

May 29, 2019

Mr. Brad Jacobson
Pace Analytical Services, LLC..
1700 Elm Street
Suite 200
Minneapolis, MN 55414

RE: Project: PRJ07786 19-01567 MPCA Freeway-Revised Report
Pace Project No.: 10469120

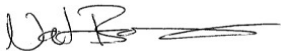
Dear Mr. Jacobson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on May 29, 2019, to convert TO15 reporting units from ppbv into $\mu\text{g}/\text{m}^3$.

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

Sincerely,



Nathan Boberg
nathan.boberg@pacelabs.com
(612)360-0728
Project Manager

Enclosures

cc: Pace Analytical - Field, Pace Analytical Field Services
Mr. Terry Borgerding, PASI Minnesota Field
Mr. Tom Halverson, Pace Analytical Minnesota



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

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 Certification #: M-MN064

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

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SAMPLE SUMMARY

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10469120001	FD-SB-07	Air	04/01/19 13:45	04/01/19 16:20
10469120002	FD-SB-08	Air	04/01/19 15:23	04/01/19 16:20

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SAMPLE ANALYTE COUNT

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10469120001	FD-SB-07	TO-3 Air	CH1	1
10469120002	FD-SB-08	TO-3 Air	CH1	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Sample: FD-SB-07	Lab ID: 10469120001	Collected: 04/01/19 13:45	Received: 04/01/19 16:20	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO3 GCV AIR Meth,Ethane,Ethene								
Analytical Method: TO-3 Air								
Methane	45.3	ppmv	35.0	1.75		04/10/19 14:17	74-82-8	
Analytical Method: TO-15								
Acetone	300	ug/m3	4.4	1.83		04/18/19 21:36	67-64-1	
Benzene	1.9	ug/m3	0.59	1.83		04/18/19 21:36	71-43-2	
Benzyl chloride	ND	ug/m3	4.8	1.83		04/18/19 21:36	100-44-7	
Bromodichloromethane	ND	ug/m3	2.5	1.83		04/18/19 21:36	75-27-4	
Bromoform	ND	ug/m3	9.6	1.83		04/18/19 21:36	75-25-2	
Bromomethane	ND	ug/m3	1.4	1.83		04/18/19 21:36	74-83-9	
1,3-Butadiene	ND	ug/m3	0.82	1.83		04/18/19 21:36	106-99-0	
2-Butanone (MEK)	16.2	ug/m3	5.5	1.83		04/18/19 21:36	78-93-3	
Carbon disulfide	ND	ug/m3	1.2	1.83		04/18/19 21:36	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.3	1.83		04/18/19 21:36	56-23-5	
Chlorobenzene	ND	ug/m3	1.7	1.83		04/18/19 21:36	108-90-7	
Chloroethane	ND	ug/m3	0.98	1.83		04/18/19 21:36	75-00-3	
Chloroform	ND	ug/m3	0.91	1.83		04/18/19 21:36	67-66-3	
Chloromethane	ND	ug/m3	0.77	1.83		04/18/19 21:36	74-87-3	
Cyclohexane	ND	ug/m3	3.2	1.83		04/18/19 21:36	110-82-7	
Dibromochloromethane	ND	ug/m3	3.2	1.83		04/18/19 21:36	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1.4	1.83		04/18/19 21:36	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.2	1.83		04/18/19 21:36	95-50-1	
1,3-Dichlorobenzene	5.1	ug/m3	2.2	1.83		04/18/19 21:36	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	5.6	1.83		04/18/19 21:36	106-46-7	
Dichlorodifluoromethane	10.1	ug/m3	1.8	1.83		04/18/19 21:36	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.83		04/18/19 21:36	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.75	1.83		04/18/19 21:36	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.83		04/18/19 21:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.83		04/18/19 21:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.83		04/18/19 21:36	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.7	1.83		04/18/19 21:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.7	1.83		04/18/19 21:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.7	1.83		04/18/19 21:36	10061-02-6	
Dichlorotetrafluoroethane	15.8	ug/m3	2.6	1.83		04/18/19 21:36	76-14-2	
Ethanol	33.5	ug/m3	3.5	1.83		04/18/19 21:36	64-17-5	
Ethyl acetate	ND	ug/m3	1.3	1.83		04/18/19 21:36	141-78-6	
Ethylbenzene	4.4	ug/m3	1.6	1.83		04/18/19 21:36	100-41-4	
4-Ethyltoluene	ND	ug/m3	4.6	1.83		04/18/19 21:36	622-96-8	
n-Heptane	3.5	ug/m3	1.5	1.83		04/18/19 21:36	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	9.9	1.83		04/18/19 21:36	87-68-3	
n-Hexane	3.4	ug/m3	1.3	1.83		04/18/19 21:36	110-54-3	
2-Hexanone	ND	ug/m3	7.6	1.83		04/18/19 21:36	591-78-6	
Methylene Chloride	ND	ug/m3	6.5	1.83		04/18/19 21:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	7.6	1.83		04/18/19 21:36	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	6.7	1.83		04/18/19 21:36	1634-04-4	
Naphthalene	ND	ug/m3	4.9	1.83		04/18/19 21:36	91-20-3	
2-Propanol	6.7	ug/m3	4.6	1.83		04/18/19 21:36	67-63-0	
Propylene	10.9	ug/m3	0.64	1.83		04/18/19 21:36	115-07-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Sample: FD-SB-07		Lab ID: 10469120001	Collected: 04/01/19 13:45	Received: 04/01/19 16:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: TO-15								
Styrene	ND	ug/m3	1.6	1.83		04/18/19 21:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.3	1.83		04/18/19 21:36	79-34-5	
Tetrachloroethene	18.8	ug/m3	1.3	1.83		04/18/19 21:36	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.1	1.83		04/18/19 21:36	109-99-9	
Toluene	16.3	ug/m3	1.4	1.83		04/18/19 21:36	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	13.8	1.83		04/18/19 21:36	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.83		04/18/19 21:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.0	1.83		04/18/19 21:36	79-00-5	
Trichloroethene	ND	ug/m3	1.0	1.83		04/18/19 21:36	79-01-6	
Trichlorofluoromethane	11.5	ug/m3	2.1	1.83		04/18/19 21:36	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.9	1.83		04/18/19 21:36	76-13-1	
1,2,4-Trimethylbenzene	6.8	ug/m3	1.8	1.83		04/18/19 21:36	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.83		04/18/19 21:36	108-67-8	
Vinyl acetate	ND	ug/m3	1.3	1.83		04/18/19 21:36	108-05-4	
Vinyl chloride	ND	ug/m3	0.48	1.83		04/18/19 21:36	75-01-4	
m&p-Xylene	17.5	ug/m3	3.2	1.83		04/18/19 21:36	179601-23-1	
o-Xylene	6.0	ug/m3	1.6	1.83		04/18/19 21:36	95-47-6	

Sample: FD-SB-08		Lab ID: 10469120002	Collected: 04/01/19 15:23	Received: 04/01/19 16:20	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO3 GCV AIR Meth,Ethane,Ethene		Analytical Method: TO-3 Air						
Methane	ND	ppmv	36.6	1.83		04/10/19 14:26	74-82-8	
Analytical Method: TO-15								
Acetone	159	ug/m3	4.2	1.75		04/18/19 22:03	67-64-1	
Benzene	5.2	ug/m3	0.57	1.75		04/18/19 22:03	71-43-2	
Benzyl chloride	ND	ug/m3	4.6	1.75		04/18/19 22:03	100-44-7	
Bromodichloromethane	ND	ug/m3	2.4	1.75		04/18/19 22:03	75-27-4	
Bromoform	ND	ug/m3	9.2	1.75		04/18/19 22:03	75-25-2	
Bromomethane	ND	ug/m3	1.4	1.75		04/18/19 22:03	74-83-9	
1,3-Butadiene	ND	ug/m3	0.79	1.75		04/18/19 22:03	106-99-0	
2-Butanone (MEK)	ND	ug/m3	5.2	1.75		04/18/19 22:03	78-93-3	
Carbon disulfide	34.6	ug/m3	1.1	1.75		04/18/19 22:03	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.2	1.75		04/18/19 22:03	56-23-5	
Chlorobenzene	ND	ug/m3	1.6	1.75		04/18/19 22:03	108-90-7	
Chloroethane	ND	ug/m3	0.94	1.75		04/18/19 22:03	75-00-3	
Chloroform	ND	ug/m3	0.87	1.75		04/18/19 22:03	67-66-3	
Chloromethane	6.1	ug/m3	0.74	1.75		04/18/19 22:03	74-87-3	
Cyclohexane	ND	ug/m3	3.1	1.75		04/18/19 22:03	110-82-7	
Dibromochloromethane	ND	ug/m3	3.0	1.75		04/18/19 22:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1.4	1.75		04/18/19 22:03	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.1	1.75		04/18/19 22:03	95-50-1	
1,3-Dichlorobenzene	3.2	ug/m3	2.1	1.75		04/18/19 22:03	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Sample: FD-SB-08	Lab ID: 10469120002	Collected: 04/01/19 15:23	Received: 04/01/19 16:20	Matrix: Air				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: TO-15								
1,4-Dichlorobenzene	ND	ug/m3	5.4	1.75		04/18/19 22:03	106-46-7	
Dichlorodifluoromethane	65.8	ug/m3	1.8	1.75		04/18/19 22:03	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.4	1.75		04/18/19 22:03	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.72	1.75		04/18/19 22:03	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.4	1.75		04/18/19 22:03	75-35-4	
cis-1,2-Dichloroethene	16.1	ug/m3	1.4	1.75		04/18/19 22:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.75		04/18/19 22:03	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.6	1.75		04/18/19 22:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.6	1.75		04/18/19 22:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.6	1.75		04/18/19 22:03	10061-02-6	
Dichlorotetrafluoroethane	77.1	ug/m3	2.5	1.75		04/18/19 22:03	76-14-2	
Ethanol	7.1	ug/m3	3.4	1.75		04/18/19 22:03	64-17-5	
Ethyl acetate	ND	ug/m3	1.3	1.75		04/18/19 22:03	141-78-6	
Ethylbenzene	4.4	ug/m3	1.5	1.75		04/18/19 22:03	100-41-4	
4-Ethyltoluene	ND	ug/m3	4.4	1.75		04/18/19 22:03	622-96-8	
n-Heptane	66.3	ug/m3	1.5	1.75		04/18/19 22:03	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	9.5	1.75		04/18/19 22:03	87-68-3	
n-Hexane	180	ug/m3	1.3	1.75		04/18/19 22:03	110-54-3	
2-Hexanone	ND	ug/m3	7.3	1.75		04/18/19 22:03	591-78-6	
Methylene Chloride	ND	ug/m3	6.2	1.75		04/18/19 22:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	7.3	1.75		04/18/19 22:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	6.4	1.75		04/18/19 22:03	1634-04-4	
Naphthalene	ND	ug/m3	4.7	1.75		04/18/19 22:03	91-20-3	
2-Propanol	ND	ug/m3	4.4	1.75		04/18/19 22:03	67-63-0	
Propylene	310	ug/m3	0.61	1.75		04/18/19 22:03	115-07-1	E
Styrene	ND	ug/m3	1.5	1.75		04/18/19 22:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.2	1.75		04/18/19 22:03	79-34-5	
Tetrachloroethene	34.9	ug/m3	1.2	1.75		04/18/19 22:03	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.0	1.75		04/18/19 22:03	109-99-9	
Toluene	17.0	ug/m3	1.3	1.75		04/18/19 22:03	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	13.2	1.75		04/18/19 22:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.75		04/18/19 22:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	0.97	1.75		04/18/19 22:03	79-00-5	
Trichloroethene	35.5	ug/m3	0.96	1.75		04/18/19 22:03	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.0	1.75		04/18/19 22:03	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.7	1.75		04/18/19 22:03	76-13-1	
1,2,4-Trimethylbenzene	7.7	ug/m3	1.7	1.75		04/18/19 22:03	95-63-6	
1,3,5-Trimethylbenzene	2.1	ug/m3	1.7	1.75		04/18/19 22:03	108-67-8	
Vinyl acetate	ND	ug/m3	1.3	1.75		04/18/19 22:03	108-05-4	
Vinyl chloride	1.2	ug/m3	0.46	1.75		04/18/19 22:03	75-01-4	
m&p-Xylene	15.7	ug/m3	3.1	1.75		04/18/19 22:03	179601-23-1	
o-Xylene	5.5	ug/m3	1.5	1.75		04/18/19 22:03	95-47-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

QC Batch: 608611 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10469120001, 10469120002

METHOD BLANK: 3289774 Matrix: Air

Associated Lab Samples: 10469120001, 10469120002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	0.56	04/18/19 12:44	
1,1,2,2-Tetrachloroethane	ug/m3	ND	0.35	04/18/19 12:44	
1,1,2-Trichloroethane	ug/m3	ND	0.28	04/18/19 12:44	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	0.78	04/18/19 12:44	
1,1-Dichloroethane	ug/m3	ND	0.41	04/18/19 12:44	
1,1-Dichloroethene	ug/m3	ND	0.40	04/18/19 12:44	
1,2,4-Trichlorobenzene	ug/m3	ND	3.8	04/18/19 12:44	
1,2,4-Trimethylbenzene	ug/m3	ND	0.50	04/18/19 12:44	
1,2-Dibromoethane (EDB)	ug/m3	ND	0.39	04/18/19 12:44	
1,2-Dichlorobenzene	ug/m3	ND	0.61	04/18/19 12:44	
1,2-Dichloroethane	ug/m3	ND	0.21	04/18/19 12:44	
1,2-Dichloropropane	ug/m3	ND	0.47	04/18/19 12:44	
1,3,5-Trimethylbenzene	ug/m3	ND	0.50	04/18/19 12:44	
1,3-Butadiene	ug/m3	ND	0.22	04/18/19 12:44	
1,3-Dichlorobenzene	ug/m3	ND	0.61	04/18/19 12:44	
1,4-Dichlorobenzene	ug/m3	ND	1.5	04/18/19 12:44	
2-Butanone (MEK)	ug/m3	ND	1.5	04/18/19 12:44	
2-Hexanone	ug/m3	ND	2.1	04/18/19 12:44	
2-Propanol	ug/m3	ND	1.2	04/18/19 12:44	
4-Ethyltoluene	ug/m3	ND	1.2	04/18/19 12:44	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	2.1	04/18/19 12:44	
Acetone	ug/m3	ND	1.2	04/18/19 12:44	
Benzene	ug/m3	ND	0.16	04/18/19 12:44	
Benzyl chloride	ug/m3	ND	1.3	04/18/19 12:44	
Bromodichloromethane	ug/m3	ND	0.68	04/18/19 12:44	
Bromoform	ug/m3	ND	2.6	04/18/19 12:44	
Bromomethane	ug/m3	ND	0.39	04/18/19 12:44	
Carbon disulfide	ug/m3	ND	0.32	04/18/19 12:44	
Carbon tetrachloride	ug/m3	ND	0.64	04/18/19 12:44	
Chlorobenzene	ug/m3	ND	0.47	04/18/19 12:44	
Chloroethane	ug/m3	ND	0.27	04/18/19 12:44	
Chloroform	ug/m3	ND	0.25	04/18/19 12:44	
Chloromethane	ug/m3	ND	0.21	04/18/19 12:44	
cis-1,2-Dichloroethene	ug/m3	ND	0.40	04/18/19 12:44	
cis-1,3-Dichloropropene	ug/m3	ND	0.46	04/18/19 12:44	
Cyclohexane	ug/m3	ND	0.88	04/18/19 12:44	
Dibromochloromethane	ug/m3	ND	0.86	04/18/19 12:44	
Dichlorodifluoromethane	ug/m3	ND	0.50	04/18/19 12:44	
Dichlorotetrafluoroethane	ug/m3	ND	0.71	04/18/19 12:44	
Ethanol	ug/m3	ND	0.96	04/18/19 12:44	
Ethyl acetate	ug/m3	ND	0.37	04/18/19 12:44	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

METHOD BLANK: 3289774

Matrix: Air

Associated Lab Samples: 10469120001, 10469120002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethylbenzene	ug/m3	ND	0.44	04/18/19 12:44	
Hexachloro-1,3-butadiene	ug/m3	ND	2.7	04/18/19 12:44	
m&p-Xylene	ug/m3	ND	0.88	04/18/19 12:44	
Methyl-tert-butyl ether	ug/m3	ND	1.8	04/18/19 12:44	
Methylene Chloride	ug/m3	ND	1.8	04/18/19 12:44	
n-Heptane	ug/m3	ND	0.42	04/18/19 12:44	
n-Hexane	ug/m3	ND	0.36	04/18/19 12:44	
Naphthalene	ug/m3	ND	1.3	04/18/19 12:44	
o-Xylene	ug/m3	ND	0.44	04/18/19 12:44	
Propylene	ug/m3	ND	0.18	04/18/19 12:44	
Styrene	ug/m3	ND	0.43	04/18/19 12:44	
Tetrachloroethene	ug/m3	ND	0.34	04/18/19 12:44	
Tetrahydrofuran	ug/m3	ND	0.30	04/18/19 12:44	
Toluene	ug/m3	ND	0.38	04/18/19 12:44	
trans-1,2-Dichloroethene	ug/m3	ND	0.40	04/18/19 12:44	
trans-1,3-Dichloropropene	ug/m3	ND	0.46	04/18/19 12:44	
Trichloroethene	ug/m3	ND	0.27	04/18/19 12:44	
Trichlorofluoromethane	ug/m3	ND	0.57	04/18/19 12:44	
Vinyl acetate	ug/m3	ND	0.36	04/18/19 12:44	
Vinyl chloride	ug/m3	ND	0.13	04/18/19 12:44	

LABORATORY CONTROL SAMPLE: 3289775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	56.6	50.6	89	70-130	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	63.6	91	70-132	
1,1,2-Trichloroethane	ug/m3	58.2	52.0	89	70-130	
1,1,2-Trichlorotrifluoroethane	ug/m3	84.9	73.1	86	70-130	
1,1-Dichloroethane	ug/m3	42.4	39.3	93	70-130	
1,1-Dichloroethene	ug/m3	43.5	36.4	84	70-130	
1,2,4-Trichlorobenzene	ug/m3	74.7	62.8	84	56-130	
1,2,4-Trimethylbenzene	ug/m3	53	45.3	86	70-134	
1,2-Dibromoethane (EDB)	ug/m3	83.6	71.6	86	70-130	
1,2-Dichlorobenzene	ug/m3	59.9	55.9	93	70-132	
1,2-Dichloroethane	ug/m3	42.8	39.3	92	70-130	
1,2-Dichloropropane	ug/m3	48.4	42.4	88	70-130	
1,3,5-Trimethylbenzene	ug/m3	53.5	44.1	82	70-132	
1,3-Butadiene	ug/m3	22.5	20.6	91	65-130	
1,3-Dichlorobenzene	ug/m3	65.4	56.2	86	70-137	
1,4-Dichlorobenzene	ug/m3	65.4	57.2	87	70-134	
2-Butanone (MEK)	ug/m3	32.4	25.2	78	70-130	
2-Hexanone	ug/m3	42.9	38.1	89	70-135	
2-Propanol	ug/m3	26.5	26.6	101	68-130	
4-Ethyltoluene	ug/m3	52	46.2	89	70-138	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

LABORATORY CONTROL SAMPLE: 3289775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Methyl-2-pentanone (MIBK)	ug/m3	42	38.6	92	70-131	
Acetone	ug/m3	26.6	22.1	83	67-130	
Benzene	ug/m3	34.4	33.2	96	70-130	
Benzyl chloride	ug/m3	56.3	47.5	84	70-130	
Bromodichloromethane	ug/m3	69.5	61.3	88	70-130	
Bromoform	ug/m3	97.7	80.0	82	70-132	
Bromomethane	ug/m3	40.6	35.0	86	69-130	
Carbon disulfide	ug/m3	32.9	29.5	90	56-137	
Carbon tetrachloride	ug/m3	65.9	46.7	71	66-131	
Chlorobenzene	ug/m3	49.6	41.0	83	70-130	
Chloroethane	ug/m3	26.8	27.4	102	70-130	
Chloroform	ug/m3	52.6	50.5	96	70-130	
Chloromethane	ug/m3	22.2	18.2	82	66-130	
cis-1,2-Dichloroethene	ug/m3	41.9	37.4	89	70-130	
cis-1,3-Dichloropropene	ug/m3	48	38.5	80	70-133	
Cyclohexane	ug/m3	35.3	32.0	90	68-132	
Dibromochloromethane	ug/m3	90	71.7	80	70-130	
Dichlorodifluoromethane	ug/m3	52.8	44.1	83	70-130	
Dichlorotetrafluoroethane	ug/m3	74.6	66.5	89	70-130	
Ethanol	ug/m3	21.1	20.3	96	68-133	
Ethyl acetate	ug/m3	38.8	33.6	86	69-130	
Ethylbenzene	ug/m3	45.5	39.3	87	67-131	
Hexachloro-1,3-butadiene	ug/m3	108	99.5	92	66-137	
m&p-Xylene	ug/m3	45.9	43.1	94	70-132	
Methyl-tert-butyl ether	ug/m3	37.4	33.4	89	70-130	
Methylene Chloride	ug/m3	38.1	33.6	88	65-130	
n-Heptane	ug/m3	43.7	37.0	85	65-130	
n-Hexane	ug/m3	37.6	30.6	81	66-130	
Naphthalene	ug/m3	52.7	44.8	85	56-130	
o-Xylene	ug/m3	44.1	39.4	89	70-130	
Propylene	ug/m3	19.2	15.0	78	67-130	
Styrene	ug/m3	44.2	39.8	90	69-136	
Tetrachloroethene	ug/m3	70.3	62.5	89	70-130	
Tetrahydrofuran	ug/m3	30.3	30.1	99	68-131	
Toluene	ug/m3	39.4	34.5	88	70-130	
trans-1,2-Dichloroethene	ug/m3	41.5	38.4	93	70-130	
trans-1,3-Dichloropropene	ug/m3	44.8	42.6	95	70-134	
Trichloroethene	ug/m3	56.3	50.5	90	70-130	
Trichlorofluoromethane	ug/m3	58.8	52.8	90	65-130	
Vinyl acetate	ug/m3	35.1	32.8	93	61-133	
Vinyl chloride	ug/m3	28.1	23.3	83	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

QC Batch: 598755	Analysis Method: TO-3 Air
QC Batch Method: TO-3 Air	Analysis Description: TO3 GCV AIR METH,ETHANE,ETHENE
Associated Lab Samples: 10469120001, 10469120002	

METHOD BLANK: 3237007 Matrix: Air

Associated Lab Samples: 10469120001, 10469120002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ppmv	ND	20.0	04/10/19 13:01	

LABORATORY CONTROL SAMPLE & LCSD: 3237008 3237009

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ppmv	1000	738	718	74	72	70-130	3	30	

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QUALIFIERS

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07786 19-01567 MPCA Freeway-Revised Report

Pace Project No.: 10469120

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10469120001	FD-SB-07	TO-3 Air	598755		
10469120002	FD-SB-08	TO-3 Air	598755		

REPORT OF LABORATORY ANALYSIS

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Minnesota Pollution Control Agency

Chain-of-Custody Form revision 2013.0909

Work Order Number:

COC Type:

Page: 1 of 1

Turnaround Time:

COC ID:

FOR LAB USE ONLY

PROJECT/CLIENT INFO

LABORATORY

Facility Code: MNSW-057

Program Code (MDH Lab Only):

Lab Name:

Pace Analytical - Minneapolis, MN

Project Name: 19-01567 MPCA Freeway Landfill 2019 Soil Gas

Project Task Code: PRJ07786

Address: 1700 SE Elm Street

Project Manager: Brad Jacobson

612-607-6375

EPIC PROFILE #: 38716

Minneapolis

MN

55414

Potential Hazard?

If yes, add information to Sampler Comments Section

Phone No: 612-607-6400

Lab Work Order Sticker

SAMPLE DETAILS

SAMPLE TYPE CODES

Sample=Routine Sample
S-IVP=Integrated Vertical Profile Sample
S-CWOP=Composite Sample

QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample

LAB MATRIX CODES

DW=Drinking Water
NW=Non-potable Water
SD=Soil/Solid
WP=Wipe
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRIX CODES

Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample

Location Identifier	Sample Type	Date	Time	Start Depth, in meters	End Depth, in meters	Grab (G) or Composite (C) Sample	Lab Matrix Code	Field Matrix Code	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS	PRESERV.	TO-15/TO-3 (See QAPP Analytical Table 3c)	Lab Sample No.	#
FD-SB-07	AR	4/1/19	1345	-	-	C	AR	AR	N	-	1			X	001	1
FD-SB-08	AR	4/1/19	1523	-	-	C	AR	AR	N	-	1			X	002	2
									N							3
									N							4
									N							5
									N							6
									N							7
									N							8
									N							9
									N							10

WO#: 10469120

10469120

Sampled By: *Chris Relesi*

Sampler's Signature: *Cery Pa*

Phone #: 612-597-7254

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/ Affiliation	Date/Time
(Sampler) <i>Cery Pa</i> Pace	4/1/19 / 1620	<i>[Signature]</i>	4/1/19 / 1620

WO#: 10469120

PM: NB3 Due Date: 04/08/19
 CLIENT: PAST-MNFLD-R

Air Sample Condition Upon Receipt

Client Name: M.A.A.

Project #:

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No
 Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Tin Can Other: _____
 Temp Blank rec: Yes No

Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____
 Thermometer Used: G87A9170600254 G87A9155100842

Temp should be above freezing to 6°C Correction Factor: _____ Date & Initials of Person Examining Contents: 04/02/19 CS

Type of ice Received Blue Wet None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Media: <u>Air Can</u> Airbag Filter TDT Passive		11. Individually Certified Cans Y <u>N</u> (list which samples)
Is sufficient information available to reconcile samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12.
Do cans need to be pressurized (3C and ASTM 1946 DO NOT PRESSURIZE)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13.

Samples Received:					Pressure Gauge # <input type="checkbox"/> 10AIR34 <input checked="" type="checkbox"/> 10AIR35				
Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
07	0679	2118	-8.0	15.0					
08	0534	1106	-7.0	"					

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Nathan Bobery

Date: 4/3/19

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)

Table 3c
Pace Soil Gas Analyses
Freeway Landfill, Dump and Transfer Station Investigation QAPP

Parameter	Method	CAS #	Alternate Name	MDL (ppbv)	PRL (ppbv)	MW	MDL (ug/m3)	PRL (ug/m3)	LCS Lower	LCS Upper	DUP RPD
1,1,1-Trichloroethane	EPA TO15	71-55-6	--	0.0558	0.2	133.4047	0.309	1.11	70	135	25
1,1,2,2-Tetrachloroethane	EPA TO15	79-34-5	--	0.0419	0.1	167.8498	0.292	0.698	70	146	25
1,1,2-Trichloroethane	EPA TO15	79-00-5	--	0.0452	0.1	133.4047	0.250	0.555	70	135	25
1,1,2-Trichlorotrifluoroethane	EPA TO15	76-13-1	Freon 113	0.0724	0.2	187.3762	0.564	1.56	63	139	25
1,1-Dichloroethane	EPA TO15	75-34-3	--	0.0546	0.2	98.9596	0.225	0.823	70	134	25
1,1-Dichloroethene	EPA TO15	75-35-4	--	0.0679	0.2	96.9438	0.274	0.806	70	137	25
1,2,4-Trichlorobenzene	EPA TO15	120-82-1	--	0.493	1	181.4487	3.72	7.54	60	133	25
1,2,4-Trimethylbenzene	EPA TO15	95-63-6	--	0.0904	0.2	120.1938	0.452	0.999	70	137	25
1,2-Dibromoethane (EDB)	EPA TO15	106-93-4	--	0.0468	0.1	187.8616	0.366	0.781	70	140	25
1,2-Dichlorobenzene	EPA TO15	95-50-1	--	0.0814	0.2	147.0036	0.498	1.22	70	137	25
1,2-Dichloroethane	EPA TO15	107-06-2	--	0.0365	0.1	98.9596	0.150	0.411	70	136	25
1,2-Dichloropropane	EPA TO15	78-87-5	--	0.0490	0.2	112.9864	0.230	0.939	70	136	25
1,3,5-Trimethylbenzene	EPA TO15	108-67-8	--	0.0798	0.2	120.1938	0.399	0.999	70	133	25
1,3-Butadiene	EPA TO15	106-99-0	--	0.0567	0.2	54.0914	0.128	0.450	64	141	25
1,3-Dichlorobenzene	EPA TO15	541-73-1	--	0.0951	0.2	147.0036	0.581	1.22	70	137	25
1,4-Dichlorobenzene	EPA TO15	106-46-7	--	0.164	0.5	147.0036	1.00	3.06	70	134	25
2-Butanone (MEK)	EPA TO15	78-93-3	Methyl Ethyl Ketone	0.123	1	72.1057	0.369	3.00	65	143	25
2-Hexanone	EPA TO15	591-78-6	Methyl Butyl Ketone	0.179	1	100.1589	0.745	4.16	60	148	25
2-Propanol	EPA TO15	67-63-0	isopropyl alcohol	0.279	1	60.1	0.697	2.50	65	135	25
4-Ethyltoluene	EPA TO15	622-96-8	--	0.114	0.5	120.1938	0.570	2.50	70	132	25
4-Methyl-2-pentanone (MIBK)	EPA TO15	108-10-1	Methy Isobutyl Ketone	0.124	1	100.1602	0.518	4.16	70	135	25
Acetone	EPA TO15	67-64-1	--	0.499	1	58.0798	1.21	2.41	59	132	25
Benzene	EPA TO15	71-43-2	--	0.0471	0.1	78.1134	0.153	0.325	70	134	25
Benzyl chloride	EPA TO15	100-44-7	--	0.228	0.5	126.58	1.20	2.63	56	150	25
Bromodichloromethane	EPA TO15	75-27-4	--	0.0537	0.2	163.8289	0.366	1.36	70	142	25
Bromoform	EPA TO15	75-25-2	--	0.135	0.5	252.7309	1.42	5.25	69	150	25
Bromomethane	EPA TO15	74-83-9	--	0.0575	0.2	94.9387	0.227	0.789	61	141	25
Carbon disulfide	EPA TO15	75-15-0	--	0.0692	0.2	76.131	0.219	0.633	66	134	25
Carbon tetrachloride	EPA TO15	56-23-5	--	0.0671	0.2	153.823	0.429	1.28	60	145	25
Chlorobenzene	EPA TO15	108-90-7	--	0.0588	0.2	112.5585	0.275	0.936	70	130	25
Chloroethane	EPA TO15	75-00-3	--	0.0969	0.2	64.5145	0.260	0.536	65	143	25
Chloroform	EPA TO15	67-66-3	--	0.0395	0.1	119.3779	0.196	0.496	70	132	25
Chloromethane	EPA TO15	74-87-3	--	0.0742	0.2	50.4877	0.156	0.420	58	140	25
cis-1,2-Dichloroethene	EPA TO15	156-59-2	--	0.0543	0.2	96.9438	0.219	0.806	70	136	25
cis-1,3-Dichloropropene	EPA TO15	10061-01-5	--	0.0659	0.2	110.9706	0.304	0.923	70	136	25
Cyclohexane	EPA TO15	110-82-7	--	0.101	0.5	84.1608	0.353	1.75	70	133	25
Dibromochloromethane	EPA TO15	124-48-1	--	0.0830	0.2	208.2799	0.719	1.73	68	149	25
Dichlorodifluoromethane	EPA TO15	75-71-8	--	0.0584	0.2	120.9138	0.293	1.01	69	130	25
Dichlorotetrafluoroethane	EPA TO15	76-14-2	--	0.0615	0.2	170.9216	0.437	1.42	68	130	25
Ethanol	EPA TO15	64-17-5	--	0.424	1	46.07	0.812	1.92	65	146	25
Ethyl acetate	EPA TO15	141-78-6	--	0.0518	0.2	88.106	0.190	0.733	68	136	25

Table 3c
Pace Soil Gas Analyses
Freeway Landfill, Dump and Transfer Station Investigation QAPP

Ethylbenzene	EPA TO15	100-41-4	--	0.0690	0.2	106.167	0.305	0.883	70	133	25
Hexachloro-1,3-butadiene	EPA TO15	87-68-3	--	0.181	0.5	260.762	1.967	5.42	59	140	25
m&p-Xylene	EPA TO15	106-42-3	--	0.158	0.4	106.167	0.699	1.77	70	133	25
Methylene Chloride	EPA TO15	75-0902	--	0.267	1	84.9328	0.944	3.53	67	132	25
Methyl-tert-butyl ether	EPA TO15	1634-04-4	--	0.181	1	88.1492	0.663	3.66	70	132	25
Naphthalene	EPA TO15	91-20-3	--	0.248	0.5	128.1732	1.32	2.66	55	136	25
n-Heptane	EPA TO15	142-82-5	heptane	0.0913	0.2	100.2034	0.380	0.833	64	136	25
n-Hexane	EPA TO15	110-54-3	--	0.0867	0.2	86.1766	0.311	0.716	70	130	25
o-Xylene	EPA TO15	95-47-6	--	0.0780	0.2	106.167	0.344	0.883	70	132	25
Propylene	EPA TO15	115-07-1	--	0.0816	0.2	42.0804	0.143	0.350	37	150	25
Styrene	EPA TO15	100-42-5	--	0.0794	0.2	104.1512	0.344	0.866	70	139	25
Tetrachloroethene	EPA TO15	127-18-4	--	0.0455	0.1	165.834	0.314	0.689	70	133	25
Tetrahydrofuran	EPA TO15	109-99-9	--	0.0870	0.2	72.1066	0.261	0.600	62	141	25
Toluene	EPA TO15	108-88-3	--	0.0916	0.2	92.1402	0.351	0.766	70	130	25
trans-1,2-Dichloroethene	EPA TO15	156-60-5	--	0.0706	0.2	96.9438	0.285	0.806	70	132	25
trans-1,3-Dichloropropene	EPA TO15	10061-02-6	--	0.0953	0.2	110.9706	0.440	0.923	70	135	25
Trichloroethene	EPA TO15	79-01-6	--	0.0470	0.1	131.3889	0.257	0.546	70	135	25
Trichlorofluoromethane	EPA TO15	75-69-4	--	0.0641	0.2	137.3684	0.366	1.14	59	140	25
Vinyl acetate	EPA TO15	108-05-4	--	0.0754	0.2	86.0902	0.270	0.716	57	150	25
Vinyl chloride	EPA TO15	75-01-4	--	0.0485	0.1	62.4987	0.126	0.260	70	141	25
Methane (reported as %)	EPA 3C	74-82-8	--	0.94	4	--	--	--	70	130	30



Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Client: PASI-MNFLD-AIR
 Phone: 864-980-5092

Lab Project Number: 10469120
 Project Name: PRJ07786 19-01567 MPCA Freew

Lab Sample No: 10469120001
 Client Sample ID: FD-SB-07

ProjSampleNum: 10469120001
 Matrix: Air

Date Collected: 04/01/19 13:45
 Date Received: 04/01/19 16:20

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
TO-15							
1,1,1-Trichloroethane	ND	ug/m3	2.1	1.83	04/18/19 21:36	MLS 71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.3	1.83	04/18/19 21:36	MLS 79-34-5	
1,1,2-Trichloroethane	ND	ug/m3	1	1.83	04/18/19 21:36	MLS 79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.9	1.83	04/18/19 21:36	MLS 76-13-1	
1,1-Dichloroethane	ND	ug/m3	1.5	1.83	04/18/19 21:36	MLS 75-34-3	
1,1-Dichloroethene	ND	ug/m3	1.5	1.83	04/18/19 21:36	MLS 75-35-4	
1,2,4-Trichlorobenzene	ND	ug/m3	13.6	1.83	04/18/19 21:36	MLS 120-82-1	
1,2,4-Trimethylbenzene	7	ug/m3	1.8	1.83	04/18/19 21:36	MLS 95-63-6	
1,2-Dibromoethane (EDB)	ND	ug/m3	1.4	1.83	04/18/19 21:36	MLS 106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.3	1.83	04/18/19 21:36	MLS 95-50-1	
1,2-Dichloroethane	ND	ug/m3	0.74	1.83	04/18/19 21:36	MLS 107-06-2	
1,2-Dichloropropane	ND	ug/m3	1.7	1.83	04/18/19 21:36	MLS 78-87-5	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.83	04/18/19 21:36	MLS 108-67-8	
1,3-Butadiene	ND	ug/m3	0.83	1.83	04/18/19 21:36	MLS 106-99-0	
1,3-Dichlorobenzene	5.1	ug/m3	2.3	1.83	04/18/19 21:36	MLS 541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	5.6	1.83	04/18/19 21:36	MLS 106-46-7	
2-Butanone (MEK)	16.2	ug/m3	5.4	1.83	04/18/19 21:36	MLS 78-93-3	
2-Hexanone	ND	ug/m3	7.5	1.83	04/18/19 21:36	MLS 591-78-6	
2-Propanol	6.7	ug/m3	4.5	1.83	04/18/19 21:36	MLS 67-63-0	
4-Ethyltoluene	ND	ug/m3	4.6	1.83	04/18/19 21:36	MLS 622-96-8	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	7.5	1.83	04/18/19 21:36	MLS 108-10-1	
Acetone	299	ug/m3	4.3	1.83	04/18/19 21:36	MLS 67-64-1	
Benzene	1.9	ug/m3	0.58	1.83	04/18/19 21:36	MLS 71-43-2	
Benzyl chloride	ND	ug/m3	4.8	1.83	04/18/19 21:36	MLS 100-44-7	
Bromodichloromethane	ND	ug/m3	2.5	1.83	04/18/19 21:36	MLS 75-27-4	
Bromoform	ND	ug/m3	9.7	1.83	04/18/19 21:36	MLS 75-25-2	
Bromomethane	ND	ug/m3	1.5	1.83	04/18/19 21:36	MLS 74-83-9	
Carbon disulfide	ND	ug/m3	1.2	1.83	04/18/19 21:36	MLS 75-15-0	
Carbon tetrachloride	ND	ug/m3	2.4	1.83	04/18/19 21:36	MLS 56-23-5	
Chlorobenzene	ND	ug/m3	1.7	1.83	04/18/19 21:36	MLS 108-90-7	
Chloroethane	ND	ug/m3	0.99	1.83	04/18/19 21:36	MLS 75-00-3	
Chloroform	ND	ug/m3	0.89	1.83	04/18/19 21:36	MLS 67-66-3	
Chloromethane	ND	ug/m3	0.78	1.83	04/18/19 21:36	MLS 74-87-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.83	04/18/19 21:36	MLS 156-59-2	
cis-1,3-Dichloropropene	ND	ug/m3	1.7	1.83	04/18/19 21:36	MLS 10061-01-5	
Cyclohexane	ND	ug/m3	3.2	1.83	04/18/19 21:36	MLS 110-82-7	
Dibromochloromethane	ND	ug/m3	3.2	1.83	04/18/19 21:36	MLS 124-48-1	
Dichlorodifluoromethane	10.1	ug/m3	1.9	1.83	04/18/19 21:36	MLS 75-71-8	

SUPPLEMENTAL REPORT

Units Conversion Request



Pace Analytical Services, Inc.
 1700 Elm Street – Suite 200
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 Phone: 612.607.1700
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ANALYTICAL RESULTS

Client: PASI-MNFLD-AIR
 Phone: 864-980-5092

Lab Project Number: 10469120
 Project Name: PRJ07786 19-01567 MPCA Freew

Lab Sample No: 10469120001
 Client Sample ID: FD-SB-07

ProjSampleNum: 10469120001
 Matrix: Air

Date Collected: 04/01/19 13:45
 Date Received: 04/01/19 16:20

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
Dichlorotetrafluoroethane	15.6	ug/m3	2.6	1.83	04/18/19 21:36	MLS 76-14-2	
Ethanol	33.5	ug/m3	3.4	1.83	04/18/19 21:36	MLS 64-17-5	
Ethyl acetate	ND	ug/m3	1.4	1.83	04/18/19 21:36	MLS 141-78-6	
Ethylbenzene	4.4	ug/m3	1.6	1.83	04/18/19 21:36	MLS 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/m3	10	1.83	04/18/19 21:36	MLS 87-68-3	
m&p-Xylene	17.7	ug/m3	3.2	1.83	04/18/19 21:36	MLS 179601-23-1	
Methylene Chloride	ND	ug/m3	6.4	1.83	04/18/19 21:36	MLS 75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	6.6	1.83	04/18/19 21:36	MLS 1634-04-4	
Naphthalene	ND	ug/m3	4.9	1.83	04/18/19 21:36	MLS 91-20-3	
n-Heptane	3.5	ug/m3	1.5	1.83	04/18/19 21:36	MLS 142-82-5	
n-Hexane	3.4	ug/m3	1.3	1.83	04/18/19 21:36	MLS 110-54-3	
o-Xylene	5.7	ug/m3	1.6	1.83	04/18/19 21:36	MLS 95-47-6	
Propylene	10.8	ug/m3	0.65	1.83	04/18/19 21:36	MLS 115-07-1	
Styrene	ND	ug/m3	1.6	1.83	04/18/19 21:36	MLS 100-42-5	
Tetrachloroethene	18.6	ug/m3	1.2	1.83	04/18/19 21:36	MLS 127-18-4	
Tetrahydrofuran	ND	ug/m3	1.1	1.83	04/18/19 21:36	MLS 109-99-9	
Toluene	16.5	ug/m3	1.4	1.83	04/18/19 21:36	MLS 108-88-3	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.83	04/18/19 21:36	MLS 156-60-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.7	1.83	04/18/19 21:36	MLS 10061-02-6	
Trichloroethene	ND	ug/m3	0.98	1.83	04/18/19 21:36	MLS 79-01-6	
Trichlorofluoromethane	11.4	ug/m3	2.1	1.83	04/18/19 21:36	MLS 75-69-4	
Vinyl acetate	ND	ug/m3	1.3	1.83	04/18/19 21:36	MLS 108-05-4	
Vinyl chloride	ND	ug/m3	0.47	1.83	04/18/19 21:36	MLS 75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



Pace Analytical Services, Inc.
 1700 Elm Street – Suite 200
 Minneapolis, MN 55414
 Phone: 612.607.1700
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ANALYTICAL RESULTS

Client: PASI-MNFLD-AIR
 Phone: 864-980-5092

Lab Project Number: 10469120
 Project Name: PRJ07786 19-01567 MPCA Freew

Lab Sample No: 10469120002
 Client Sample ID: FD-SB-08

ProjSampleNum: 10469120002
 Matrix: Air

Date Collected: 04/01/19 15:23
 Date Received: 04/01/19 16:20

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.9	1.75	04/18/19 22:03	MLS 71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.3	1.75	04/18/19 22:03	MLS 79-34-5	
1,1,2-Trichloroethane	ND	ug/m3	1	1.75	04/18/19 22:03	MLS 79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.7	1.75	04/18/19 22:03	MLS 76-13-1	
1,1-Dichloroethane	ND	ug/m3	1.4	1.75	04/18/19 22:03	MLS 75-34-3	
1,1-Dichloroethene	ND	ug/m3	1.4	1.75	04/18/19 22:03	MLS 75-35-4	
1,2,4-Trichlorobenzene	ND	ug/m3	13.6	1.75	04/18/19 22:03	MLS 120-82-1	
1,2,4-Trimethylbenzene	7.5	ug/m3	1.7	1.75	04/18/19 22:03	MLS 95-63-6	
1,2-Dibromoethane (EDB)	ND	ug/m3	1.4	1.75	04/18/19 22:03	MLS 106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.1	1.75	04/18/19 22:03	MLS 95-50-1	
1,2-Dichloroethane	ND	ug/m3	0.74	1.75	04/18/19 22:03	MLS 107-06-2	
1,2-Dichloropropane	ND	ug/m3	1.6	1.75	04/18/19 22:03	MLS 78-87-5	
1,3,5-Trimethylbenzene	2.1	ug/m3	1.7	1.75	04/18/19 22:03	MLS 108-67-8	
1,3-Butadiene	ND	ug/m3	0.79	1.75	04/18/19 22:03	MLS 106-99-0	
1,3-Dichlorobenzene	3.2	ug/m3	2.1	1.75	04/18/19 22:03	MLS 541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	5.4	1.75	04/18/19 22:03	MLS 106-46-7	
2-Butanone (MEK)	ND	ug/m3	5.4	1.75	04/18/19 22:03	MLS 78-93-3	
2-Hexanone	ND	ug/m3	7.5	1.75	04/18/19 22:03	MLS 591-78-6	
2-Propanol	ND	ug/m3	4.5	1.75	04/18/19 22:03	MLS 67-63-0	
4-Ethyltoluene	ND	ug/m3	4.4	1.75	04/18/19 22:03	MLS 622-96-8	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	7.5	1.75	04/18/19 22:03	MLS 108-10-1	
Acetone	159	ug/m3	4.3	1.75	04/18/19 22:03	MLS 67-64-1	
Benzene	5.2	ug/m3	0.58	1.75	04/18/19 22:03	MLS 71-43-2	
Benzyl chloride	ND	ug/m3	4.6	1.75	04/18/19 22:03	MLS 100-44-7	
Bromodichloromethane	ND	ug/m3	2.4	1.75	04/18/19 22:03	MLS 75-27-4	
Bromoform	ND	ug/m3	9.2	1.75	04/18/19 22:03	MLS 75-25-2	
Bromomethane	ND	ug/m3	1.4	1.75	04/18/19 22:03	MLS 74-83-9	
Carbon disulfide	34.5	ug/m3	1.1	1.75	04/18/19 22:03	MLS 75-15-0	
Carbon tetrachloride	ND	ug/m3	2.2	1.75	04/18/19 22:03	MLS 56-23-5	
Chlorobenzene	ND	ug/m3	1.6	1.75	04/18/19 22:03	MLS 108-90-7	
Chloroethane	ND	ug/m3	0.94	1.75	04/18/19 22:03	MLS 75-00-3	
Chloroform	ND	ug/m3	0.89	1.75	04/18/19 22:03	MLS 67-66-3	
Chloromethane	6.1	ug/m3	0.73	1.75	04/18/19 22:03	MLS 74-87-3	
cis-1,2-Dichloroethene	16.1	ug/m3	1.4	1.75	04/18/19 22:03	MLS 156-59-2	
cis-1,3-Dichloropropene	ND	ug/m3	1.6	1.75	04/18/19 22:03	MLS 10061-01-5	
Cyclohexane	ND	ug/m3	3.1	1.75	04/18/19 22:03	MLS 110-82-7	
Dibromochloromethane	ND	ug/m3	3	1.75	04/18/19 22:03	MLS 124-48-1	
Dichlorodifluoromethane	65.9	ug/m3	1.8	1.75	04/18/19 22:03	MLS 75-71-8	

SUPPLEMENTAL REPORT

Units Conversion Request



Pace Analytical Services, Inc.
 1700 Elm Street – Suite 200
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 Phone: 612.607.1700
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ANALYTICAL RESULTS

Client: PASI-MNFLD-AIR
 Phone: 864-980-5092

Lab Project Number: 10469120
 Project Name: PRJ07786 19-01567 MPCA Freew

Lab Sample No: 10469120002
 Client Sample ID: FD-SB-08

ProjSampleNum: 10469120002
 Matrix: Air

Date Collected: 04/01/19 15:23
 Date Received: 04/01/19 16:20

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air							
Dichlorotetrafluoroethane	76.7	ug/m3	2.5	1.75	04/18/19 22:03	MLS 76-14-2	
Ethanol	7.1	ug/m3	3.4	1.75	04/18/19 22:03	MLS 64-17-5	
Ethyl acetate	ND	ug/m3	1.3	1.75	04/18/19 22:03	MLS 141-78-6	
Ethylbenzene	4.4	ug/m3	1.5	1.75	04/18/19 22:03	MLS 100-41-4	
Hexachloro-1,3-butadiene	ND	ug/m3	9.5	1.75	04/18/19 22:03	MLS 87-68-3	
m&p-Xylene	15.9	ug/m3	3.1	1.75	04/18/19 22:03	MLS 179601-23-1	
Methylene Chloride	ND	ug/m3	6.4	1.75	04/18/19 22:03	MLS 75-09-2	
Methyl-tert-butyl ether	ND	ug/m3	6.6	1.75	04/18/19 22:03	MLS 1634-04-4	
Naphthalene	ND	ug/m3	4.7	1.75	04/18/19 22:03	MLS 91-20-3	
n-Heptane	66.2	ug/m3	1.5	1.75	04/18/19 22:03	MLS 142-82-5	
n-Hexane	180	ug/m3	1.3	1.75	04/18/19 22:03	MLS 110-54-3	
o-Xylene	5.7	ug/m3	1.5	1.75	04/18/19 22:03	MLS 95-47-6	
Propylene	310	ug/m3	0.61	1.75	04/18/19 22:03	MLS 115-07-1	E
Styrene	ND	ug/m3	1.5	1.75	04/18/19 22:03	MLS 100-42-5	
Tetrachloroethene	35.2	ug/m3	1.2	1.75	04/18/19 22:03	MLS 127-18-4	
Tetrahydrofuran	ND	ug/m3	1	1.75	04/18/19 22:03	MLS 109-99-9	
Toluene	16.9	ug/m3	1.3	1.75	04/18/19 22:03	MLS 108-88-3	
trans-1,2-Dichloroethene	ND	ug/m3	1.4	1.75	04/18/19 22:03	MLS 156-60-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.6	1.75	04/18/19 22:03	MLS 10061-02-6	
Trichloroethene	35.5	ug/m3	0.98	1.75	04/18/19 22:03	MLS 79-01-6	
Trichlorofluoromethane	ND	ug/m3	2	1.75	04/18/19 22:03	MLS 75-69-4	
Vinyl acetate	ND	ug/m3	1.3	1.75	04/18/19 22:03	MLS 108-05-4	
Vinyl chloride	1.2	ug/m3	0.47	1.75	04/18/19 22:03	MLS 75-01-4	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



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Phone: 612.607.1700
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ANALYTICAL RESULTS

Client: PASI-MNFLD-AIR
Phone: 864-980-5092

Lab Project Number: 10469120
Project Name: PRJ07786 19-01567 MPCA Freew

PARAMETER FOOTNOTES

ND Not detected at or above adjusted reporting limit

NC Not Calculable

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

[E] Analyte concentration exceeded the calibration range. The reported result is estimated.

SUPPLEMENTAL REPORT

Units Conversion Request