07/28/20 14:10	)	



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method: EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Analyzed

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525690001

METHOD BLANK: 3543368

Matrix: Water

Associated Lab Samples: 10

1,4-Dioxane (p-Dioxane)

Date: 07/29/2020 08:11 AM

1,4-Dioxane-d8 (S)

1

10525690001

Blank Reporting

Parameter Units Result Limit

ug/L ND 0.20 07/28/20 12:00 % 98 70-130 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
1,4-Dioxane (p-Dioxane) 1,4-Dioxane-d8 (S)	ug/L %	0.2	0.20	102 96	50-150 70-130		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

			MS	MSD					_			
		10525818001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20.4	20.2	19.6	19.0	96	94	70-130	3	20	
1,4-Dioxane-d8 (S)	%						101	101	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(612)607-1700



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 07/29/2020 08:11 AM





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin

Pace Project No.: 10525690

Date: 07/29/2020 08:11 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525690001	519835	EPA 522	651671	EPA 522	652021

Pace Analytical www.pucesasscom

CHAIN-OF-CUSTODY / Analytical Request Document

ITEM# sis to be performed at Pace FL quested Due Date: equired Client Information:
Impany: Wenck Associates, Inc. ple Plain, MN 55359 kjaworski@wenck.com 1800 Pioneer Creek Center NONE Sample lds must be unique One Character per box.
(A-Z, 0-91, -) 19835 SAMPLE ID ADDITIONAL COMMENTS MATRIX
Drinking Water
Water
Waste Water
Product
Soil/Soild
Oil
Wipe
Air
Other Project Name: Water Gremlin Project # 1500 2606 Copy To: Report To: Kelly Jaworski JS SE SE D WALL MAN DE CODE Purchase Order #: Required Project Information: Section B RELINQUISHED BY / AFFILIATION MATRIX CODE (see valid codes to left) T SAMPLE TYPE (G=GRAB C=COMP) Water Gremlin Well Sampling - 2606-0017
2606-19-017 7/20/26 START WPLER NAME AND SIGNATURE which TIME SIGNATURE of SAMPLERS PRINT Name of SAMPLERS COLLECTED Hep The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. 7/6/2 8 DATE SAMPLE TEMP AT COLLECTION 20/08 TIME # OF CONTAINERS Pace Quote: Pace Project Manager: Pace Profile #: Address: Invoice Information: Attention: Company Name: Section C Unpreserved H2SO4 Layson НИОЗ Preservatives HCI NaOH ACCEPTED BY JAFFILLATION Na28203 annika.asp@pacelabs.com Methanol Other どれて wenc Analyses Test Y/N 522 1,4-dioxane W0#:10525690 7/18/20 Haves DATE 1440 075 12:00 TEMP in C Received on Page: Regulatory Agency Residual Chlorine (Y/N) (Y/N) Custody Sealed Cooler <u>8</u> Samples Intact (Y/N) 잋 age 9 of 12

# Pace Analytical\*

hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

Document Revised: 27Mar2020

Page 1 of 1

Labeled by: \_\_\_\_\_MLZ Page 10 of 12

Pace Analytical Services - Minneapolis

## ENV-FRM-MIN4-0150 Rev.00

Sample Condition Upon Receipt  We nek Associates I	-NE		Pr	roject #:	- 777		0525690	Section 1997 Annual Property Control
Courier: Fed Ex UPS Pace SpeeDee	U		ial See Ex	lient		AKA ENT: WENC	Due Date: ( K	07/28/20
Tracking Number:			[					
Custody Seal on Cooler/Box Present? Yes	ŽŃo	Se	als Intaci	t? 🔲Yes		No <b>Biolo</b>	gical Tissue Frozen?	□Yes □No ☑N/A
Packing Material: Bubble Wrap Bubble B		None	□Otł	ner:		·····	Temp Blank?	Yes No
Thermometer:       ☐ T1(0461) ☐ T2(1336) ☐ T3(0459)         ☐ T4(0254) ☐ T5(0489)		Type of	lce:	Wet [	Blue	□None	□Dry □Melted	
Did Samples Originate in West Virginia? ☐Yes ☐No				Temps Take	en? ∐Y	es □No 💋	N/A	
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blani	c:	1.6,	1.2	⁰℃	Average Corrected	•
Correction Factor: 1000 Cooler Temp Correcte	ed w/tem	p blank	: <u></u>	1.6,	1,2	ºc	(no temp blank of	nly): See Exceptions  1 Container
USDA Regulated Soil: ( N/A, water sample/Other: Did samples originate in a quarantine zone within the Unit ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m If Yes to either question, fill out a	aps)? [	Yes	□No	A, Did sai Hawaii	mples or i and Pue	iginate from a erto Rico)?	nining Contents: foreign source (internat No GCUR/COC paperworl	ionally, including
Chain of Custody Present and Filled Out?	Zives	□No		1.				
Chain of Custody Relinquished?	Ves	□No		2.				
Sampler Name and/or Signature on COC?	☐Yes	□No	□N/A	3.				
Samples Arrived within Hold Time?	Yes	□No		4.				
Short Hold Time Analysis (<72 hr)?	∐Yes	No					otal Coliform/E coli BO	
Rush Turn Around Time Requested?	∕ZÝes	□No		6. 5 d	K-V			**************************************
Sufficient Volume?	✓️Yes	□No		7.	/			
Correct Containers Used?	□∀es	□No		8.				
-Pace Containers Used?	□yes	□No						
Containers Intact?	Wes	□No	···	9.				
Field Filtered Volume Received for Dissolved Tests?	Yes	□No	₽N/A	10. Is se	diment	visible in the	dissolved container?	Yes No
Is sufficient information available to reconcile the samples to the COC?	Yes	□No		11. If no,	write ID/	Date/Time on	Container Below:	See Exception
Matrix: Water Soil Oil Other								
All containers needing acid/base preservation have been checked?	∐Yes	∏No	ØN/A	12. Sampl	e#			
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	∐Yes	□No	[]N/A		] NaOH	☐ HN	O₃ ∏H₂SO₄	Zinc Acetate
Everytions: VOA Coliform TOC/DOC Oil and Course	∐Yes	□No	JZN√A	Positive fo	r Res.	Yes		See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS			9	Chlorine?	L	<del></del>	pH Paper Lot#	0.1451
				Res. Chlor	ine	0-6 Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	□Yes □Yes	□No □No	ZN/A ZN/A	13.		<del></del>		See Exception
Trip Blank Present?	Yes	□No	ZN/A	14.				
Trip Blank Custody Seals Present?	Yes	□No	ØÑ/A	Pace	Trip Bla	nk Lot # (if pu	rchased):	
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:				Date/Tir	ne:	Field	Data Required?	Yes No
111	1	a 1						
Project Manager Review:	complianc	e sample	s a convi	of this form	Date:			sation Office / i.e. sut of

K	>
C	)
-	1
15	)
C	)
K	)
K	2
C	)
#	1
C	
	3

X Samples Pre-Logged into **IIIIIIIIIIIIIII** Internal Transfer

Workorder Name: B002606-19-017 Water Gremlin Subcontract Ta

Workorder: 10525690

Pace Analytical Ormond Beach

Ormond Beach, FL 32174

8 East Tower Circle

Pace Analytical Minnesota 1700 Elm Street

Annika Asp

Report To

Minneapolis, MN 55414

Suite 200

Phone (612)607-1700

Phone (386)672-5668

Yes Owner Received Date: State Of Origin: MN Cert. Needed:

7/21/2020

Results Requested By: ×

Pace Analytical

7/28/2020

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL) Preserved Containers

NA2S2O3

Drinking Matrix

10525690001 Lab ID

7/20/2020 08:33

PS

Date/Time Collect

Sample Type

Item Sample ID

519835

3

LAB USE ONLY

Comments

7173/20 111C

MATEMAI PACE TS49

Received By

Date/Time

Released By

Transfers

Date/Time

Samples Intact (Y)) or

Z

Received on Ice (Y) or N

Custody Seal (T) or N Cooler Temperature on Receipt 5,8 °C This chain of custody is considered complete as is since this information is available in the owner laboratory.

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.



Document Name: Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13 Document Revised: May 30, 2018 Issuing Authority; Pace Florida Quality Office

Project Manager Review:

WO#: 35565165

Client:	Due Date:	07/28/20	Date and Initials of person: Examining contents: The Deliver: pH:
Thermometer Used: 1349	Date: 7 23	ພ Time:	III4 Initials: I-1.
State of Origin:		projects, all containers ve	erified to ≤6 °C
Cooler #1 Temp.°C_S(Visual)	(Correction Factor)	S (Actual)	Samples on ice, cooling process has begu
Cooler #2 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #3 Temp.°C(Visual)			Samples on ice, cooling process has begu
Cooler #4 Temp.°C(Visual)	(Correction Factor)	(Actual)	Samples on ice, cooling process has begu
Cooler #5 Temp.°C(Visual)		-	Samples on ice, cooling process has begu
Cooler #6 Temp.°C(Visual)			Samples on ice, cooling process has begu
□ Other_	rity Overnight    Standard	ommercial ☐ Pace Overnight ☐ Grou	☐ Other  International Priority
Billing: ☐ Recipient Sender	Third Party	☐ Credit Card	☐ Unknown
Tracking #1320	7523 285	4	
Custody Seal on Cooler/Box Present: Yes Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	Bags None Ot	her	Ice: Wet Blue Dry None
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	Bags None Ot	her	rted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present	Bags None Ot Shorted Date:	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chaln of Custody Filled Out	Bags None Ot Shorted Date:	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC	Bags None Ot Shorted Date:	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chaln of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time	Bags	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC	Bags	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chaln of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume	Bags	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used	Bags None Ot Shorted Date:  No DN/A  NYes No DN/A  Yes No DN/A  Yes No DN/A  Yes No DN/A	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time Material)	Bags None Ot Shorted Date:  No N/A  NYes No N/A	herSho	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact	Bags None Ot Shorted Date:  Shorted Date:  No N/A  Yes No N/A	Sho	rted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time Not collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be compliance with EPA recommendation:	Bags None Ot Shorted Date:  Shorted Date:  No N/A  Yes No N/A	Preservativ Lot #/Trace Date:	Preservation Information:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of collection) All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be compliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC O&E,	Bags None Ot Shorted Date:    Yes   No   N/A     Yes   No   N/A	Preservativ Lot #/Trace Date:	Preservation Information:

Date:





July 30, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

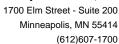
Annika Asp annika.asp@pacelabs.com (612)607-1700

ann Asp

Project Manager

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958

New Jersey Certification #: FL022 New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525823001	4160 OTTER LK RD	Drinking Water	07/22/20 10:44	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525823001	4160 OTTER LK RD	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

Date: 07/30/2020 12:22 PM

Sample: 4160 OTTER LK RD	Lab ID: 105	25823001	Collected: 07/22/2	0 10:44	Received: 07	/22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Method: EPA 522 Preparation Method: EPA 522							
	Pace Analytica	i Services -	Ormond Beach					
	· · · · · · · · · · · · · · · · · · ·							
1,4-Dioxane (p-Dioxane)  Surrogates	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 17:0	7 123-91-1	

(612)607-1700



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Associated Lab Samples: 10525823001

METHOD BLANK: 3543368

Date: 07/30/2020 12:22 PM

Matrix: Water

Associated Lab Samples: 10525823001

mann. mator

Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	0.20	07/28/20 12:00	
1,4-Dioxane-d8 (S)	%	98	70-130	07/28/20 12:00	

LABORATORY CONTROL SAMPLE:	3543369					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L		18.6	93	70-130	
1,4-Dioxane-d8 (S)	%			99	70-130	

LABORATORY CONTROL SAMPLE:	3543370					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.20	102	50-150	
1,4-Dioxane-d8 (S)	%			96	70-130	

MATRIX SPIKE & MATRIX SP	IKE DUPLI	CATE: 3543	371		3543372							
			MS	MSD								
		10525818001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20.4	20.2	19.6	19.0	96	94	70-130	3	20	
1,4-Dioxane-d8 (S)	%						101	101	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525823

Date: 07/30/2020 12:22 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525823

Date: 07/30/2020 12:22 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525823001	4160 OTTER LK RD	EPA 522	651671	EPA 522	652021

Pace Analytical www.paceuses.com

CHAIN-OF-CUSTODY / Analytical Request Document

ŏ Regulatory Agency SAMPLE CONDITIONS Ş State / Location Page: Residual Chlorine (Y/N) The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. ٣ Кесејува оп F 3,5 TEMP In C WO#: 10525823 (2:0) 2/22/20 10gs 1/19/20 200 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION Sonch 522 1,4-dioxane N/A tseT sesylanA 61500 Other Nethanol Preservatives Na2S2O3 39664, 4 Company Name:
Address:
Pace Quote:
Pace Project Manager: HOBN Invoice Information: IOH ниоз Pace Profile #: Section C H5204 Attention: 1 Se Unpreserved # OF CONTAINERS SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SAMPLE TEMP AT COLLECTION 2/22/2 7/22/EV H16/20 Project Name: Water Gremlin Well Sampling - 2506-0017 SIGNATURE of SAMPLER DATE TIME <u>ス</u>ゴ:ご END DATE COLLECTED Age of RELINQUISHED BY/AFFILIATION Strength TIME 71422 START Rottle Required Project Information: Kelly Jaworski <u>.</u>D (G=GRAB C=COMP) SAMPLE TYPE Purchase Order#: MATRIX CODE (see valid codes to left) 3 Report To: Copy To: Section B MATRIX
Dinking Water
Vaste
Waste Water
Product
Product
Oil
Whee
Air
Other
Tissue のならにて不り quested Due Date: 6 1264 T-4-1 One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS. 1800 Pioneer Creek Center SAMPLE ID equired Client Information: unpany: Wenck Associates, Inc. 4160 HIGO kjaworski@wenck.com rsis to be performed at Pace FI aple Plain, MN 55359 ail: kjaworski@we NONE 

Samples Intact (Y/V)

Cooler Sealed Custod

(V/V)



hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - **Minneapolis** 

Sample Condition Client Name:			Pre	oject #:	WO:	#:10	525823	}
Upon Receipt Wench Associate	الأبر كا	ባር\		ì	PM: A			
Courier: Fed Ex UPS Pace SpeeDee	US	SPS	Cli			T: WENCK	Due Date: 0	7/29/20
Tracking Number:	,	illille C	ai 3ee EX				······································	
Custody Seal on Cooler/Box Present? Yes	No	So	als Intact	— ∟ ? □Yes	MN	o Biolog	ical Ticcua Erozan?	☐Yes ☐No ☒N/A
Packing Material: Bubble Wrap Bubble B		None	Oth	_	, <u>F</u> JI4	o Biolog	Temp Blank?	<b>→</b>
		Лиопе	Otn	er:			remp Blanks	<u> </u> X Yes ∐No
Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489)		Type of			Blue	□None	□Dry □Melte	b
Did Samples Originate in West Virginia? ☐Yes ☑No				Temps Tak	en? 🗌 Ye			
Temp should be above freezing to 6°C Cooler Temp Re	ad w/ten	np blank	: <u> </u>	) ;72,≤	>	⁰c	Average Corrected	·
Correction Factor: TWE Cooler Temp Correcte	d w/tem	n blank	. 2.1	, 2.5		oc	(no temp blank o	·· <del>-</del> · ·
USDA Regulated Soil: ( N/A, water sample/Other:	,	y within	·		nitials of I		ining Contents:/	1 1 - 1 - 2 - 1
Did samples originate in a quarantine zone within the Unit	ed States	: AL. AR.	CA. FL. GA				oreign source (interna	
ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check m		Yes	□No	-	ii and Puer		☐Yes ☐No	
If Yes to either question, fill out a	Regulated	d Soil Ch	ecklist (F	-MN-Q-33	8) and in	clude with S	CUR/COC paperwoi	k.
							COMMENTS:	
Chain of Custody Present and Filled Out?	Yes	□No		1.				
Chain of Custody Relinquished?	Yes	□No		2.				
Sampler Name and/or Signature on COC?	Yes	□No	□n/a	3.				
Samples Arrived within Hold Time?	XVes	□No		4.				
Short Hold Time Analysis (<72 hr)?	□Yes	⊠No					tal Coliform/E coli 🔲 Bo te 🔲 Orthophos 🔲 Oth	DD/cBOD Hex Chrome
Rush Turn Around Time Requested?	XÎYes	□No	,	6.5 D	au TA	7		. ***
Sufficient Volume?	Yes	□No		7.	1	i,	•	
Correct Containers Used?	Ş∏Yes	□No		8.				
-Pace Containers Used?	Yes	□No						
Containers Intact?	✓Yes	□No		9.				
Field Filtered Volume Received for Dissolved Tests?	□Yes	□No	I <b>⊠</b> N/A	10. is s	sediment v	visible in the o	lissolved container?	Yes No
Is sufficient information available to reconcile the samples			<u> </u>	+			Container Below:	See Exception
to the COC?	₩es	□No						□ .
Matrix: Water Soil Oil Other								
All containers needing acid/base preservation have been	Yes	□No	<b>∠Z</b> N/A	12. Samp	ole#			1511
checked?		_						
All containers pending presentation are found to be in	_	_	_	-	7			
All containers needing preservation are found to be in compliance with EPA recommendation?	∐Yes	□No	ØN/A	[	NaOH	☐ HNC	D₃ □H₂SO₄	Zinc Acetate
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)								
	_	_	٠.	Positive 1	for Res.	Yes		See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	∐Yes	∐No	ØN/A	Chlorine	? [	No p	H Paper Lot#	
DRO/8015 (water) and Dioxin/PFAS				Res. Chlo	rine	0-6 Roll	0-6 Strip	0-14 Strip
Extra labels present on soil VOA or WIDRO containers?			<b>-</b>	12				
Headspace in VOA Vials (greater than 6mm)?	∐Yes ∐Yes	∐No ∏No	ØN/A ØN/A	13.				See Exception
Trip Blank Present?	☐Yes	□No	N/A	14.				
Trip Blank Custody Seals Present?	Yes	□No	<b>⊠</b> N/A	1	e Trip Bla	nk Lot # (if pu	rchased):	·
CLIENT NOTIFICATION/RESOLUTION								Yes No
Person Contacted:				Date/T	ime:	riciu	Data Negalieur	_1.63 [_]HO
Comments/Resolution:				, .				
Project Manager Review:  Note: Whenever there is a discrepancy affecting North Carolina	compliance	e sample	copy o	of this form	Date: will be ser	nt to the North	7/22/2020 Carolina DEHNR Certi	fication Office ( i.e out of

Labeled by: MV 7 age 0 of 1:

# WO#:35565185

# Internal Transi

x Samples Pre-Logge

Workorder: 10525823

State Of Origin: MN Cert. Needed: Workorder Name: B002606-19-017 Water Gremlin W

Pace Analytical Ormond Beach

Subcontract To

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Ormond Beach, FL 32174 Phone (386)672-5668

Yes Owner Received Date:

× 7/22/2020

Pace Analytical

7/29/2020

Results Requested By:

Requested Analysis

(Pace FL) S22 (Pace FL)

Preserved Containers

Matrix

Lab ID

Collect Date/Time

Sample Type

7/22/2020 10:44

PS

4160 OTTER LK RD

Sample ID

Item

LAB USE ONLY

AG1U

Опргезетуей

Drinking 10525823001

Received By

Released By

**Transfers** 

Comments

835 TMA 1200 Date/Time

7/23/20 11/10

Date/Time

Custody Seal (Y) or N

Samples Intact (Y) Jor

Received on Ice (V) or

Cooler Temperature on Receipt 5.6 °C

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 11 of 12

Page 1 of 1



### Document Name: Sample Condition Upon Receipt Form Document No.: F-FL-C-007 rev, 13

Document Revised: May 30, 2018 Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project : WO#:	22202102	Data and british of
Project Manager PM: SMM	Due Date: 07/29/20	Date and Initials of person: Examining contents:
AL PENT		Label:
Client: CLIENT:	, nellali	Deliver:
	- 1	pH:
Thermometer Used: 1349	Date: 7 23 W Tir	ne: [[14 Initials:
State of Origin:	For WV projects, all cont	ainers verified to ≤6 °C
Cooler #1 Temp. °C_S(Visual)	(Correction Factor) 5.8 (Act	ual) Samples on ice, cooling process has beg
Cooler #2 Temp. °C [ 7 (Visual)		
Cooler #3 Temp.°C(Visual)	(Correction Factor)(Act	
Cooler #4 Temp.°C(Visual)	(Correction Factor)(Act	ual) Samples on ice, cooling process has beg
Cooler #5 Temp.°C(Visual)	(Correction Factor)(Act	ual) Samples on ice, cooling process has beg
Cooler #6 Temp.°C(Visual)	(Correction Factor)(Act	ual) Samples on ice, cooling process has beg
Courier: Fed Ex UPS UPS		C 01
Shipping Method: First Overnight Prior	SPS Client Commercial	Pace Other
Other	rity Overnight    Standard Overnight I	☐ Ground ☐ International Priority
Billing: ☐ Recipient Sender	☐ Third Party ☐ Credit Car	d □ Unknown
Tracking # 1320	7523 2854	G GINIOWII
1520	1065 6001	
Packing Material: Bubble Wrap Bubble		
Packing Material: Bubble Wrap Bubble	Bags None OtherShorted Date:	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)	Bags None Other	
Custody Seal on Cooler/Box Present: Yes  Packing Material: Bubble Wrap Bubble  Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out	Bags None Other Shorted Date: Comments:	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete) Chain of Custody Present	Bags None Other Shorted Date: Comments:	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC	Bags	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC	Bags	
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present  Chain of Custody Filled Out	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of Collection)	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of Collection) Ill containers needing acid/base preservation have been hecked. Ill Containers needing preservation are found to be in	Bags	Shorted Time: Qty:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of ollection) Ill containers needing acid/base preservation have been hecked. Ill Containers needing preservation are found to be if ompliance with EPA recommendation:	Shorted Date:   Comments:     Yes	Shorted Time: Qty:  Preservation Information:  #/Trace #:  te: Time:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of ollection) Ill containers needing acid/base preservation have been hecked. Ill Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, O	Bags	Shorted Time: Qty:  T1/29120 TruA  Preservation Information: eservative: #/Trace #:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of ollection) Ill containers needing acid/base preservation have been hecked. Ill Containers needing preservation are found to be if ompliance with EPA recommendation:	Shorted Date:   Comments:     Yes	Shorted Time: Qty:  Preservation Information:  #/Trace #:  te: Time:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of collection) all containers needing acid/base preservation have been becked.  If Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, of leadspace in VOA Vials? (>6mm):  rip Blank Present:	Bags	Shorted Time: Qty:  Preservation Information:  #/Trace #:  te: Time:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of Collection) Ill containers needing acid/base preservation have been becked. Ill Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, (leadspace in VOA Vials? ( >6mm):	Bags	Preservation Information:  ##Trace #:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of collection) all containers needing acid/base preservation have been hecked. all Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, or leadspace in VOA Vials? ( >6mm): rip Blank Present:  Ilient Notification/ Resolution: Person Contacted:	Bags   None   Other   Shorted Date:  Comments:  Yes   No   N/A   Date/Tim	Preservation Information:  ##Trace #:
Packing Material: Bubble Wrap Bubble Samples shorted to lab (If Yes, complete)  Chain of Custody Present Chain of Custody Filled Out Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time Rush TAT requested on COC Sufficient Volume Correct Containers Used Containers Intact Sample Labels match COC (sample IDs & date/time of collection) all containers needing acid/base preservation have been becked. all Containers needing preservation are found to be incompliance with EPA recommendation:  Exceptions: VOA, Coliform, TOC, O&G, of leadspace in VOA Vials? (>6mm):  rip Blank Present:  Lient Notification/ Resolution:	Bags   None   Other   Shorted Date:  Comments:  Yes   No   N/A   Date/Tim	Preservation Information:  ##Trace #:





July 30, 2020

Kelly Jaworski Wenck Associates, Inc. 1800 Pioneer Creek Center Maple Plain, MN 55359

RE: Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

### Dear Kelly Jaworski:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

• Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp annika.asp@pacelabs.com (612)607-1700 Project Manager

ann Asp

Enclosures







### **CERTIFICATIONS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

**Pace Analytical Services Ormond Beach** 

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST Alabama Certification #: 41320 Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383 Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074 Nebraska Certification: NE-OS-28-14 New Hampshire Certification #: 2958 New Jersey Certification #: FL022

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity





### **SAMPLE SUMMARY**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10525819001	4161 OTTER LK RD	Drinking Water	07/22/20 10:13	07/22/20 13:37





### **SAMPLE ANALYTE COUNT**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10525819001	4161 OTTER LK RD	EPA 522	СТВ	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach





### **ANALYTICAL RESULTS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

Date: 07/30/2020 12:22 PM

Sample: 4161 OTTER LK RD	Lab ID: 10	525819001	Collected: 07/22/2	20 10:13	Received: 07	/22/20 13:37	Matrix: Drinking	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane	Analytical Me	thod: EPA 52	2 Preparation Metho	od: EPA	522			
	Pace Analytic	al Services -	Ormond Beach					
1,4-Dioxane (p-Dioxane) <b>Surrogates</b>	ND	ug/L	0.21	1	07/27/20 10:45	07/28/20 16:19	123-91-1	
		%			07/27/20 10:45			



### **QUALITY CONTROL DATA**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

QC Batch: 651671

QC Batch Method: EPA 522

Analysis Method:

EPA 522

Analysis Description:

522 MSS 1,4 Dioxane

Laboratory:

Pace Analytical Services - Ormond Beach

Qualifiers

Associated Lab Samples: 10525819001

METHOD BLANK: 3543368

Date: 07/30/2020 12:22 PM

Matrix: Water

Associated Lab Samples: 10525819001

Parameter Units Result Limit

 Parameter
 Units
 Result
 Limit
 Analyzed

 1,4-Dioxane (p-Dioxane)
 ug/L
 ND
 0.20
 07/28/20 12:00

 1,4-Dioxane-d8 (S)
 %
 98
 70-130
 07/28/20 12:00

LABORATORY CONTROL SAMPLE: 3543369

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) 20 18.6 93 70-130 ug/L 1,4-Dioxane-d8 (S) 99 70-130 %

LABORATORY CONTROL SAMPLE: 3543370

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1,4-Dioxane (p-Dioxane) ug/L 0.2 0.20 102 50-150 1,4-Dioxane-d8 (S) % 96 70-130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543371 3543372

MS MSD 10525818001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual 1,4-Dioxane (p-Dioxane) ND 20.2 96 70-130 3 20 ug/L 20.4 19.6 19.0 94 1,4-Dioxane-d8 (S) 101 % 101 70-130

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



### **QUALIFIERS**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **WORKORDER QUALIFIERS**

WO: 10525819

Date: 07/30/2020 12:22 PM

[1] The enclosed data is not intended for regulatory compliance; certification was waived by the client.





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: B002606-19-017 Water Gremlin W

Pace Project No.: 10525819

Date: 07/30/2020 12:22 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10525819001	4161 OTTER LK RD	EPA 522	651671	EPA 522	652021

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Regulatory Agency ŏ SAMPLE CONDITIONS State / Location 0 AO#: 10525819 2 Page: Residual Chlorine (Y/V) кесејлед оп る LEMP In C 3:21 ALZ CI VOLZA Requested Analysis Filter 10525819 1/19/20 DATE annika.asp@pacelabs.com, ACCEPTED BY / AFFILIATION 622 1,4-dioxane Work N/A teeT aesylanA lonariteM Preservatives Ne2S2O3 HOBN Company Name:
Address:
Pace Quote:
Pace Project Manager:
Pace Profile #: 39684. invoice Information: ЮН КОИН Section C **H**2804 Attention: 4000 N 10905 Unpreserved 45:01/2012/ # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 7/6/20 PRINT Name of SAMPLER: 122.12 DATE TIME 2 2 DATE COLLECTED Bed RELINQUISHED BY! AFFILIATION Street 7/21/2 TIME START Required Project Information: DATE Kelly Jaworski (G=GRAB C≈COMP) SAMPLE TYPE ŋ Purchase Order#. MATRIX CODE (see valid codes to left) 70 Project Name: Project #: Report To: Section B Copy To: MATRIX
Drinking Water
Waste Waste
Waste Water
Product
Product
Osiusosid
Osi
Wipe
Afr
Other
Tissue One Character per box. (A-Z, 0-91, -). Sample Ids must be unique ADDITIONAL COMMENTS Fax 1800 Pioneer Creek Center SAMPLE ID S 0 m mpany: Wenck Associates, Inc. 0 kjaworski@wenck.com equired Client Information: rsis to be performed at Pace FL でまれ aple Plain, MN 55359 NONE quested Due Date: dress: 

Pace Analytical www.paceases.com

Page 9 of 12

(N/A) IoBin

Semples

Sealed Cooler VVVV

Custod

(N/X)

DATE Signed: 7 / 22 / 23

~/werk

SIGNATURE of SAMPLER:



**Project Manager Review:** 

hold, incorrect preservative, out of temp, incorrect containers).

### Document Name:

### Sample Condition Upon Receipt (SCUR) - MN

Document No.:

ENV-FRM-MIN4-0150 Rev.00

Document Revised: 27Mar2020

Page 1 of 1

Pace Analytical Services - Minneapolis

Sample Condition **Client Name:** Project # #:105258 Wench Associates, Inc. **Upon Receipt** Due Date: 07/29/20 Courier: Fed Ex Client □UPS **□USPS** CLIENT: WENCK Pace SpeeDee Commercial See Exceptions **Tracking Number: Custody Seal on Cooler/Box Present?** Yes Seals Intact? Biological Tissue Frozen? Yes No N/A Yes Other: Packing Material: Bubble Wrap Bubble Bags None Temp Blank? XiYes ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) Thermometer: ₩et ∐Blue Type of Ice: None Dry Melted T4(0254) X T5(0489) Did Samples Originate in West Virginia? 
☐Yes Were All Container Temps Taken? ☐ Yes ☐ No ☒N/A ₽No Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **Average Corrected Temp** (no temp blank only): ☐See Exceptions 21,25 **Correction Factor:** Cooler Temp Corrected w/temp blank: ☐1 Container USDA Regulated Soil: ( X N/A, water sample/Other: Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, Did samples originate from a foreign source (internationally, including ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ∏No Hawaii and Puerto Rico)? Yes □No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork. **COMMENTS:** Chain of Custody Present and Filled Out? Yes □No 1. Chain of Custody Relinquished? **X**Yes □No 2. Sampler Name and/or Signature on COC? Yes □No □N/A 3. Samples Arrived within Hold Time? **⊠**Yes □No 4. Short Hold Time Analysis (<72 hr)? ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ΜNο Yes ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other\_ 6.5 Day TAT **Rush Turn Around Time Requested?** Yes □No Sufficient Volume? Yes □No 7. Correct Containers Used? Yes □No 8. -Pace Containers Used? **⊠**Yes □No Containers Intact? ✓Yes □No 9. Field Filtered Volume Received for Dissolved Tests? ☐ Yes □No N/A Is sediment visible in the dissolved container? Yes No Is sufficient information available to reconcile the samples 11. If no, write ID/ Date/Time on Container Below: See Exception to the COC? Ø¥es □No Matrix: Water Soil Oil Other All containers needing acid/base preservation have been \_ZN/A 12. Sample # Yes □No checked? All containers needing preservation are found to be in ☐ NaOH ☐ HNO₃ H<sub>2</sub>SO<sub>4</sub> ☐ Yes Zinc Acetate compliance with EPA recommendation? (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Positive for Res. Yes See Exception Exceptions: VOA, Coliform, TOC/DOC Oil and Grease. ☐ Yes Chlorine? ΠNo 1 | pH Paper Lot# DRO/8015 (water) and Dioxin/PFAS Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip Extra labels present on soil VOA or WIDRO containers? 13. ☐Yes ☐Yes ∏No □No ØN/A N/A See Exception Headspace in VOA Vials (greater than 6mm)? N/A N/A Trip Blank Present? Yes □No Trip Blank Custody Seals Present? Yes □No Pace Trip Blank Lot # (if purchased): **CLIENT NOTIFICATION/RESOLUTION** Field Data Required? Yes No Person Contacted: Date/Time: Comments/Resolution:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Page 10 of 12

7/22/2020

Date:

Labeled by:

× Yes Owner Received Date: State Of Origin: MN Cert. Needed:

Results Requested By: 7/22/2020

Pace Analytical

7/29/2020

Workorder Name: B002606-19-017 Water Gremlin W

× Samples Pre-Logged into eC 35565179

Workorder: 10525819

Subcontract To

Requested Analysis

1,4-Dioxane in DW by 522 (Pace FL)

Pace Analytical Ormond Beach

8 East Tower Circle

Pace Analytical Minnesota

Annika Asp

Report To

1700 Elm Street

Suite 200

Minneapolis, MN 55414 Phone (612)607-1700

Ormond Beach, FL 32174 Phone (386)672-5668

Preserved Containers Unpreserved Matrix Lab ID **Date/Time** Collect

10525819001 7/22/2020 10:13 Sample Type PS

LAB USE ONLY

×

4161 OTTER LK RD

Sample ID

Item

Drinking

1821 TIMA Pace T349 Received By Date/Time 7/W/W Released By

Transfers

Received on Ice (V) or Custody Seal ( ) or N Cooler Temperature on Receipt 5.8 °C

Samples Intact (Y) or

Comments

01110012011

Date/Time

This chain of custody is considered complete as is since this informetion is available in the owner laboratory

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

Page 11 of 12

Page 1 of 1

FMT-ALL-C-002rev.00 24March2009



Document Name: Sample Condition Upon Receipt Form Document No.; F-FL-C-007 rev. 13

Document Revised: May 30, 2018 Issuing Authority; Pace Florida Quality Office

WO#: 35565179

m (SCUR)

Date

Project 7	MM Due Date: 07/29/20 IT: PACMIN	Date and Initials of person: Examining contents:
Client:		Deliver:
Thermometer Used: 1349	Date: 7 23 W Time:	pH:
State of Origin:	For WV projects, all container	s verified to ≤6 °C
Cooler #1 Temp.°C_S(Visual)	O (Correction Factor) 5 & (Actual)	Samples on ice, cooling process has begur
Cooler #2 Temp. °C(Visual)	(Correction Factor) (Actual)	Samples on ice, cooling process has begun
Cooler #3 Temp.°C(Visual)	(Correction Factor)(Actual)	Samples on ice, cooling process has begui
Cooler #4 Temp.°C(Visual)	(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #5 Temp.°C(Visual)	(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Cooler #6 Temp.°C(Visual)	(Correction Factor)(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex UPS Shipping Method: First Overnight	USPS Client Commercial Pa	ce Other round International Priority
A	ender	☐ Unknown
Tracking # 1320	7523 2854	E GINNOWII
Custody Seal on Cooler/Box Present:		
Packing Material: Bubble Wrap Bu Samples shorted to lab (If Yes, complete)		Shorted Time: Qty:
Chain of Custody Present	Comments:	
Chain of Custody Filled Out	Ryes 🗆 No 🗆 N/A	
Relinquished Signature & Sampler Name CO		
Samples Arrived within Hold Time	Thes DNO DNA MISSION	
Rush TAT requested on COC	Elves (No DNA -117-8170 -	1129120 Trus
Sufficient Volume	QYes □ No □N/A	1100
Correct Containers Used	XYes □ No □N/A	
Containers Intact	VEYES INO IN/A	
Sample Labels match COC (sample IDs & date/time collection)	V NYes II No IIN/A	91
All containers needing acid/base preservation have checked.	been	Preservation Information:
Il Containers needing preservation are found to	Preserv Lot #/Tr	ative:
compliance with EPA recommendation:	Date:	Time:
Exceptions: VOA, Coliform, TOC, Cleadspace in VOA Vials? ( >6mm):		
rip Blank Present:	□Yes □ No NN/A	
lient Notification/ Resolution: Person Contacted:	Date/Time:	
omments/ Resolution (use back for additio	nal comments):	
Project Manager Review:		Date

## Appendix E

Validation Reports and Electronic Data Deliverables (EDDs)

DIANE SHORT & ASSOCIATES, INC	1978 S. Garrison St. # 114 Lakewood CO 80227 303:271-9642 dsa7cbc@eazygagc.com
ORGANIC AIR QUALITY REPORT METHOD TO-15	asa/coc@eazyqaqc.com
LAB NO: <u>10524499</u>	
PROJECT: Water Gremlin, MN; Project # 2606-0017 Water Gremand Engineering	nlin, Wenck Environmental Consulting
LABORATORY: Pace Analytical, Minneapolis, MN	
SAMPLE MATRIX: <u>Air</u>	
SAMPLING DATE (Month/Year): July 2020	
NUMBER OF SAMPLES: 4 air samples	
ANALYSES REQUESTED: <u>Summa Canister VOA TO-15</u>	
SAMPLE NO.: See Attached List	
DATA REVIEWER: John Huntington	
QA REVIEWER: Diane Short & Associates, Inc. INITIALS/DA	TE: DLS9/7/2020

The EPA CLP National Functional Guidelines for Organic Data Review (NFG), 1999 and 2017 (SOP), EPA Method TO-15 current updates, and the Quality Assurance Plan, MPCA Site Assessment Program (2014) have been used by the reviewer to perform this data validation review. The EPA qualifiers have been expanded to include a descriptor code and value to define QC violations and their values, per the approval of the Project Manager. Per the Scope of Work, the review of these samples includes validation of all QC forms referencing the QC limits in the above documents. For 10% of the data, chromatograms and mass spectra have been reviewed for each type of analysis and comments made on general data/ analytical quality.

Yes\_\_\_No\_X\_

Yes\_\_\_No\_X\_

Telephone Logs included

Contractual Violations

I. DELIVERABLES
All deliverables were present as specified in the Statement of Work (SOW) or in the project contract.
Yes X No
II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.
Yes _ X _ No
B. Holding Times
The contract holding times were met for all analyses (Time of sample receipt to time of analysis (VOA) or
extraction and from extraction to analysis). Contract holding times for TO-15 canisters is 30 days from date of collection.
Yes <u>X</u> No
C. Chains of Custody
Chains of Custody were present and were complete with signatures, sign-offs and complete entry of data.
Canisters were properly sampled and received.
Yes X No
D. Canister Pressure
Canister pressures were measured and recorded for initial vacuum check, initial field vacuum, final field
reading, lab initial pressure and final pressure.
Yes X No
Initial field and final field pressure were recorded on the COC. The laboratory pressurization was recorded
on the sample receipt form.
E. All readings met the limits or exceptions were noted and pressure corrected.
Yes X No
See note above
III. INSTRUMENT CALIBRATION
A. Initial Calibration – GC/MS
1. The Relative Response Factors (RRF) and average RRF for all compounds for all analyses met the
required criteria.
Yes X No The initial calibration reports and instrument raw data reports are extremely faint and very difficult to read.
The laboratory needs to produce better quality copies. TO-15 does not specify minimum response factors.
We have used the NFG criteria for VOA analyses as a guide. The response factors for TO-15 are typically
higher than those in water analysis. All relative response factors for these analyses are above 0.05.
2. The relative standard deviation (RSD) for the five-point calibration was within the 30% limit.
Yes X No
In some cases, the laboratory has used a nonlinear regression curve. In such cases, the r value is >0.99. TO 15 does not include guidance for the use of non-linear regression. However, this is normally considered
acceptable to EPA.
B. Continuing Calibration – GC/MS
1. The RRF standard was analyzed for each analysis at the required frequency and the QC criteria were met YesX_ No

2. The percent difference (%D) limits were met.  Yes X No
IV. GC/MS INSTRUMENT PERFORMANCE CHECK  A. The BFB performance check was injected once at the beginning of each 12-hour period and relative abundance criteria for the ions were met.  Yes X No NA
TO-15 requires this check once every 24 hours. This frequency has been met.
B. The SIM PFTBA tune was performed once a month per the TO-15 criteria and the HP operation manual masses were present.  Yes No NA X SIM analysis not requested or conducted.
V. INTERNAL STANDARDS
A. Area Limits The Internal Standards met the TO-15 upper and lower limits criteria (+/- 40%) and the Retention times were within the required windows.  Yes X No
The laboratory has not provided a summary tabulation of the internal standard areas and retention times. The raw data includes a summary for each sample, but these have to be found manually and reviewed. This requires a raw data review for each sample, which was done for all 4 samples. All internal standards reviewed met TO-15 criteria.
B. Retention Times The relative retention times of the internal standards and sample compounds met the $\pm$ 0.06 RRT units limit. Yes $X_N No_N$ See the comment above.
VI. SURROGATE
Surrogate spikes were analyzed with every sample.
Yes No X This is not required for Method TO-15.
And met the recovery limits defined in the current contract Yes No NAX
VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE  A. Matrix spike (MS) and matrix spike duplicates (MSD) were analyzed for every analysis performed and for every 20 samples or for every matrix whichever is more frequent.  Yes NoNAX
Spikes are not amenable to canister analysis and are not required. Laboratory duplicates are required. These were present.
B. The MD relative percent differences (RPD) were within the defined contract limits. YesX_ NoNA
VIII. CONTROL SAMPLES
A. Control samples similar to Laboratory Control Samples (LCS) were performed for every set. Yes X No
WKWGAir_Sept2020 Page 3 of 5

B. And percent recoveries were acceptable at 70 – 130%.  Yes _X No
C. And Relative Percent Differences were within lab limits.  Yes No NAX_  Duplicate control checks are not required by the method.
IX. SHIFT CHECKS Shift checks were performed and were within time limits. Yes _X No The BFB tune check is required every 24 hours in Method TO-15.
X. BLANKS  A. Method Blanks were analyzed at the required frequency and for each matrix and analysis.  YesX No  This is a nitrogen blank run with each set.
B. The method blank was free of contamination.  YesX No
C. If Field Blanks were identified, they were free of contamination.  Yes No NAX  No field blanks are identified in this set of data.
D. Contamination level was less than 0.03 mg/cubic meter before samples were analyzed per the method. YesX_ No NA A representative set of canisters was screened for contamination at the laboratory for each SDG.
XI. FIELD QC  A. If Field duplicates or Performance Check Compounds were identified, they met the RPD or % recovery criteria for the project and project frequency of 1/20.  Yes No X NA
The QAPP defines a 50% RPD requirement for field duplicates and for results < 5 x RL, a difference of 4 x RL. There are no field duplicates identified in this set of data. The 1/20 sample frequency is not met unless the overall project frequency includes the 13 duplicates in the December 2019 set.
XII. SYSTEM PERFORMANCE The RICs, chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.  Yes_X_NoNA
XIII. TCL COMPOUNDS  A. The identification is accurate and all retention times, library spectra and reconstructed ion chromatograms (RIC) were evaluated for all detected compounds:  For this project, ten percent of the data are fully review for chromatograms and spectra.  Yes_X_NoNA
B. Quantitation was checked to determine the accuracy of calculations for representative compounds in each internal standard set

Page 4 of 5

WKWGAir\_Sept2020

Yes_X_No NA
XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TIC)
TICs were properly identified and met the library identification criteria.
Yes No NAX
Tentatively-identified compounds were not reported in this data set.

### OVERALL ASSESSMENT

Data are considered to be usable for project purposes.

### Deliverables

This project includes 4 air samples for T0-15 analysis.

The initial calibration reports and instrument raw data reports are extremely faint and very difficult to read. The laboratory needs to produce better quality copies.

The laboratory has not provided a summary tabulation of the internal standard areas and retention times. The raw data includes a summary for each sample, but these have to be found manually and reviewed. This requires a raw data review for each sample, which has been done for all 4 samples. All internal standards reviewed met TO-15 criteria.

### Field Duplicates

There are no field duplicates provided. The 1/20 sample frequency is not met unless the overall project frequency includes the 13 duplicates in the December 2019 set.

### Field Blanks

There are no field blanks provided.

### Table of Qualifiers Added

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA			
No qualifiers are applied.										

D	IA	NE	SHORT	A S	SSO	CIA	TES.	INC.
_		1 1 1 1	~ III	-			,	

1978 S. Garrison St. # 114 Lakewood CO 80227 303:271-9642 dsa7cbc@eazygagc.com

### <u>DATA VALIDATION FORM FOR INORGANICS</u> METALS BY ICP and ICP/MS SW-846 METHODs 6010D and 6020B

SDGs: 10523363, 10523661, 10523518, 10522729, 10522971, 10523355

PROJECT: Water Gremlin, MN; Project # 2606-0017 Water Gremlin, Wenck Environmental Consulting and Engineering

LABORATORY: Pace Analytical, Minneapolis, MN

SAMPLE MATRIX: Water

SAMPLING DATE: June and July, 2020

NO. OF SAMPLES: 32 Samples for dissolved lead, including 2 field duplicates and 2 field blanks

ANALYSES REQUESTED: SW-846 Method 6010D - Lead only

SAMPLE NUMBERS: See Attached List

DATA REVIEWER: John Huntington

QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: \$\int 8/24/2020\$

Yes\_\_\_No\_X\_

Yes\_\_\_No\_X

Comments:

Telephone Logs included

Contractual Violations

I.	DELIVERABLES
All	deliverables were present as specified in the Statement of Work (SOW) or project contract.

Yes X No The following are noted for clarification:

Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead, including 2 field duplicates and 2 field blanks. Hard copy data were not required and the full package was provided as pdf. Results are incorporated into the associated EDD.

There are no Case Narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

#### II. CALIBRATION AND STANDARDIZATION – ICP/MS

- A. Initial and Continuing Calibration
- 1. All initial instrument calibrations were performed as defined in the SOW or project contract. All correlation coefficients for the 3 point curves were > 0.995.

2. The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the required frequency.

3. The ICV and CCV standard percent recovery results were within the required control limits of 90.0 - 110.0%.

- B. ICP/MS Tune and Calibration
- 1. Mass calibration and resolution checks for both low and high mass isotopes are within 0.1 amu of the true value.
- II. Yes No N/A X ICPMS was not employed for this project.

1. Mass calibration and resolution checks for both low and high mass isotopes produced a peak width of approximately 0.75 amu at 10% peak height.

1. Tuning solution was analyzed a minimum of three times, and the relative standard deviation (RSD) of absolute signals for all analytes was less than 5%.

- A. Internal Standardization
- 1. A minimum of three internal standards were present in all standards and blanks at identical levels.
- V. Yes\_X\_ No\_\_\_\_N/A\_\_\_\_

Internal standards are not required for Method 6010D. The laboratory has used yttrium and has provided a recovery summary.

<ol> <li>The intensity of each internal standard was within the required control limits of 60.0 – 130.0%.</li> <li>Yes X No</li> </ol>
III. CRDL STANDARDS
The 2 × CRDL standards were analyzed as required in the SOW.  Yes X_NoN/A
IV. BLANKS
The highest blank associated with any particular analyte is used for the qualification process and is the value entered after the "B" blank descriptor.  A. The initial calibration blanks (ICB) and continuing calibration blanks (CCB) were analyzed at the required frequency.  Yes X No N/A
B. The ICB and CCB results were within the required control limits.  Yes X No N/A  No qualifiers are required.
C. All analytes in the Leach Blank were less than the RL or less than 2 × instrument detection limit (MDL), whichever is lower.  YesNoN/AX Leach blanks were not applicable for these SDGs.
V. PREPARATION OR METHOD BLANKS
A. Preparation Blanks were prepared and analyzed at the required frequency.  Yes X No
B. All analytes in the Preparation Blank were less than the RL or less than the MDL, whichever is lower.  Yes X No  Detected results for lead were not reported in the method blanks.
C. Field, trip, decon rinse or other Field Blanks are contained and identified in the package.  Yes X No N/A  The following field blanks were identified in the data set.
SDG         FB           10522729         Rinsate-06232020           10523355         Rinsate 063020
D. The reported results for the Field Blanks are less than the RL or less than the IDL, whichever is lower.  Yes X No N/A

VI. A. ICP INTERF	ERENCE CHE	CK SAMPLE	
ICS consists of an A ar Yes X No N/	nd an AB solutio A	n.	the SOW or project contract. The
The laboratory analyze outlier data would not		neck samples in each run. As no eable.	other analytes are reported, any
B. The ICS percent required control limits Yes X No N/	of 80.0 – 120.0%	were reported for all required ICS %.	analytes and were within the
VI. B. INTERELEM			
		e included and complete for all po	ossible interferent analytes.
Yes X No N/	A		
		mple was analyzed for each diges	tion group and/or matrix or as
required in the SOW.			
Yes X No The samples used for N	AS/MSDs in this	s set are shown below.	
SDG	Matrix	MS/MSD Parent Sample	
10522971	Water	GP-35 (47-50)	
10523363	Water	GP-37 (15-18)	
10523518	Water	GP-37 (96-100)	
B. The Matrix Spike Yes X No N/ All MS/MSD recoveries	Â	ies were within the required contri	rol limits of 70.0 – 130.0%.
C. A Post Digestion	Spike was prepar	red and analyzed if required.	
YesNoN/		, ,	
D. The MS/MSD san	nples were client	t samples.	
Yes_X_No			
VIII. DUPLICATE	S		

B. The Matrix Duplicate (MD) relative percent differences (RPD) were within the required control limits (20% water, 35% soil) or the Reporting Limits (RL) were met if the duplicate values are less than  $5 \times RL$  (RL Rule). If either of the duplicate results is less than  $5 \times RL$ , the RPD is not used. The QC

A. Matrix (pre-digestion) Duplicate samples were analyzed at the required frequency.

The laboratory prepares and analyzes MS/MSD samples.

Yes X No

limit (± RL for water samples, 2 x RL soil) used is the difference between the original and the duplicate results.
Yes X No All MS/MSD RPD values were acceptable.
All MS/MSD RFD values were acceptable.
IX. LABORATORY CONTROL SAMPLE
A. Laboratory Control Samples (LCS) were analyzed at the required frequency. Yes_X_No
B. The LCS recoveries were within the required control limits of 75.0 – 125.0%. Yes X No
X. SERIAL DILUTION
A. Serial Dilutions were analyzed at the required frequency if the analyte concentrations were greater than $50 \times IDL$ .
YesNoN/AX_All sample results are ND.
B. The percent difference (% D) criteria of $\pm$ 10.0% were met. Yes No N/A X
XI. INSTRUMENT DETECTION LIMITS
A. The Instrument Detection Limits (IDL) met the Quarterly reporting requirements.
Yes X No N/A This was determined to be acceptable during the contractual process.
B. All sample results met the required detection limits (RL).  Yes X No N/A
XII. PREPARATION AND ANALYSIS LOGS
A. All samples were prepared or analyzed within the required holding times referenced in the SOW (time of sample receipt to preparation/distillation).  Yes X No
B. All samples were analyzed within the 40 CFR 136 (Clean Water Act) or method recommended holding times (time of sample collection to date of analysis).
Yes X No All holding times were met for the lead analyses.
C. Chain of Custody (COC)
1. Chain of Custody (COC) forms were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.
Yes X No Note that field dynlicate complex do not include times in order to maintain their "blind" status to the
Note that field duplicate samples do not include times in order to maintain their "blind" status to the laboratory. Dates and times should be recorded in the project field notebooks.

Cooler temperatures were within acceptance limits. For soil samples there is no additional preservation required for lead. For water samples, the COCS request lab filtration for dissolved lead. Although the lab filtration is not documented in the report, dissolved lead is reported so the validator must assume the filtration was conducted in the lab.					
XIII. FIELD	QC				
A. Field QC sa	mples (duplicates, S)	RMs) were identified.			
Yes X No The client has ide	 entified field duplica	te sets as shown in the table below:			
SDG	Field Duplicate ID	Sample ID			
10523355	Dup 063020	GP-36 (38-40)			
10523363	Dup 062920	GP-37 (23-26)			
B. Field duplicates were within the QAPP limit of < 50% RPD for all samples. If values are less than 5 × RL, the water limit is ± RL.  Yes X No N/A  There are no outliers requiring qualification. If the RPD is >50%, the qualifier added is JFD#, where # is the RPD observed. As the RPD increases, the precision decreases.					
XIV. OVERAL	L ASSESSMENT O	OF THE CASE			
		requested method. Data are fully usable with consideration of the ere are no qualifiers in this set.			
Deliverables The following are noted for clarification: Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead, including 2 field duplicates and 2 field blanks. Hard copy data were not required and the full package was provided as pdf. Results are incorporated into the associated EDD.					
There are no Case Narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required					
This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.					
Chain of Custody	y and Sample Preserv	<u>vation</u>			
Chain of Custody	y documents met crit	eria.			
required for lead lab filtration is no	. For water samples,	eptance limits. For soil samples there is no additional preservation, the COCS request lab filtration for dissolved lead. Although the report, dissolved lead is reported so the validator must assume the			

2. Samples were received at the required temperature and preservation.

Yes X No\_\_\_\_

Field Blanks
The following field blanks were identified in the data set.

SDG	FB
10522729	Rinsate-06232020
10523355	Rinsate 063020

The field blanks had no detections of lead.

# Matrix Spikes and Matrix Duplicates

The samples used for MS/MSDs in this set are shown below.

SDG	Matrix	MS/MSD Parent Sample
10522971	Water	GP-35 (47-50)
10523363	Water	GP-37 (15-18)
10523518	Water	GP-37 (96-100)

# Serial Dilution

All samples are non-detects for lead. Serial dilutions are not required.

## Field Duplicates

The client has identified field duplicate sets as shown in the table below:

SDG	Field Duplicate ID	Sample ID
10523355	Dup 063020	GP-36 (38-40)
10523363	Dup 062920	GP-37 (23-26)

Field duplicates met criteria.

## SUMMARY TABLE OF QUALIFIED DATA

CLIENT ID	LAB ID	ANALYTE	RESULT	UNITS	MDL	DSA	EPA
NO QUALIFIERS ARE APPLIED							

D	IA	IN	THE	SH	ORT	æ	ASSC	OCLA	ATES.	INC.
_				$\sim$	~					

1978 S. Garrison St. #114 Lakewood CO 80227 303:271-9642 dsa7cbc@eazygagc.com

## <u>DATA VALIDATION FORM FOR INORGANICS</u> METALS BY ICP and ICP/MS SW-846 METHODs 6010D and 6020B

SDGs: 10523520, 10523658, 10524056, 10524484, 10524485, 10524981 PROJECT: Water Gremlin, MN; Project # 2606-0017 Water Gremlin, Wenck Environmental Consulting and Engineering LABORATORY: Pace Analytical, Minneapolis, MN SAMPLE MATRIX: Water and soil SAMPLING DATE: July, 2020 NO. OF SAMPLES: 32 Samples for dissolved lead in water, including 2 field duplicates and 3 field blanks; 7 samples for total lead in solids. ANALYSES REQUESTED: SW-846 Method 6010D - Lead only SAMPLE NUMBERS: See Attached List DATA REVIEWER: John Huntington QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: DLS 9/4/2020 Yes\_\_\_\_No\_\_X\_\_ Telephone Logs included Yes No X Contractual Violations

Comments:

I.	DELI	<b>VER</b>	<b>ABL</b>	ÆS

All deliverables were present as specified in the Statement of Work (SOW) or project contract.
Yes X No The following are noted for clarification:
Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead in water, including 2 field duplicates and 3 field blanks. 7 samples for total lead in solids. Hard copy data were not required, and the full package was provided as pdf. Results are incorporated into the associated EDD.
There are no Case Narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required
This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.
II. CALIBRATION AND STANDARDIZATION – ICP/MS
A. Initial and Continuing Calibration
1. All initial instrument calibrations were performed as defined in the SOW or project contract. All correlation coefficients for the 3 point curves were $> 0.995$ .
Yes X No
2. The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were analyzed at the required frequency.  Yes X No
3. The ICV and CCV standard percent recovery results were within the required control limits of 90.0 – 110.0%.  Yes X No
B. ICP/MS Tune and Calibration
1. Mass calibration and resolution checks for both low and high mass isotopes are within 0.1 amu of the true value.
II. Yes No N/A X ICPMS was not employed for this project.
ICPMS was not employed for this project.
1. Mass calibration and resolution checks for both low and high mass isotopes produced a peak width of approximately 0.75 amu at 10% peak height.
III. YesNoN/AX
1. Tuning solution was analyzed a minimum of three times, and the relative standard deviation (RSD) of absolute signals for all analytes was less than 5%.
IV. YesNoN/AX
A. Internal Standardization
<ol> <li>A minimum of three internal standards were present in all standards and blanks at identical levels.</li> </ol>
V. Yes_X NoN/A
Internal standards are not required for Method 6010D. The laboratory has used yttrium and has provided a recovery summary.

1. The intensity of each internal standard was within the required control limits of $60.0 - 130.0\%$ . Yes $X$ No
III. CRDL STANDARDS
The 2 $\times$ CRDL standards were analyzed as required in the SOW. Yes $X$ _No_N/A
IV. BLANKS
The highest blank associated with any particular analyte is used for the qualification process and is the value entered after the "B" blank descriptor.  A. The initial calibration blanks (ICB) and continuing calibration blanks (CCB) were analyzed at the required frequency.  Yes X No N/A
B. The ICB and CCB results were within the required control limits.  Yes X No N/A  No qualifiers are required.
C. All analytes in the Leach Blank were less than the RL or less than 2 × instrument detection limit (MDL), whichever is lower.  YesNoN/AX Leach blanks were not applicable for these SDGs.
V. PREPARATION OR METHOD BLANKS
A. Preparation Blanks were prepared and analyzed at the required frequency.  Yes X No
B. All analytes in the Preparation Blank were less than the RL or less than the MDL, whichever is lower.  Yes X No Detected results for lead were not reported in the method blanks.
C. Field, trip, decon rinse or other Field Blanks are contained and identified in the package.  Yes X No N/A  The following field blanks were identified in the data set.
SDG
D. The reported results for the Field Blanks are less than the RL or less than the IDL, whichever is lower.  Yes X No N/A

VI.	A.	ICP INTERFERENCE CHECK SAMPLE

A. The Interference Chec ICS consists of an A and a Yes X No N/A		, ,	he SOW or project contract. The
		eck samples in each run. As no oable.	other analytes are reported, any
B. The ICS percent recorrequired control limits of 8 Yes X No N/A	0.0 - 120.0%	vere reported for all required ICS	analytes and were within the
VI. B. INTERELEMENTHE Interelement Correction  Yes X No N/A	on Factors are	CTION FACTORS included and complete for all po	ossible interferent analytes.
VII. MATRIX SPIKE			
required in the SOW.  Yes X No The samples used for MS/N	MSDs in this	set are shown below. Other MS ciated with different SDGs.	
SDG	Matrix	MS/MSD Parent Sample	
10524056	Water	GP-49 (10-12)	
10524484	Water	GP-50 (45-47)	
10524485	Solid	SED-26	
10524485	Water	SW-23	
10524981	Water	SW-21	
Yes X No N/A All MS/MSD recoveries w	ere within cr	es were within the required contriteria.  ed and analyzed if required.	ol limits of 70.0 – 130.0%.
D. The MS/MSD sample Yes X No	s were client	samples.	
VIII. DUPLICATES	Devil at a		· 1 C
A. Matrix (pre-digestion) Yes X No The laboratory prepares an	•	amples were analyzed at the requal S/MSD samples.	ired frequency.

B. The Matrix Duplicate (MD) relative percent differences (RPD) were within the required control limits (20% water, 35% soil) or the Reporting Limits (RL) were met if the duplicate values are less than

$5 \times RL$ (RL Rule). If either of the duplicate results is less than $5 \times RL$ , the RPD is not used. The QC limit ( $\pm RL$ for water samples, $2 \times RL$ soil) used is the difference between the original and the duplicate results.
Yes_X_No All MS/MSD RPD values were acceptable.
IX. LABORATORY CONTROL SAMPLE
A. Laboratory Control Samples (LCS) were analyzed at the required frequency. Yes X No
B. The LCS recoveries were within the required control limits of 75.0 – 125.0%. Yes X No All LCS recoveries were within criteria.
X. SERIAL DILUTION
A. Serial Dilutions were analyzed at the required frequency if the analyte concentrations were greater than $50 \times IDL$ .
Yes X No N/A A number of serial dilutions were performed, some of which were high enough in concentration to be evaluated.
B. The percent difference (% D) criteria of $\pm$ 10.0% were met. Yes X No N/A
XI. INSTRUMENT DETECTION LIMITS
A. The Instrument Detection Limits (IDL) met the Quarterly reporting requirements.
Yes X No N/A This was determined to be acceptable during the contractual process.
B. All sample results met the required detection limits (RL).  Yes X No N/A
XII. PREPARATION AND ANALYSIS LOGS
A. All samples were prepared or analyzed within the required holding times referenced in the SOW (time of sample receipt to preparation/distillation).
Yes <u>X</u> No
B. All samples were analyzed within the 40 CFR 136 (Clean Water Act) or method recommended holding times (time of sample collection to date of analysis).
Yes X No All holding times were met for the lead analyses.
C. Chain of Custody (COC)
1. Chain of Custody (COC) forms were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.
Yes X No

Note that field duplicate samples do not include times in order to maintain their "blind" status to the laboratory. Dates and times should be recorded in the project field notebooks.

2. Samples were received at the required temperature and preservation.

Yes X No\_\_\_\_

Cooler temperatures were within acceptance limits. For soil samples there is no additional preservation required for lead. For water samples, the COCs request lab filtration for dissolved lead. Although the lab filtration is not documented in the report, dissolved lead is reported so the validator must assume the filtration was conducted in the lab.

## XIII. FIELD QC

A. Field QC samples (duplicates, SRMs) were identified.

Yes X (water) No X (soil)

The client has identified field duplicate sets as shown in the table below. There are no field duplicates in this set or the previous set to meet the overall project frequency of 1/20.

SDG	Field Duplicate ID	Sample ID	Matrix
10523520	DUP070120	GP-45 (37-40)	Water
10524484	DUP_070920	GP-50 (58-60)	Water
10524485	SW-DUP-070920	SW-22	Water

B. Field duplicates were within the QAPP limit of < 50% RPD for all samples. If values are less than  $5 \times RL$ , the water limit is  $\pm RL$ .

There are no outliers requiring qualification. If the RPD is >50%, the qualifier added is JFD#, where # is the RPD observed. As the RPD increases, the precision decreases.

## XIV. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable with consideration of the qualifiers that have been applied. There are no qualifiers in this set.

#### Deliverables

Data were submitted for the ICP analyses by SW-846 Methods 6010D for lead only. Data were submitted for the analyses of 32 Samples for dissolved lead in water, including 2 field duplicates and 3 field blanks. 7 samples for total lead in solids. Hard copy data were not required, and the full package was provided as pdf. Results are incorporated into the associated EDD.

There are no Case Narratives provided for any of the data packages. As this is a full raw data review, any corrective action would have been reported in the validation process. No further action is required

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

#### Chain of Custody and Sample Preservation

Cooler temperatures were within acceptance limits. For soil samples there is no additional preservation required for lead. For water samples, the COCS request lab filtration for dissolved lead. Although the

lab filtration is not documented in the report, dissolved lead is reported so the validator must assume the filtration was conducted in the lab.

#### Field Blanks

The following field blanks were identified in the data set.

SDG	FB
10523520	RINSATE-070120
10523520	RINSATE-070120-B
10524484	Risate-070920

No lead contamination was observed in field blanks.

## Matrix Spikes and Matrix Duplicates

The samples used for MS/MSDs in this set are shown below. Other MS/MSDs are present in the report but are not reviewed since they are associated with different SDGs.

SDG	Matrix	MS/MSD Parent Sample
10524056	Water	GP-49 (10-12)
10524484	Water	GP-50 (45-47)
10524485	Solid	SED-26
10524485	Water	SW-23
10524981	Water	SW-21

All MS/MSD recoveries were within criteria.

## Field Duplicates

The client has identified field duplicate sets as shown in the table below. There are no field duplicates in this set or the previous set to meet the overall project frequency of 1/20.

SDG	Field Duplicate ID	Sample ID	Matrix
10523520	DUP070120	GP-45 (37-40)	Water
10524484	DUP_070920	GP-50 (58-60)	Water
10524485	SW-DUP-070920	SW-22	Water

There are no outliers requiring qualification. If the RPD is >50%, the qualifier added is JFD#, where # is the RPD observed. As the RPD increases, the precision decreases.

#### SUMMARY TABLE OF QUALIFIED DATA

CLIENT ID	LAB ID	ANALYTE	RESULT	UNITS	MDL	DSA	EPA
NO QUALIFIERS ARE APPLIED							

DIANE SHORT & ASSOCIATES, INC.	
· · · · · · · · · · · · · · · · · · ·	1978 S. Garrison St. # 114
	Lakewood CO 80227
	303:271-9642
	dsa7cbc@eazyqaqc.com

DATA VALIDATION FORM FOR ORGANICS SDGs:10523363, 10523661, 10523518, 10522729, 10522971, 10523355 PROJECT: Water Gremlin, MN; Project # 2606-0017 Water Gremlin, Wenck Environmental Consulting and Engineering LABORATORY: Pace Analytical, Minneapolis, MN and Pace National, Mt. Juliet, TN SAMPLE MATRIX: Water and Solid SAMPLING DATE: June and July, 2020 NO. OF SAMPLES: 8 solid and 38 aqueous samples for 8260D which includes 2 aqueous field duplicates, 2 methanol solids trip blanks, 6 aqueous trip blanks, and 2 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 2 field duplicates and 2 rinsate blanks ANALYSES REQUESTED: SW-846 Method 8260D, 8270E-SIM SAMPLE NUMBERS: See Attached List DATA REVIEWER: John Huntington QA REVIEWER: Diane Short and Associates Inc. INITIALS/DATE: 8/24/2020 Yes\_\_\_\_No\_\_X\_ Telephone Logs included Yes\_\_\_No\_X\_ Contractual Violations

Comments:

I. DELIVERABLES
All deliverables were present as specified in the QAPP.
YesNo_X_
The following are noted for clarification: This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and 1 compound (1,4-dioxane) by method 8270E-SIM. Data were provided for 8 solid and 38 aqueous samples for 8260D which includes 2 aqueous field duplicates, 2 methanol solids trip blanks, 6 aqueous trip blanks, and 2 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 2 field duplicates and 2 rinsate blanks. Hard copy data were not required, and the full packages were provided as pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.
None of the main project reports include a Case Narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.
A Case Narrative is included in the Pace National data packages (VOA analysis). However, it is really not a Case Narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a Case Narrative. In addition, it is inaccurate in that it states that samples were all properly preserved and received at the proper temperature. This is not the case (see Section C) of this report.
Pace National was used for the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.
This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.
II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.  Yes X No
B. Holding Times
The required holding times were met for all analyses (time of sample receipt to time of analysis-VOA). Yes X_No
C. Chain of Custody (COC)
1. Chain of Custody (COC) forms were reviewed and all fields were complete, signatures were present and cross outs were clean and initialed.
Yes_X_No
Samples were originally sent to Pace Analytical in Minnesota. Samples for VOA analysis were subsequently sent to Pace National in Mt. Juliet, TN. COCs are present for both shipments.

Note that field duplicate samples do not include times in order to maintain their "blind" status to the laboratory. Dates and times should be recorded in the project field notebooks.

2. Samples were received at the required temperature and preservation.

Yes\_\_\_No\_X\_

## Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements.

## <u>рН:</u>

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within 7 days of the collection dates. Any deviations from this are listed below.

10522729: A note on the COC indicated that for GP-34 (97-100), there were 3 vials that did not have HCl added due to a strong reaction. The sample checklist shows that VOA sample to be out of compliance with preservation requirements. However, on the preparation log the pH check for that sample indicates that the pH was  $\leq 2$ .

10522971: GP-35 (14-17) was shown on the VOA prep log as having a pH of 7. The COC indicates that 3 vials did not have HCl added but did not indicate which ones. Since all other samples had a pH of <2, the assumption seems reasonable that this is the only sample impacted. The sample was run in less than 7 days from collection, so no qualifiers are required.

10523355: GP-36 (8-10), GP-36 (24-26), and GP-36 (53-57) are shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. Samples were analyzed within 7 days of collection, so no qualifiers are required.

10523363: GP-43 (30-33) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed within 7 days of collection, so no qualifiers are required.

10523518: GP-37 (65-59) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10523661: GP-48 (8-12) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed on the 9th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

#### III. INSTRUMENT CALIBRATION - GC/MS

#### A. Initial Calibration

1. The Relative Response Factor (RRF) and average RRF for all target compounds met the QAPP or method criteria. The current 2015 Validation Guidance requires a Response Factor (RF) of > 0.05 for all compounds. The method allows for lower RF (0.01) for poor responders if the detection limits are appropriately elevated to adjust for instrument sensitivity. The method criteria will be applied.

Yes X No N/A
Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full
8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by
the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30%
(with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation
coefficient, r, of $> 0.99$ is also acceptable for compounds not meeting a % RSD of $< 20\%$ .
1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and
calibration checks is very low. The response of this analyte is known to be low due to its high water
solubility and consequential poor purging behavior. The laboratory has calibrated using higher levels for
this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the
LCS. Therefore, it is qualified as JC# instead of rejected for low response. The following results have

been qualified. The professional opinion of the validator is that there is not a significant low bias, despite

Client ID MDL DSA Lab ID Analyte Result Units **EPA** 1,4-Dioxane (p-10523363006 JC0.0025 GP-38 (3-4) ND 2.37 UJmg/kg Dioxane) 1,4-Dioxane (p-10523363008 JC0.0025 Soil Trip Blanks ND mg/kg 1.90 UJ-Dioxane) 1,4-Dioxane (p-GP-39 (3-4) 10523363009 ND mg/kg 2.06 JC0.0025 UJ-Dioxane) 1,4-Dioxane (p-GP-40 (3-4) 10523363010 ND mg/kg 2.01 JC0.0025 UJ-Dioxane) 1,4-Dioxane (p-GP-41 (3-4) 10523363011 ND mg/kg 2.09 JC0.0025 UJ-Dioxane) 1,4-Dioxane (p-GP-42 (3-4) 10523363012 ND mg/kg 2.11 JC0.0025 UJ-Dioxane)

ND

ND

mg/kg

mg/kg

2.60

1.90

JC0.0025

JC0.0025

UJ-

UJ-

1,4-Dioxane (p-

Dioxane)
1,4-Dioxane (p-

Dioxane)

Yes X No N/A

The laboratory runs a 9-point curve and uses a minimum of 5 contiguous points to produce the calibration curves. For vinyl chloride, the laboratory has used the lowest calibration point of 0.2 ug/L as the reporting limit. Where the %RSD exceeds 15%, the laboratory has used a nonlinear regression for quantification. The r2 values associated with these are >0.999. These practices are within SW-846 guidance.

2. The 12 hour system Performance Check was performed as required in SW-846.

Yes X No N/A

B. Continuing Calibration

1. The RRF 50 standard was analyzed at the required frequency, and the QC criteria were met.

Yes X No N/A

Client compounds meet the criteria.

2. The percent difference (% D) criterion of ± 25.0% for each target compound (with an allowance of 40% for the poor responders per the current validation guidance) was met.

Yes No X N/A

the qualifiers.

GP-36 (3-5)

Trip Blank

10523355001

10523355011

Method 8260D: There are several high responses for tetrachloroethene and trichloroethene. All but one of these are associated with non-detected results in samples and require no qualifiers. One of them, however, required a qualification for trichloroethene as shown below.

Method 8270E-SIM: Continuing calibrations are all in control.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-36 (13-17)	10523355004	Trichloroethene	1.3	ug/L	0.19	JC29	J+

#### IV. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB performance check was injected once at the beginning of each 12-hour period, and relative
abundance criteria for the ions were met.
Yes <u>X</u> NoN/A
All suggested BFB criteria were met for method 8260D. Note that these are somewhat different than
previous criteria. In the raw data the lab has comparisons with a previous set of criteria, and some of
these are out of those limits. However, the BFB report form in the reports show the 8260D criteria, and
the tunes are in control per those criteria. This difference in criteria shown in different parts of the report
should be addressed in the Case Narratives to avoid confusion.

DFTPP was run and passed criteria for Method 8270E-SIM, 1,4-dioxane. However, for SIM this tune check is not required.

#### V. INTERNAL STANDARDS

The Internal Standard (IS) area percent (Area %) recoveries were within the required control limits of -50.0 to + 100.0% of the daily calibration standard. The Retention Times were within the required windows.

Yes No X N/A

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard. Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

Client ID	Lab ID	Analyte		Units	MDL	DSA	EPA
GP-34 (75-78)	10522729002	1,4-Dioxane (SIM)	0.67	ug/L	0.12	JS32I42	J-
Rinsate- 06232020	10522729003	1,4-Dioxane (SIM)	2.1	ug/L	0.086	JS43i192	J-
GP-34 (97-100)	10522729004	1,4-Dioxane (SIM)	28.5	ug/L	0.12	JS34I42	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-48 (8-12)	10523661001	1,4-Dioxane (SIM)	0.85	ug/L	0.14	JS36I37	J-
GP-48 (25-27)	10523661002	1,4-Dioxane (SIM)	0.71	ug/L	0.11	JS45I48	J-
GP-37 (65-69)	10523518001	1,4-Dioxane (SIM)	2.8	ug/L	0.090	JS34I37	J-
GP-37 (96-100)	10523518003	1,4-Dioxane (SIM)	1.1	ug/L	0.090	JS38I41	J-
GP-37 (15-18)	10523363001	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS43I48	J-
GP-37 (23-26)	10523363002	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS40I46	J-
GP-37 (31-34)	10523363003	1,4-Dioxane (SIM)	0.94	ug/L	0.086	JS37I42	J-
Dup 062920	10523363004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-37 (38-40)	10523363005	1,4-Dioxane (SIM)	3	ug/L	0.12	JS40I47	J-
GP-43 (6-9)	10523363013	1,4-Dioxane (SIM)	ND	ug/L	0.10	JS32I38	J-
GP-43 (14-17)	10523363014	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS42I49	J-
GP-43 (22-25)	10523363015	1,4-Dioxane (SIM)	0.32	ug/L	0.11	JS42I48	J-
GP-43 (30-33)	10523363016	1,4-Dioxane (SIM)	0.36	ug/L	0.10	JS35I43	J-
GP-43 (38-40)	10523363017	1,4-Dioxane (SIM)	0.37	ug/L	0.086	JS36I43	J-
GP-36 (8-10)	10523355002	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS39I44	J-
Rinsate 063020	10523355003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I42	J-
GP-36 (13-17)	10523355004	1,4-Dioxane (SIM)	1	ug/L	0.090	JS22I13	J-
GP-36 (24-26)	10523355005	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS36I41	J-
GP-36 (38-40)	10523355006	1,4-Dioxane (SIM)	3.0	ug/L	0.086	JS36I42	J-
GP-36 (53-57)	10523355007	1,4-Dioxane (SIM)	0	ug/L	0.10	JS39I46	J-
Dup 063020	10523355008	1,4-Dioxane (SIM)	3	ug/L	0.17	JS28I32	J-
GP-36 (68-70)	10523355009	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I42	J-
GP-35 (14-17)	10522971001	1,4-Dioxane (SIM)	0.46	ug/L	0.11	JS22I25	J-
GP-35 (68-72)	10522971003	1,4-Dioxane (SIM)	0.32	ug/L	0.086	JS40I44	J-
GP-35 (88-90)	10522971004	1,4-Dioxane (SIM)	ND	ug/L	0.31	JS37I42	J-

VI. **SURROGATE STANDARDS**A. Surrogate standard spikes were prepared and analyzed with every sample.

Yes	X	No	

B. The recovery limits were within the required control limits of 50.0 - 130.0% as defined in the QAPP. Yes No X

All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-34 (47-50)	10522729001	1,4-Dioxane (SIM)	0.69	ug/L	0.095	JS42	J-
GP-34 (75-78)	10522729002	1,4-Dioxane (SIM)	0.67	ug/L	0.12	JS32I42	J-
Rinsate- 06232020	10522729003	1,4-Dioxane (SIM)	2.1	ug/L	0.086	JS43i192	J-
GP-34 (97-100)	10522729004	1,4-Dioxane (SIM)	28.5	ug/L	0.12	JS34I42	J-
GP-48 (8-12)	10523661001	1,4-Dioxane (SIM)	0.85	ug/L	0.14	JS36I37	J-
GP-48 (25-27)	10523661002	1,4-Dioxane (SIM)	0.71	ug/L	0.11	JS45I48	J-
GP-48 (31-34)	10523661003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS46	J-
GP-37 (65-69)	10523518001	1,4-Dioxane (SIM)	2.8	ug/L	0.090	JS34I37	J-
GP-37 (96-100)	10523518003	1,4-Dioxane (SIM)	1.1	ug/L	0.090	JS38I41	J-
GP-37 (15-18)	10523363001	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS43I48	J-
GP-37 (23-26)	10523363002	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS40I46	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-37 (31-34)	10523363003	1,4-Dioxane (SIM)	0.94	ug/L	0.086	JS37I42	J-
Dup 062920	10523363004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-37 (38-40)	10523363005	1,4-Dioxane (SIM)	3	ug/L	0.12	JS40I47	J-
GP-43 (6-9)	10523363013	1,4-Dioxane (SIM)	ND	ug/L	0.10	JS32I38	J-
GP-43 (14-17)	10523363014	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS42I49	J-
GP-43 (22-25)	10523363015	1,4-Dioxane (SIM)	0.32	ug/L	0.11	JS42I48	J-
GP-43 (30-33)	10523363016	1,4-Dioxane (SIM)	0.36	ug/L	0.10	JS35I43	J-
GP-43 (38-40)	10523363017	1,4-Dioxane (SIM)	0.37	ug/L	0.086	JS36I43	J-
GP-36 (8-10)	10523355002	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS39I44	J-
Rinsate 063020	10523355003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I42	J-
GP-36 (13-17)	10523355004	1,4-Dioxane (SIM)	1	ug/L	0.090	JS22I13	J-
GP-36 (24-26)	10523355005	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS36I41	J-
GP-36 (38-40)	10523355006	1,4-Dioxane (SIM)	3.0	ug/L	0.086	JS36I42	J-
GP-36 (53-57)	10523355007	1,4-Dioxane (SIM)	0	ug/L	0.10	JS39I46	J-
Dup 063020	10523355008	1,4-Dioxane (SIM)	3	ug/L	0.17	JS28I32	J-
GP-36 (68-70)	10523355009	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I42	J-
GP-35 (14-17)	10522971001	1,4-Dioxane (SIM)	0.46	ug/L	0.11	JS22I25	J-
GP-35 (47-50)	10522971002	1,4-Dioxane (SIM)	ND	ug/L	0.090	JS43	J-
GP-35 (68-72)	10522971003	1,4-Dioxane (SIM)	0.32	ug/L	0.086	JS40I44	J-
GP-35 (88-90)	10522971004	1,4-Dioxane (SIM)	ND	ug/L	0.31	JS37I42	J-

## VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples were prepared and analyzed per every 20 samples for every matrix.

Yes No X

Method 8260D: There are no MS/MSDs provided for method 8260D. There are MS/MSDS present, but they are for different SDGs and are not evaluated

There are two MS/MSDS provided for 1,4-Dioxane by 8270E SIM.

SDG	MS/MSD sample
-----	---------------

10522971	GP-35 (47-50)
10523363	GP-37 (96-100)

R	The Matrix St	nike percent	recoveries wer	e within the	required con	trol limits
J.	THE Mania S	pike percent	ICCOVCITCS WCI	c within the	required con	uoi iiiiiis

Yes No X N/A

The MSD for GP-35(47-50) is recovered high at 155%. The spiked sample contains no detectable 1,4-dioxane so this possible high bias does not require qualification. Detected data would be qualified JMS#, where # is the value of the %R. In this case there are no qualifiers required.

C. The Matrix Spike Duplicate relative percent differences (RPD) were within the required control limit of less than 30.0% as defined in the QAPP.

Yes X No N/A See note above.

#### VIII. LABORATORY CONTROL SAMPLE

A. Laboratory Control Samples (LCS) were prepared and analyzed at the required frequency.

Yes X No

B. The LCS percent recoveries were within the required control limits of 60.0 - 130.0% (or 40 LCL for poor responders) as defined in the QAPP.

Yes No X

Several percent recoveries were outside the project QC limits of 60-130% for tetrachloroethene, but all associated samples are non-detects. No qualifiers are required for this apparent high bias.

#### IX. BLANKS

A. Method Blanks were prepared and analyzed at the required frequency.

Yes X No

B. No blank contamination was found in the Method Blank.

Yes X No

There are no client compounds reported as detected in the method blanks.

C. If Equipment Rinse Blanks, Trip Blanks, or other Field Blanks were identified, no blank contamination was found.

Yes X No N/A

No contamination was detected in field blanks.

#### X. FIELD QC

If Field duplicates or Performance Check Compounds were identified, the results were within the guidance limit of < 50% RPD or the % recovery criteria for the project. If values are less than  $5 \times RL$ , the water limit is  $\pm 4 \times RL$ .

Yes X No N/A

The client has identified field duplicate sets as shown in the table below:

	Field Duplicate	
SDG	ID	Sample ID
10523355	Dup 063020	GP-36 (38-40)

	Field Duplicate	
SDG	ID	Sample ID
10523363	Dup 062920	GP-37 (23-26)

Field duplicate criteria were met in all cases.

ΧI	SYSTEN	A PER	FORMA	NCE

	tructed ion chromatograms (RIC), chromatograms, tunes and general system performance for all instruments and analytical systems.
For 8260D and	N/A
	sted EQLs for the sample matrices were metN/A
XII. TCL CC A. The identifall detected com	ication was accurate, and all retention times, library spectra and RIC were evaluated for
	N/A
•	on of representative compounds was checked to determine the accuracy of the calculation each internal standard quantitation set. $N/A$

#### XIII. OVERALL ASSESSMENT OF THE CASE

The laboratory has complied with the requested method. Data are fully usable and no qualifiers are added.

## **Deliverables**

The following are noted for clarification:

This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and 1 compound (1,4-dioxane) by method 8270E-SIM. Data were provided for 8 solid and 38 aqueous samples for 8260D which includes 2 aqueous field duplicates, 2 methanol solids trip blanks, 6 aqueous trip blanks, and 2 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 2 field duplicates and 2 rinsate blanks. Hard copy data were not required, and the full packages were provided as pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.

None of the main project reports include a Case Narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.

A Case Narrative is included in the Pace National data packages (VOA analysis). However, it is really not a Case Narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a Case Narrative. In addition, it is inaccurate in that it states that

samples were all properly preserved and received at the proper temperature. This is not the case (see Section C) of this report.

Pace National was used for the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

#### Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements.

#### <u>pH:</u>

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within 7 days of the collection dates. Any deviations from this are listed below.

10522729: A note on the COC indicated that for GP-34 (97-100), there were 3 vials that did not have HCl added due to a strong reaction. The sample checklist shows that VOA sample to be out of compliance with preservation requirements. However, on the preparation log the pH check for that sample indicates that the pH was  $\leq 2$ .

10522971: GP-35 (14-17) was shown on the VOA prep log as having a pH of 7. The COC indicates that 3 vials did not have HCl added but did not indicate which ones. Since all other samples had a pH of <2, the assumption seems reasonable that this is the only sample impacted. The sample was run in less than 7 days from collection, so no qualifiers are required.

10523355: GP-36 (8-10), GP-36 (24-26), and GP-36 (53-57) are shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. Samples were analyzed within 7 days of collection, so no qualifiers are required.

10523363: GP-43 (30-33) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed within 7 days of collection, so no qualifiers are required.

10523518: GP-37 (65-59) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples impacted were not indicated. The sample was analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10523661: GP-48 (8-12) was shown on the VOA prep log as having a pH of 7. VOAs were shown on the sample receiving checklist as being out of compliance with sampling requirements, but specific samples

impacted were not indicated. The sample was analyzed on the 9th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

#### **Initial Calibration**

Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full 8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30% (with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of > 0.99 is also acceptable for compounds not meeting a % RSD of < 20%.

1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and calibration checks is very low. The response of this analyte is known to be low due to its high water solubility and consequential poor purging behavior. The laboratory has calibrated using higher levels for this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the LCS. Therefore, it is qualified as JC# instead of rejected for low response. Results tabulated within this report have been qualified. The professional opinion of the validator is that there is not a significant low bias, despite the qualifiers.

## **Continuing Calibration**

Method 8260D: There are several high responses for tetrachloroethene and trichloroethene. All but one of these are associated with non-detected results in samples and require no qualifiers. One of them, however, required a qualification for trichloroethene as shown below.

Method 8270E-SIM: Continuing calibrations are all in control.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-36 (13-17)	10523355004	Trichloroethene	1.3	ug/L	0.19	JC29	J+

#### **Internal Standards**

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard. Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

#### Surrogates

All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The

QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits anyway. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

#### Matrix Spikes and MS Duplicates

Method 8260D: There are no MS/MSDs provided for method 8260D. There are MS/MSDS present, but they are for different SDGs and are not evaluated

The MSD for GP-35(47-50) is recovered high at 155%. The spiked sample contains no detectable 1,4-dioxane so this possible high bias does not require qualification. Detected data would be qualified JMS#, where # is the value of the %R. In this case there are no qualifiers required.

## **Laboratory Control Samples**

Several percent recoveries were outside the project QC limits of 60-130% for tetrachloroethene, but all associated samples are non-detects. No qualifiers are required for this apparent high bias.

#### Equipment Rinse Blank, Trip Blanks or other Field Blanks

All field blanks are acceptable.

## Field Duplicates

The client has identified field duplicate sets as shown in the table below:

	Field Duplicate	
SDG	ID	Sample ID
10523355	Dup 063020	GP-36 (38-40)
10523363	Dup 062920	GP-37 (23-26)

Field duplicate criteria were met in all cases.

# SUMMARY TABLE OF QUALIFIED DATA

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-38 (3-4)	10523363006	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.37	JC0.0025	J-
Soil Trip Blanks	10523363008	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.9	JC0.0025	J-
GP-39 (3-4)	10523363009	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.06	JC0.0025	J-
GP-40 (3-4)	10523363010	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.01	JC0.0025	J-
GP-41 (3-4)	10523363011	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.09	JC0.0025	J-
GP-42 (3-4)	10523363012	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.11	JC0.0025	J-
GP-36 (3-5)	10523355001	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.6	JC0.0025	J-
Trip Blank	10523355011	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.9	JC0.0025	J-
GP-34 (47-50)	10522729001	1,4-Dioxane (SIM)	0.69	ug/L	0.095	JS42	J-
GP-34 (75-78)	10522729002	1,4-Dioxane (SIM)	0.67	ug/L	0.12	JS32I42	J-
Rinsate- 06232020	10522729003	1,4-Dioxane (SIM)	2.1	ug/L	0.086	JS43i192	J-
GP-34 (97-100)	10522729004	1,4-Dioxane (SIM)	28.5	ug/L	0.12	JS34I42	J-
GP-48 (8-12)	10523661001	1,4-Dioxane (SIM)	0.85	ug/L	0.14	JS36I37	J-
GP-48 (25-27)	10523661002	1,4-Dioxane (SIM)	0.71	ug/L	0.11	JS45I48	J-
GP-48 (31-34)	10523661003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS46	J-
GP-37 (65-69)	10523518001	1,4-Dioxane (SIM)	2.8	ug/L	0.09	JS34I37	J-
GP-37 (96-100)	10523518003	1,4-Dioxane (SIM)	1.1	ug/L	0.09	JS38I41	J-
GP-37 (15-18)	10523363001	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS43I48	J-
GP-37 (23-26)	10523363002	1,4-Dioxane (SIM)	ND	ug/L	0.11	JS40I46	J-
GP-37 (31-34)	10523363003	1,4-Dioxane (SIM)	0.94	ug/L	0.086	JS37I42	J-
Dup 062920	10523363004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-37 (38-40)	10523363005	1,4-Dioxane (SIM)	3	ug/L	0.12	JS40I47	J-
GP-43 (6-9)	10523363013	1,4-Dioxane (SIM)	ND	ug/L	0.1	JS32I38	J-
GP-43 (14-17)	10523363014	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS42I49	J-
GP-43 (22-25)	10523363015	1,4-Dioxane (SIM)	0.32	ug/L	0.11	JS42I48	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-43 (30-33)	10523363016	1,4-Dioxane (SIM)	0.36	ug/L	0.1	JS35I43	J-
GP-43 (38-40)	10523363017	1,4-Dioxane (SIM)	0.37	ug/L	0.086	JS36I43	J-
GP-36 (8-10)	10523355002	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS39I44	J-
Rinsate 063020	10523355003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I42	J-
GP-36 (13-17)	10523355004	1,4-Dioxane (SIM)	1	ug/L	0.09	JS22I13	J-
GP-36 (24-26)	10523355005	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS36I41	J-
GP-36 (38-40)	10523355006	1,4-Dioxane (SIM)	3	ug/L	0.086	JS36I42	J-
GP-36 (53-57)	10523355007	1,4-Dioxane (SIM)	0	ug/L	0.1	JS39I46	J-
Dup 063020	10523355008	1,4-Dioxane (SIM)	3	ug/L	0.17	JS28I32	J-
GP-36 (68-70)	10523355009	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I42	J-
GP-35 (14-17)	10522971001	1,4-Dioxane (SIM)	0.46	ug/L	0.11	JS22I25	J-
GP-35 (47-50)	10522971002	1,4-Dioxane (SIM)	ND	ug/L	0.09	JS43	J-
GP-35 (68-72)	10522971003	1,4-Dioxane (SIM)	0.32	ug/L	0.086	JS40I44	J-
GP-35 (88-90)	10522971004	1,4-Dioxane (SIM)	ND	ug/L	0.31	JS37I42	J-
GP-37 (96-100)	10523518003	1,4-Dioxane (SIM)	1.1	ug/L	0.090	JS38I41	J-
GP-36 (13-17)	10523355004	Trichloroethene	1.3	ug/L	0.19	JC29	J+

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DATA VALIDATION FORM FOR ORGANICS SDGs: 10523520, 10523658, 10523948, 10524056, 10524484, 10524485, 10524981 PROJECT: Water Gremlin, MN; Project # 2606-0017 Water Gremlin, Wenck Environmental Consulting and Engineering LABORATORY: Pace Analytical, Minneapolis, MN and Pace National, Mt. Juliet, TN SAMPLE MATRIX: Water and Solid SAMPLING DATE: July, 2020 NO. OF SAMPLES: 18 solid and 31 aqueous samples for 8260D which includes 2 aqueous field duplicates, 4 methanol solids trip blanks, 4 aqueous trip blanks, and 4 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 3 field duplicates and 4 rinsate blanks ANALYSES REQUESTED: SW-846 Method 8260D, 8270E-SIM SAMPLE NUMBERS: See Attached List DATA REVIEWER: John Huntington QA REVIEWER: <u>Diane Short and Associates Inc.</u> INITIALS/DATE: <u>DLS</u> 9/4/2020 Yes\_\_\_No\_X\_ Telephone Logs included Yes\_\_\_No\_X\_ Contractual Violations Comments:

I. DELIVERABLES
All deliverables were present as specified in the QAPP.
YesNoX_ The following are noted for clarification: This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and 1
compound (1,4-dioxane) by method 8270E-SIM. Data were provided for 18 solid and 31 aqueous samples for 8260D which includes 2 aqueous field duplicates, 4 methanol solids trip blanks, 4 aqueous trip blanks, and 4 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 3 field duplicates and 4 rinsate blanks. Hard copy data were not required, and the full packages were provided as pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.
Note that in SDG 10524485, only 1,4-dioxane is reported in the solids VOA analysis. Volatiles were not requested on the COC, only 1,4-dioxane. The lab performed this analysis in soils by method 8260D.
None of the main project reports include a Case Narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.
A Case Narrative is included in the Pace National data packages (VOA analysis). However, it is really not a Case Narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a Case Narrative.
Pace National was used for some of the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.
This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.
II. ANALYTICAL REPORT FORMS
A. The Analytical Report or Data Sheets are present and complete for all requested analyses.  Yes X No
B. Holding Times
The required holding times were met for all analyses (time of sample receipt to time of analysis-VOA).  YesNoX
One trip blank for 8260 in SDG 10523520 was analyzed after 16.6 days from the sample date. Since trip blanks are prepared in the laboratory, and consist of laboratory water, the holding time is not as meaningful as it is for field samples as no biodegradation is expected and the sample is kept refrigerated in some manner for the majority of the time. No qualifiers are added.
C. Chain of Custody (COC)
1. Chain of Custody (COC) forms were reviewed, and all fields were complete, signatures were present and cross outs were clean and initialed.
Yes X No
Samples were originally sent to Pace Analytical in Minnesota. Some samples for VOA analysis were subsequently sent to Pace National in Mt. Juliet, TN. COCs are present for both shipments.

Note that field duplicate samples do not include times in order to maintain their "blind" status to the laboratory. Dates and times should be recorded in the project field notebooks.

Samples were received at the required temperature and preservation.
 Yes X No

#### Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements.

#### pH:

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within 7 days of the collection dates. Any deviations from this are listed below.

10523520: Several water samples were shown as having a pH of approximately 7. Samples were analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10524056: Several water samples were shown as having a pH of approximately 7. Samples were analyzed in 7 days or less. No qualifiers are required.

10524484: Several water samples were shown as having a pH of approximately 7. Samples were analyzed in 7 days or less. No qualifiers are required.

10523658: Several water samples were shown as having a pH of approximately 7. Samples were analyzed in 7 days or less. No qualifiers are required.

## III. INSTRUMENT CALIBRATION - GC/MS

#### A. Initial Calibration

1. The Relative Response Factor (RRF) and average RRF for all target compounds met the QAPP or method criteria. The current 2015 Validation Guidance requires a Response Factor (RF) of > 0.05 for all compounds. The method allows for lower RF (0.01) for poor responders if the detection limits are appropriately elevated to adjust for instrument sensitivity. The method criteria will be applied.

Yes No X N/A Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full 8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30% (with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of > 0.99 is also acceptable for compounds not meeting a % RSD of < 20%.

1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and calibration checks in the data from Pace National is very low. The response of this analyte is known to be low due to its high water solubility and consequential poor purging/extraction behavior. The laboratory has calibrated using higher levels for this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the LCS. Therefore, it is qualified as JC# instead of rejected for low

response. The following results have been qualified. The professional opinion of the validator is that there is not a significant low bias, despite the qualifiers.

In the data from Pace Minnesota, the laboratory also reports 1,4-dioxane from soils using Method 8260D. However, the laboratory uses 1,4-dioxane-d8 as the internal standard and the response factors are not low. No qualifiers are applied to these results for calibration response.

Qualifiers added due to calibration response are shown in the table below.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-47 (14-15)	10523658002	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.90	JC0.0025	J-
Trip Blank	10523658004	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.90	JC0.0025	J-
GP-45 (11-12')	10523520004	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.83	JC0.0025	J-
GP-46 (9-10)	10523520009	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.69	JC0.0025	J-
TRIP BLANK	10523520018	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.90	JC0.0025	J-

Yes X No N/A The laboratory runs a 9-point curve and uses a minimum of 5 contiguous points to produce the calibration curves. For vinyl chloride, the laboratory has used the lowest calibration point of 0.2 ug/L as the reporting limit. Where the %RSD exceeds 15%, the laboratory has used a nonlinear regression for quantification. The r2 values associated with these are >0.999. These practices are within SW-846 guidance.
2. The 12 hour system Performance Check was performed as required in SW-846.
Yes_X_NoN/A
B. Continuing Calibration
1. The RRF 50 standard was analyzed at the required frequency, and the QC criteria were met.
Yes_X_NoN/A
Client compounds meet the criteria.
2. The percent difference (% D) criterion of $\pm$ 25.0% for each target compound (with an allowance of 40% for the poor responders per the current validation guidance) was met.
Yes <u>X</u> NoN/A
IV. GC/MS INSTRUMENT PERFORMANCE CHECK The BFB performance check was injected once at the beginning of each 12-hour period, and relative abundance criteria for the ions were met.

Yes\_X\_No\_\_\_N/A\_\_\_\_

All suggested BFB criteria were met for method 8260D. Note that these are somewhat different than previous criteria. In the raw data the lab has comparisons with a previous set of criteria, and some of these are out of those limits. However, the BFB report form in the reports show the 8260D criteria, and the tunes are in control per those criteria. This difference in criteria shown in different parts of the report should be addressed in the Case Narratives to avoid confusion.

DFTPP was run and passed criteria for Method 8270E-SIM, 1,4-dioxane. However, for SIM this tune check is not required.

#### V. INTERNAL STANDARDS

The Internal Standard (IS) area percent (Area %) recoveries were within the required control limits of -50.0 to + 100.0% of the daily calibration standard. The Retention Times were within the required windows.

Yes No X N/A

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard. Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-44 (24-27)	10523520001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS46I49	J-
GP-44 (37-40)	10523520002	1,4-Dioxane (SIM)	3.2	ug/L	0.10	JS45I49	J-
GP-45 (11-14)	10523520005	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS37I41	J-
GP-45 (29-32)	10523520006	1,4-Dioxane (SIM)	ND	ug/L	0.10	JS41I45	J-
GP-46 (9-12)	10523520010	1,4-Dioxane (SIM)	0.94	ug/L	0.082	JS30I32	J-
GP-46 (17-20)	10523520013	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS41I45	J-
GP-46 (30-33)	10523520014	1,4-Dioxane (SIM)	1.4	ug/L	0.082	JS43I49	J-
RINSATE- 070120-B	10523520015	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS41I44	J-
GP-46 (38-40)	10523520016	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS40I44	J-
GP-47 (38-40)	10523658003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS44I46	J-
Rinsate 070720	10523948006	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS28I27	J-
GP-49 (10-12)	10524056001	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS45I42	J-
GP-49 (17-20)	10524056002	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-49 (45-47)	10524056003	1,4-Dioxane (SIM)	ND	ug/L	0.090	JS43I42	J-
GP-49 (57-59)	10524056004	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS4437	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-49 (73-75)	10524056005	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS38I33	J-
Risate-070920	10524484001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I38	J-
GP-50 (15-18)	10524484002	1,4-Dioxane (SIM)	ND	ug/L	0.13	JS35I34	J-
GP-50 (35-38)	10524484003	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS32I36	J-
GP-50 (45-47)	10524484004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS25I25	J-
GP-50 (58-60)	10524484005	1,4-Dioxane (SIM)	1.1	ug/L	0.078	JS44I43	J-
GP-50 (78-80)	10524484006	1,4-Dioxane (SIM)	2.4	ug/L	0.14	JS6I6	J-
DUP_070920	10524484007	1,4-Dioxane (SIM)	ND	ug/L	0.078	JS47I47	J-
SW-22	Water	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I38	J-
SW-DUP- 070920	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS30I30	J-
SW-23	Water	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS21I21	J-
SW-23	Water	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS37I40	J-
SW-24	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS27I27	J-

#### VI. SURROGATE STANDARDS

A.	Surr	ogate	standard spikes	were	prepared	and	analyzed	with	every	sample.
Yes	X	No								

B. The recovery limits were within the required control limits of 50.0 – 130.0% as defined in the QAPP. Yes\_\_\_\_No\_X\_

All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-44 (24-27)	10523520001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS46I49	J-
GP-44 (37-40)	10523520002	1,4-Dioxane (SIM)	3.2	ug/L	0.10	JS45I49	J-
GP-45 (11-14)	10523520005	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS37I41	J-
GP-45 (29-32)	10523520006	1,4-Dioxane (SIM)	ND	ug/L	0.10	JS41I45	J-
GP-46 (9-12)	10523520010	1,4-Dioxane (SIM)	0.94	ug/L	0.082	JS30I32	J-
DUP070120	10523520012	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS47	J-
GP-46 (17-20)	10523520013	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS41I45	J-
GP-46 (30-33)	10523520014	1,4-Dioxane (SIM)	1.4	ug/L	0.082	JS43I49	J-
RINSATE- 070120-B	10523520015	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS41I44	J-
GP-46 (38-40)	10523520016	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS40I44	J-
GP-47 (38-40)	10523658003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS44I46	J-
Rinsate 070720	10523948006	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS28I27	J-
GP-49 (10-12)	10524056001	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS45I42	J-
GP-49 (17-20)	10524056002	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-49 (45-47)	10524056003	1,4-Dioxane (SIM)	ND	ug/L	0.090	JS43I42	J-
GP-49 (57-59)	10524056004	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS4437	J-
GP-49 (73-75)	10524056005	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS38I33	J-
Risate-070920	10524484001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I38	J-
GP-50 (15-18)	10524484002	1,4-Dioxane (SIM)	ND	ug/L	0.13	JS35I34	J-
GP-50 (35-38)	10524484003	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS32I36	J-
GP-50 (45-47)	10524484004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS25I25	J-
GP-50 (58-60)	10524484005	1,4-Dioxane (SIM)	1.1	ug/L	0.078	JS44I43	J-
GP-50 (78-80)	10524484006	1,4-Dioxane (SIM)	2.4	ug/L	0.14	JS6I6	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
DUP_070920	10524484007	1,4-Dioxane (SIM)	ND	ug/L	0.078	JS47I47	J-
GP-50 (98-100)	10524484008	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS35	J-
SW-22	Water	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I38	J-
SW-DUP- 070920	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS30I30	J-
SW-23	Water	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS21I21	J-
SW-23	Water	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS37I40	J-
SW-24	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS27I27	J-

#### VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples were prepared and analyzed per every 20 samples for every matrix.

Yes	No	$\mathbf{v}$
Y es	No	X

Method 8260D: There is one MS/MSD for water and one MS/MSD for solids. A second MS/MSD is present for water, but it was conducted on a rinsate blank and is not representative of the site matrix. The frequency requirement of MS/MSDs is met for soils, but not for waters. In order to meet the Representativeness criteria for the PARCCs, the client is required to choose the MS/MSD sample to best represent the current event and designate it to the laboratory.

There are two MS/MSDS provided for 1,4-Dioxane by 8270E SIM. This meets the frequency requirements for this method.

There are other MS/MSDs present for both methods, but they are associated with other projects and are not evaluated.

SDG	Matrix	MS/MSD sample	Methods
10523948	3948 Solid SB-21 (3-5)		8260D
	Water	Rinsate 070720	8260D
10524484	Water	GP-50 (45-47)	8260D
	Water	GP-50 (45-47)	8270E-SIM
10524485	Solid	SED-26	8260D
10524485	Water	SW-23	8270E-SIM

В.	The Matrix Spike percent recoveries were within the required control limits.
Yes	<u>X</u> No N/A
Two	MS/MSD results are reported for the two 8270E results of sample SW-23. Both are in control.
	The Matrix Spike Duplicate relative percent differences (RPD) were within the required control limits than 30.0% as defined in the QAPP.
Yes	XNoN/A

VIII. LABORATORY CONTROL SAMPLE A. Laboratory Control Samples (LCS) were prepared and analyzed at the required frequency.
Yes_X_No
B. The LCS percent recoveries were within the required control limits of $60.0 - 130.0\%$ (or 40 LCL for poor responders) as defined in the QAPP.
Yes <u>X</u> No
IX. BLANKS  A. Method Blanks were prepared and analyzed at the required frequency.  Yes X No
B. No blank contamination was found in the Method Blank.
Yes <u>X</u> No
There are no client compounds reported as detected in the method blanks.
C. If Equipment Rinse Blanks, Trip Blanks, or other Field Blanks were identified, no blank

The following field blanks were identified in the data set. In addition, there were methanol trip blanks for

soil and aqueous trip blanks for water samples.													
SDG	FB												
10523520	RINSATE-070120												
10523520	RINSATE-070120-B												
10524484	Risate-070920												
10523948	Rinsate 070720												

N/A

contamination was found.

No contamination of client compounds was detected in field blanks.

### X. FIELD QC

If Field duplicates or Performance Check Compounds were identified, the results were within the guidance limit of < 50% RPD or the % recovery criteria for the project. If values are less than  $5 \times RL$ , the water limit is  $\pm 4 \times RL$ . Field duplicates meet the 1/20 overall event frequency.

Yes X (water) No X (soil) N/A

The client has identified field duplicate sets as shown in the table below. There are no field duplicates for the soils in this set or the previous set and the project frequency is not met.

SDG	Field Duplicate ID	Sample ID	Matrix
10523520	DUP070120	GP-45 (37-40)	Water
10524484	DUP_070920	GP-50 (58-60)	Water
10524485	SW-DUP-070920	SW-22	Water

Field duplicate criteria were met in all cases.

XI. <b>SYSTEM PERFORMANCE</b> A. The reconstructed ion chromatograms (RIC), chromatograms, tunes and general system performance were acceptable for all instruments and analytical systems.
Yes X No N/A For 8260D and 8270E-SIM, most of the chromatograms were relatively clean. The chromatographic quality was within acceptance limits.
B. The suggested EQLs for the sample matrices were met.
Yes X No N/A In SDG 10524485, sample SW-23 had 1,4-dioxane reported twice in the EDD and the report. One of the results shows a reporting limit of 0.25 ug/L and the other a limit of 0.5 ug/L. The lower RL result is 1.1 ug/L and the other is a non-detect. The laboratory has offered no explanation of the reason for the reanalysis or any comment about which result should be used (no Case Narrative). Qualifiers in the laboratory report, as well as the run log, indicates that an emulsion was present in the lower RL result analysis. The original run (that with the detected analyte) had low surrogate and internal standard recoveries, which may be the reason for the reanalysis given the presence of emulsions.
The run with detected analyte shows the expected masses for 1,4-dioxane. However, it is not possible to appropriately compare it to the reference because the reference spectrum shown appears to contain extraneous mass peaks. The reference should be updated to provide cleaner masses. The validator has a reference library of spectra for us in determining spectral accuracy.
The validator recommends that the detection is the conservative result to use.
XII. TCL COMPOUNDS  A. The identification was accurate, and all retention times, library spectra and RIC were evaluated for all detected compounds.
Yes X No N/A Where there were detected targets, the match with the library spectra were acceptable and retention times were within limits. The exception is with the 8270E data for 1,4-dioxane, where the reference spectra appear to be contaminated with non-target masses. Despite this issue, the ratios of the quantitation and confirmation masses used are consistent with those in the reference spectrum. No qualifiers are added.
B. Quantitation of representative compounds was checked to determine the accuracy of the calculation algorithm for in each internal standard quantitation set.  Yes X_NoN/A
XIII. <b>OVERALL ASSESSMENT OF THE CASE</b> The laboratory has complied with the requested method. Data are fully usable and no qualifiers are added.
Deliverables The following are noted for clarification: This is a validation review for 10 project-specific compounds by SW-846 Method 8260D and 1 compound (1,4-dioxane) by method 8270E-SIM. Data were provided for 18 solid and 31 aqueous samples for 8260D which includes 2 aqueous field duplicates, 4 methanol solids trip blanks, 4 aqueous trip blanks, and 4 rinsate blanks; 32 aqueous samples for 8270E-SIM (1,4-dioxane) including 3 field duplicates and 4 rinsate blanks. Hard copy data were not required, and the full packages were provided a

pdf. Results are incorporated into the associated EDDs. The laboratory reports a full list of volatiles targets but only the client-specified 10 compounds are reviewed.

Note that in SDG 10524485, only 1,4-dioxane is reported in the solids VOA analysis. Volatiles were not requested on the COC, only 1,4-dioxane. The lab performed this analysis in soils by method 8260D.

None of the main project reports include a Case Narrative. In addition, the laboratory "qualifier flags" that reflect calibration or other QC issues are not incorporated into the EDDs. This information is lost in the electronic deliverables and must be obtained from the pdf reports.

A Case Narrative is included in the Pace National data packages (VOA analysis). However, it is really not a Case Narrative but a general statement of compliance with methods and is identical in every report. This does not serve the purpose of a Case Narrative.

Pace National was used for some of the VOA sample analyses. Their numbering system and project identifier is different from that of Pace Minnesota. Because of this, locating the raw data and QC required translation between the two lab reports provided. This slows the process of review.

This is a validation review and includes review of the raw data. The data were validated with a minimum of 10% validated as EPA raw data review. All SDGs are Level IV.

#### Temperature:

EPA regulations (See Federal Register, March 12, 2007, 40CFR Part 122) require only that the temperature of samples delivered to the laboratory be less than 6° C and all samples intact. All met these requirements. pH:

For Method(s) 8260D: All soil samples were properly preserved with methanol and analyzed within 14 days of the collection date. Water samples were properly preserved to pH < 2 and the applicable preservative was used. Preserved water samples must be analyzed within 14 days of the collections date. Improperly preserved water samples must be analyzed within 7 days of the collection dates. Any deviations from this are listed below

10523520: Several water samples were shown as having a pH of approximately 7. Samples were analyzed on the 8th day from collection. However, since all target analytes are chlorinated compounds, no qualifiers are required per 40CFR.

10524056, 10524484, 10523658: Several water samples were shown as having a pH of approximately 7. Samples were analyzed in 7 days or less. No qualifiers are required.

# **Holding Time**

One trip blank for 8260 in SDG 10523520 was analyzed after 16.6 days from the sample date. Since trip blanks are prepared in the laboratory, and consist of laboratory water, the holding time is not as meaningful as it is for field samples as no biodegradation is expected and the sample is kept refrigerated in some manner for the majority of the time. No qualifiers are added.

### **Calibrations**

Method 8260D: Client compounds except for 1,4-dioxane meet the updated criteria. The full 8260D/Appendix IX list was submitted but was only reviewed for the 10 target compounds identified by the client. The relative standard deviation (RSD) for all compounds in the standard was less than 30%

(with an allowance for up to 40% RSD for the poor responders). Per the method, a correlation coefficient, r, of > 0.99 is also acceptable for compounds not meeting a % RSD of < 20%.

1,4-dioxane was reported from 8260D for soils, and the response factor in the initial calibrations and calibration checks in the data from Pace National is very low. The response of this analyte is known to be low due to its high water solubility and consequential poor purging/extraction behavior. The laboratory has calibrated using higher levels for this analyte and has reported elevated detection limits, and other QC checks are acceptable, including the LCS. Therefore, it is qualified as JC# instead of rejected for low response. The results tabulated in the body of this report have been qualified. The professional opinion of the validator is that there is not a significant low bias, despite the qualifiers.

In the data from Pace Minnesota, the laboratory also reports 1,4-dioxane from soils using Method 8260D. However, the laboratory uses 1,4-dioxane-d8 as the internal standard and the response factors are not low. No qualifiers are applied to these results for calibration response.

#### **Internal Standards**

IS Area % recovery summaries were provided and were within criteria for all 8260D analyses. For 8270E-SIM the recovery of the 1,4-Dioxane-d8 internal standard is low in most analytical runs. Results for these samples are qualified as JI#, where # is the observed recovery. These same samples were also qualified for surrogate recoveries and so the listed qualifier includes JS#.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. This means that the 1,4-dioxane target compound is quantified using isotopic dilution, which self-corrects for significant recovery variations in the internal standard. Therefore, the fact that the internal standard recoveries are out of limits does not mean that the target quantification is biased. LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the internal standard. The validator professional opinion is that the results are of roughly normal accuracy despite the internal standard outliers.

### **Surrogates**

All surrogate recoveries met criteria for Method 8260D.

For Method 8270E-SIM, the surrogate was recovered low in most samples, blanks, and spikes. The laboratory shows recovery limits of 30-125%, and surrogates were within the laboratory limits. The QAPP specification of 50% minimum recovery is used for purposes of validation. Impacted samples are qualified as JS#, where # is the surrogate recovery observed.

According to the raw data review, the 1,4-dioxane-d8 internal standard is used to quantify the target compound. 1,2-dichlorobenzene-d4 is used as a second internal standard to provide a relative retention time reference for the 1,4-dioxane-d8, and to quantify it as a surrogate. Since the 1,4-dioxane-d8 is quantified as a surrogate using a much less water soluble and more efficiently extracted internal standard, it is not surprising that the surrogate recoveries are low. The surrogate recoveries do not reflect the behavior of the analyte itself, which is quantified using isotopic dilution (see the internal standard section of this report). LCS runs are uniformly in control for 1,4-dioxane but also show low recoveries of the surrogate. The validator professional opinion is that the results are of likely to be of acceptable accuracy despite the surrogate outliers.

The surrogate recovery data suggest a low extraction bias for the target and its isotopic derivative, but the LCS recoveries demonstrate that the quantification of 1,4-dioxane is within acceptance limits. The qualifiers are added because if the isotopic dilution does not completely correct this in samples, then the data could be biased low proportional to the %R. These same samples were also qualified for internal standard recoveries and so the listed qualifier includes JI#.

# Matrix Spikes and MS Duplicates

Method 8260D: There is one MS/MSD for water and one MS/MSD for solids. A second MS/MSD is present for water, but it was conducted on a rinsate blank and is not representative of the site matrix. The frequency requirement of MS/MSDs is met for soils, but not for waters. In order to meet the Representativeness criteria for the PARCCs, the client is required to choose the MS/MSD sample to best represent the current event and designate it to the laboratory.

There are two MS/MSDS provided for 1,4-Dioxane by 8270E SIM. This meets the frequency requirements for this method.

There are other MS/MSDs present for both methods, but they are associated with other projects and are not evaluated.

SDG	Matrix	MS/MSD sample	Methods
10523948	Solid	SB-21 (3-5)	8260D
	Water	Rinsate 070720	8260D
10524484	Water	GP-50 (45-47)	8260D
	Water	GP-50 (45-47)	8270E-SIM
10524485	Solid	SED-26	8260D
10524485	Water	SW-23	8270E-SIM

All MS/MSDS are in control.

## Equipment Rinse Blank, Trip Blanks or other Field Blanks

No contamination of client compounds was detected in field blanks.

### Field Duplicates

Field duplicate criteria were met in all cases for water. There are no field duplicates for the soils in this set or the previous set and the project frequency is not met.

In SDG 10524485, sample SW-23 had 1,4-dioxane reported twice in the EDD and the report. One of the results shows a reporting limit of 0.25 ug/L and the other a limit of 0.5 ug/L. The lower RL result is 1.1 ug/L and the other is a non-detect. The laboratory has offered no explanation of the reason for the reanalysis or any comment about which result should be used (no Case Narrative). Qualifiers in the laboratory report, as well as the run log, indicates that an emulsion was present in the lower RL result analysis. The original run (that with the detected analyte) had low surrogate and internal standard recoveries, which may be the reason for the reanalysis given the presence of emulsions.\

Where there were detected targets, the match with the library spectra were acceptable and retention times were within limits. The exception is with the 8270E data for 1,4-dioxane, where the reference spectra

appear to be contaminated with non-target masses. Despite this issue, the ratios of the quantitation and confirmation masses used are consistent with those in the reference spectrum. No qualifiers are added.

The run with detected analyte shows the expected masses for 1,4-dioxane. However, it is not possible to appropriately compare it to the reference because the reference spectrum shown appears to contain extraneous mass peaks.

The validator recommends that the detection is the conservative result to use.

# SUMMARY TABLE OF QUALIFIED DATA

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-47 (14-15)	10523658002	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.90	JC0.0025	J-
Trip Blank	10523658004	1,4-Dioxane (p-Dioxane)	ND	ND mg/kg 1.90			J-
GP-45 (11-12')	10523520004	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.83	JC0.0025	J-
GP-46 (9-10)	10523520009	1,4-Dioxane (p-Dioxane)	ND	mg/kg	2.69	JC0.0025	J-
TRIP BLANK	10523520018	1,4-Dioxane (p-Dioxane)	ND	mg/kg	1.90	JC0.0025	J-
GP-44 (24-27)	10523520001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS46I49	J-
GP-44 (37-40)	10523520002	1,4-Dioxane (SIM)	3.2	ug/L	0.10	JS45I49	J-
GP-45 (11-14)	10523520005	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS37I41	J-
GP-45 (29-32)	10523520006	1,4-Dioxane (SIM)	ND	ug/L	0.10	JS41I45	J-
GP-46 (9-12)	10523520010	1,4-Dioxane (SIM)	0.94	ug/L	0.082	JS30I32	J-
DUP070120	10523520012	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS47	J-
GP-46 (17-20)	10523520013	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS41I45	J-
GP-46 (30-33)	10523520014	1,4-Dioxane (SIM)	1.4	ug/L	0.082	JS43I49	J-
RINSATE- 070120-B	10523520015	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS41I44	J-
GP-46 (38-40)	10523520016	1,4-Dioxane (SIM)	ND	ug/L	0.082	JS40I44	J-
GP-47 (38-40)	10523658003	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS44I46	J-
Rinsate 070720	10523948006	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS28I27	J-
GP-49 (10-12)	10524056001	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS45I42	J-
GP-49 (17-20)	10524056002	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS34I40	J-
GP-49 (45-47)	10524056003	1,4-Dioxane (SIM)	ND	ug/L	0.090	JS43I42	J-

Client ID	Lab ID	Analyte	Result	Units	MDL	DSA	EPA
GP-49 (57-59)	10524056004	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS4437	J-
GP-49 (73-75)	10524056005	1,4-Dioxane (SIM)	ND	ug/L	0.095	JS38I33	J-
Risate-070920	10524484001	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS39I38	J-
GP-50 (15-18)	10524484002	1,4-Dioxane (SIM)	ND	ug/L	0.13	JS35I34	J-
GP-50 (35-38)	10524484003	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS32I36	J-
GP-50 (45-47)	10524484004	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS25I25	J-
GP-50 (58-60)	10524484005	1,4-Dioxane (SIM)	1.1	ug/L	0.078	JS44I43	J-
GP-50 (78-80)	10524484006	1,4-Dioxane (SIM)	2.4	ug/L	0.14	JS6I6	J-
DUP_070920	10524484007	1,4-Dioxane (SIM)	ND	ug/L	0.078	JS47I47	J-
GP-50 (98-100)	10524484008	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS35	J-
SW-22	Water	1,4-Dioxane (SIM)	ND	ug/L	0.17	JS36I38	J-
SW-DUP- 070920	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS30I30	J-
SW-23	Water	1,4-Dioxane (SIM)	1.1	ug/L	0.086	JS21I21	J-
SW-23 Water		1,4-Dioxane (SIM)	ND	ug/L	0.17	JS37I40	J-
SW-24	Water	1,4-Dioxane (SIM)	ND	ug/L	0.086	JS27I27	J-

Project Name	Project	Sample ID	Lab ID	Batch	Analytical Method	Matrix	%	Analyte	CAS Number	Resu Units	PRL	MDL	RPD	DSA	EPA
2606-0017 Water	10522729	GP-34 (47-50)	10522729001	683403	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.69 ug/L	0.28	0.095		JS42	J-
2606-0017 Water	10522729	GP-34 (75-78)	10522729002	683403	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.67 ug/L	0.36	0.12		JS32I42	J-
2606-0017 Water	10522729	Rinsate-	10522729003	683403	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	2.1 ug/L	0.25	0.086		JS43i192	J-
2606-0017 Water	10522729	GP-34 (97-100)	10522729004	683403	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	28.5 ug/L	0.36	0.12		JS34I42	J-

Project	Sample ID	Lab ID	Batch	Analytical Method	Matrix	%	Analyte	CAS Number	Resu	Units	PRL	MDL	RPD	DSA	EPA
10522971	GP-35 (14-17)	10522971001	684799	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.46	ug/L	0.31	0.11		JS22I25	J-
10522971	GP-35 (47-50)	10522971002	684799	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.26	0.090		JS43	J-
10522971	GP-35 (68-72)	10522971003	684799	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.32	ug/L	0.25	0.086		JS40I44	J-
10522971	GP-35 (88-90)	10522971004	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.89	0.31		JS37I42	J-
	10522971 10522971 10522971	10522971 GP-35 (14-17) 10522971 GP-35 (47-50) 10522971 GP-35 (68-72)	10522971     GP-35 (14-17)     10522971001       10522971     GP-35 (47-50)     10522971002       10522971     GP-35 (68-72)     10522971003	10522971 GP-35 (14-17) 10522971001 684799 10522971 GP-35 (47-50) 10522971002 684799 10522971 GP-35 (68-72) 10522971003 684799	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1	10522971     GP-35 (14-17)     10522971001     684799     EPA 8270E by SIM     Water     1,4-Dioxane (SIM)     123-91-1     0.46       10522971     GP-35 (47-50)     10522971002     684799     EPA 8270E by SIM     Water     1,4-Dioxane (SIM)     123-91-1     ND       10522971     GP-35 (68-72)     10522971003     684799     EPA 8270E by SIM     Water     1,4-Dioxane (SIM)     123-91-1     0.32	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.46 ug/L         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       ND ug/L         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.32 ug/L	10522971     GP-35 (14-17)     10522971001     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     0.46 ug/L     0.31       10522971     GP-35 (47-50)     10522971002     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     ND ug/L     0.26       10522971     GP-35 (68-72)     10522971003     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     0.32 ug/L     0.25	10522971     GP-35 (14-17)     10522971001     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     0.46 ug/L     0.31     0.11       10522971     GP-35 (47-50)     10522971002     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     ND ug/L     0.26     0.090       10522971     GP-35 (68-72)     10522971003     684799     EPA 8270E by SIM Water     1,4-Dioxane (SIM)     123-91-1     0.32 ug/L     0.25     0.086	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.46 ug/L       0.31       0.11         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       ND ug/L       0.26       0.090         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.32 ug/L       0.25       0.086	10522971       GP-35 (14-17)       10522971001       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.46 ug/L       0.31 0.11       JS22125         10522971       GP-35 (47-50)       10522971002       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       ND ug/L       0.26 0.090       JS43         10522971       GP-35 (68-72)       10522971003       684799       EPA 8270E by SIM Water       1,4-Dioxane (SIM)       123-91-1       0.32 ug/L       0.25 0.086       JS40I44

Project Name	Project	Sample ID	Lab ID	Batch	Analytical Method	Matrix	%	Analyte	CAS Number	Resu	Units	PRL	MDL	RPD	DSA	EPA
2606-0017 Water	10523355	GP-36 (8-10)	10523355002	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.50	0.17		JS39I44	J-
2606-0017 Water	10523355	Rinsate 063020	10523355003	684521	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.25	0.086		JS39I42	J-
2606-0017 Water	10523355	GP-36 (13-17)	10523355004	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	1	ug/L	0.26	0.090		JS22I13	J-
2606-0017 Water	10523355	GP-36 (24-26)	10523355005	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	1.1	ug/L	0.25	0.086		JS36I41	J-
2606-0017 Water	10523355	GP-36 (38-40)	10523355006	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	3.0	ug/L	0.25	0.086		JS36I42	J-
2606-0017 Water	10523355	GP-36 (53-57)	10523355007	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0	ug/L	0.29	0.10		JS39I46	J-
2606-0017 Water	10523355	Dup 063020	10523355008	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	3	ug/L	0.50	0.17		JS28I32	J-
2606-0017 Water 0	Gı 10523355	GP-36 (68-70)	10523355009	685081	I EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.50	0.17		JS36I42	J-

Project Name	Project	Sample ID	Lab ID	Batch	Analytical Method	Matrix	%	Analyte	CAS Number	r Resu Units	PRL	MDL	RPD	DSA	<b>EPA</b>
2606-0017 Water	10523363	GP-37 (15-18)	10523363001	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND ug/L	0.31	0.11		JS43I48	J-
2606-0017 Water	10523363	GP-37 (23-26)	10523363002	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND ug/L	0.31	0.11		JS40I46	J-
2606-0017 Water	10523363	GP-37 (31-34)	10523363003	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.94 ug/L	0.25	0.086		JS37I42	J-
2606-0017 Water	10523363	Dup 062920	10523363004	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND ug/L	0.25	0.086		JS34I40	J-
2606-0017 Water	10523363	GP-37 (38-40)	10523363005	685081	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	3 ug/L	0.36	0.12		JS40I47	J-
2606-0017 Water G	Gi 10523363	GP-43 (6-9)	10523363013	68508	1 EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND ug/L	0.29	0.10		JS32I38	J-
2606-0017 Water G	i 10523363	GP-43 (14-17)	10523363014	68508	1 EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND ug/L	0.28	0.095		JS42I49	J-
2606-0017 Water G	i 10523363	GP-43 (22-25)	10523363015	68508	1 EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.32 ug/L	0.31	0.11		JS42I48	J-
2606-0017 Water G	i 10523363	GP-43 (30-33)	10523363016	68508	1 EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.36 ug/L	0.29	0.10		JS35I43	J-
2606-0017 Water G	i 10523363	GP-43 (38-40)	10523363017	68508	1 EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.37 ug/L	0.25	0.086		JS36I43	J-

Project Name Project Sample ID Lab ID Analytical Method Matrix % Analyte CAS Number Resu Units PRL MDL RPD DSA **EPA** Batch 2606-0017 Water 10523518 GP-37 (96-100) 10523518003 684741 EPA 8270E by SIM Water 1,4-Dioxane (SIM) 1.1 ug/L 0.26 0.090 123-91-1 JS38I41 J-

Project Name	Project	Sample ID	Lab ID	Batch	Analytical Method	Matrix	%	Analyte	CAS Number	Resu	Units	PRL	MDL	RPD	DSA	EPA
2606-0012 Water	10523661	GP-48 (8-12)	10523661001	684741	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.85	ug/L	0.42	0.14		JS36I37	J-
2606-0012 Water	10523661	GP-48 (25-27)	10523661002	684741	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	0.71	ug/L	0.31	0.11		JS45I48	J-
2606-0012 Water	10523661	GP-48 (31-34)	10523661003	684741	EPA 8270E by SIM	Water		1,4-Dioxane (SIM)	123-91-1	ND	ug/L	0.25	0.086		JS46	J-

Project Name	Project	Sample ID	Lab ID	Analytical	Date Analyzed	Matrix	Analyte	Result	Units	PRL	MDL	RPD	DSA	EPA
2606-0017 Water	10523948	Rinsate 070720	10523948006	EPA 8270E	07/14/2020 19:59	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS28I27	J-
2606-0017 Water	10523948	Rinsate 070720	10523948006	EPA 8270E	07/14/2020 19:59	Water	1,4-Dioxane-d8 (S)	28	%					

Project Name	Project	Sample ID	Lab ID	Analytical	Date Analyzed	Matrix	Analyte	Result	Units	PRL	MDL	RPD	DSA	EPA
2606-0017 Water	10524056	GP-49 (10-12)	10524056001	EPA 8270E	07/12/2020 22:33	Water	1,4-Dioxane (SIM)	ND	ug/L	0.28	0.095		JS45I42	J-
2606-0017 Water	10524056	GP-49 (17-20)	10524056002	EPA 8270E	07/14/2020 20:20	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS34I40	J-
2606-0017 Water	10524056	GP-49 (45-47)	10524056003	EPA 8270E	07/12/2020 23:14	Water	1,4-Dioxane (SIM)	ND	ug/L	0.26	0.090		JS43I42	J-
2606-0017 Water	10524056	GP-49 (57-59)	10524056004	EPA 8270E	07/12/2020 23:35	Water	1,4-Dioxane (SIM)	ND	ug/L	0.28	0.095		JS4437	J-
2606-0017 Water	10524056	GP-49 (73-75)	10524056005	EPA 8270E	07/12/2020 23:56	Water	1,4-Dioxane (SIM)	ND	ug/L	0.28	0.095		JS38I33	J-

Project Name	Project	Sample ID	Lab ID	Analytical	Date Analyzed	Matrix	Analyte	Result	Units	PRL	MDL	RPD	DSA	<b>EPA</b>
2606-0017 Water	10523520	GP-44 (24-27)	10523520001	EPA 8270E	07/10/2020 14:52	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS46I49	J-
2606-0017 Water	10523520	GP-44 (37-40)	10523520002	EPA 8270E	07/10/2020 15:12	Water	1,4-Dioxane (SIM)	3.2	ug/L	0.29	0.10		JS45I49	J-
2606-0017 Water	10523520	GP-45 (11-14)	10523520005	EPA 8270E	07/10/2020 15:33	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS37I41	J-
2606-0017 Water	10523520	GP-45 (29-32)	10523520006	EPA 8270E	07/10/2020 15:54	Water	1,4-Dioxane (SIM)	ND	ug/L	0.29	0.10		JS41I45	J-
2606-0017 Water	10523520	GP-46 (9-12)	10523520010	EPA 8270E	07/10/2020 16:35	Water	1,4-Dioxane (SIM)	0.94	ug/L	0.24	0.082		JS30I32	J-
2606-0017 Water	10523520	DUP070120	10523520012	EPA 8270E	07/10/2020 17:17	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS47	J-
2606-0017 Water	10523520	GP-46 (17-20)	10523520013	EPA 8270E	07/10/2020 17:38	Water	1,4-Dioxane (SIM)	ND	ug/L	0.24	0.082		JS41I45	J-
2606-0017 Water	10523520	GP-46 (30-33)	10523520014	EPA 8270E	07/10/2020 17:58	Water	1,4-Dioxane (SIM)	1.4	ug/L	0.24	0.082		JS43I49	J-
2606-0017 Water	10523520	RINSATE-070120-	10523520015	EPA 8270E	07/10/2020 18:19	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS41I44	J-
2606-0017 Water	10523520	GP-46 (38-40)	10523520016	EPA 8270E	07/10/2020 18:40	Water	1,4-Dioxane (SIM)	ND	ug/L	0.24	0.082		JS40I44	J-

Project Name	Project	Sample ID	Lab ID	Analytical	Date Analyzed	Matrix	Analyte	Result	Units	PRL	MDL	RPD	DSA	<b>EPA</b>
2606-0017 Water	10524484	Risate-070920	10524484001	EPA 8270E	07/14/2020 20:41	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS39I38	J-
2606-0017 Water	10524484	GP-50 (15-18)	10524484002	EPA 8270E	07/14/2020 21:01	Water	1,4-Dioxane (SIM)	ND	ug/L	0.38	0.13		JS35I34	J-
2606-0017 Water	10524484	GP-50 (35-38)	10524484003	EPA 8270E	07/16/2020 17:28	Water	1,4-Dioxane (SIM)	ND	ug/L	0.50	0.17		JS32I36	J-
2606-0017 Water	10524484	GP-50 (45-47)	10524484004	EPA 8270E	07/14/2020 21:42	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS25I25	J-
2606-0017 Water	10524484	GP-50 (58-60)	10524484005	EPA 8270E	07/14/2020 22:44	Water	1,4-Dioxane (SIM)	1.1	ug/L	0.23	0.078		JS44I43	J-
2606-0017 Water	10524484	GP-50 (78-80)	10524484006	EPA 8270E	07/14/2020 23:05	Water	1,4-Dioxane (SIM)	2.4	ug/L	0.42	0.14		JS6I6	J-
2606-0017 Water	10524484	DUP_070920	10524484007	EPA 8270E	07/14/2020 23:26	Water	1,4-Dioxane (SIM)	ND	ug/L	0.23	0.078		JS47I47	J-
2606-0017 Water	10524484	GP-50 (98-100)	10524484008	EPA 8270E	07/14/2020 23:46	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS35	J-

Project Name	Project	Sample ID	Lab ID	Analytical	Date Analyzed	Matrix	Analyte	Result	Units	PRL	MDL	RPD	DSA	<b>EPA</b>
2606-0017 Water	10524485	SW-22	10524485003	EPA 8270E	07/16/2020 19:11	Water	1,4-Dioxane (SIM)	ND	ug/L	0.50	0.17		JS36I38	J-
2606-0017 Water	10524485	SW-DUP-070920	10524485004	EPA 8270E	07/15/2020 00:27	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS30I30	J-
2606-0017 Water	10524485	SW-23	10524485006	EPA 8270E	07/15/2020 00:48	Water	1,4-Dioxane (SIM)	1.1	ug/L	0.25	0.086		JS21I21	J-
2606-0017 Water	10524485	SW-23	10524485006	EPA 8270E	07/16/2020 19:32	Water	1,4-Dioxane (SIM)	ND	ug/L	0.50	0.17		JS37I40	J-
2606-0017 Water	10524485	SW-24	10524485008	EPA 8270E	07/15/2020 01:50	Water	1,4-Dioxane (SIM)	ND	ug/L	0.25	0.086		JS27I27	J-

Project Name	Project Number	Sample ID	Lab ID	Batch Number	Extraction Method	Analytical Method Date Collected	Date Extracted	Date Analyzed	Matrix	Analyte	CAS	Result	Units	PRL	MDL	RPD	DSA	EPA
2606-0017 Water	10524981	SW-21	10524981001	686956	EPA Mod. 3510C	EPA 8270E by SIM 07/15/2020	07/15/2020 16:32	07/16/2020 20:34	Water	1,4-Dioxane (SIM)	123-91-1	0.35	ug/L	0.25	0.086		JS33I36	J-
2606-0017 Water	10524981	SW-21	10524981001	686956	EPA Mod. 3510C	EPA 8270E by SIM 07/15/2020	07/15/2020 16:32	07/16/2020 20:34	Water	1,4-Dioxane-d8 (S)		33	%					



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