Minnesota Pollution Control Agency
520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300
800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

**Solid Waste Management Facility Permit** **Permit:** SW-399
Shamrock Environmental Landfill Action: PER004

In accordance with Minn. Stat. chs. 115, 115A, and 116, and Minn. Rules chs. 7000, 7001, and 7035, the Minnesota Pollution Control Agency (MPCA) hereby issues this permit and authorizes the permittee(s) listed on the following page to construct and operate the Shamrock Environmental Landfill, SW-399 under the conditions set forth in this permit.

The facility consists of 59 acres located in: Township 49 N, Range 17 W, Section 25, Carlton County, in the MPCA Duluth Region. The facility includes the following waste activity area(s):

| | |
|---|---|
| Demolition Debris Disposal Area | DD001 |
| Industrial Waste Disposal Area | IL001 |
| Solid Waste Recycling Area | RE001 |
| Solid Waste Storage Area | ST001 |

The determination to issue this permit is discretionary with the MPCA and was made subsequent to MPCA staff review of the permit application. The term Commissioner, as used in this permit, refers to the MPCA Commissioner or MPCA personnel who have been delegated explicit authority by the Commissioner. Other terms used in this permit are defined in Minnesota Statutes, the MPCA Solid Waste Management Rules, or specifically defined in this permit.

Permit Issuance Date: 12/21/2010
Permit Expiration Date: 12/21/2015
Permit Modified Date:

Minnesota Pollution Control Agency

Ainars Z. Silis
Supervisor, Land Permits Unit
Land & Air Compliance Section
Industrial Division

**Solid Waste Management Facility Permit** **Permit:** SW-399

Shamrock Environmental Landfill Action: PER004

The following permittee(s) are authorized to construct and operate the Shamrock Environmental Landfill, SW-399 under the conditions set forth in this permit.

**Permittee Activity Owner, Land Owner and Operator:**
Shamrock Landfill, Inc

**Address:**
PO Box 338
Esko, MN 55733-0338

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# 1. TOTAL FACILITY

## 1.1 General

### 1.1.1 Definitions

1.1.2 "Commissioner" means the Commissioner of the Minnesota Pollution Control Agency, or any individual who is authorized to review and approve submittals on behalf of the Commissioner.

1.1.3 "Permittee" means the landowner, facility owner(s), and facility operator(s).

1.1.4 "Facility" has the meaning given in Minn. R. 7035.0300, subp. 37.

1.1.5 "Waste Activity" means the storage, processing, transfer, utilization, treatment, or disposal of solid waste and waste by-products.

1.1.6 "Waste Activity Area" means the land, structures, monitoring devices, and other appurtenances and improvements on the land associated with a waste activity.

1.1.7 "Airspace" means the volume for filling with waste, considering all solid waste, daily, intermediate, intermittent and final cover materials, and design restrictions.

1.1.8 "Design Capacity" means the maximum estimated potential airspace to be occupied by a land disposal facility, including all cover systems. "Design capacity" is used only for planning purposes and is distinct from permitted capacity. "Design capacity" is an estimate dependent on the existing landholdings of the Permittee, existing regulations that affect development and design (including required buffer areas, stormwater management requirements, and slopes), engineering designs, and site developmental plans. It includes all areas that have been completed, all active areas, and all proposed areas based on the largest design footprint shown on the plan sheets. It is the volume that, upon final closure of the facility, would be occupied by waste (along with all associated materials including cover) measured from the base of the fill to the top of the proposed final cover.

1.1.9 "Permitted Capacity" means the total airspace volume in cubic yards allowed for disposal at the facility under the most recently issued permit. It includes airspace already filled by previous disposal activities, before the start of the permit; estimated fill volumes to be used during the five-year term of the current permit, including cover systems; and may also include estimated fill volumes and cover systems that would be used during an additional "follow-on" period extending up to five years past the current permit's expiration date, provided that the Permittee has submitted detailed engineering plans for the use and closure of that follow-on disposal space.

1.1.10 "Merchant Landfill" means a land disposal facility that accepts solid waste for disposal from any entity that is willing to pay its tipping fee, and has wastes that meet its acceptance criteria. Groundwater monitoring, waste screening and a liner and leachate management system are required at this type of facility.

1.1.11 "ACM" means Asbestos-Containing Material.

### 1.1.12 Waste Activities

1.1.13 The Facility waste activities authorized by this permit are limited to those activities described in the Waste Capacity Table of this permit.

### 1.1.14 Permit Compliance

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## TOTAL FACILITY

### General

1.1.15 The Permittee shall keep the status of the permit current and up-to-date.

1.1.16 The Permittee shall perform the actions or conduct the activity authorized by the permit in accordance with the plans and specifications approved by the agency, in accordance with all state and federal statutes, rules and regulations, and in compliance with the conditions of the permit.

**1.1.17 Location**

1.1.18 The Facility authorized by this permit occupies approximately 59 acres and is located in Section 25, Township 49 North, Range 17 West in Carlton County, Minnesota.
The Facility is located in the Southwest corner of the intersection of Interstate 35 and County Road 45 in the city of Cloquet.

**1.1.19 Facility History**

1.1.20 The existing demolition debris landfill operates under MPCA permit No. SW-399, which expired in May 2001. A permit reissuance application was submitted approximately six months before permit expiration; therefore, the site has been allowed to continue to operate under the conditions of the expired permit.

1.1.21 A revised permit application was submitted by Ulland Brothers in April 2008 requesting a capacity increase. The re-permitting process included increased groundwater monitoring which Ulland chose not to pursue. Shamrock Environmental, LLC (Shamrock) signed a purchase agreement for the landfill in November 2009. The permit was reissued to Shamrock Environmental LLC and Dem-Con Cloquet, LLC in December 2010. In January 2012, the permit was modified to change the operator from Dem-Con Cloquet, LLC to Shamrock Landfill, Inc. This permit modification approves a change in owner from Shamrock Environmental LLC to Shamrock Landfill, Inc.

1.1.22 Shamrock has proposed to expand the ultimate capacity of the landfill. With the expansion, Shamrock will install a composite liner and leachate collection system. The existing waste material will be relocated onto the liner system. The new Design Capacity will be 3,544,000 cubic yards. The operations at the facility will also be expanded to include C & D recycling.

**1.1.23 Facility Description**

1.1.24 This permit authorizes the construction and development of cells 1, 2, 3, and 4. The permitted capacity will be 1,311,000 cubic yards for co-disposal of industrial and construction/demolition debris. The waste activity area is designated as IL001 under this permit. The existing waste area is designated as DD001. This area is where future lined cells 7, 8, and 9 will be constructed.

1.1.25 The Facility accepts metals, appliances, electronics, cardboard, wood and tires for temporary storage prior to recycling. This waste activity is designated as RE001 under this permit.

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## TOTAL FACILITY

### General

1.1.26 The Facility accepts concrete, asphalt pavement and asphalt shingles for long-term storage prior to recycling. This waste activity is designated as ST001 under this permit.

**1.1.27 Required Notices**

1.1.28 The Permittee must notify the MPCA before transferring ownership or operation of a solid waste management facility during its operating life or during postclosure care period in accordance with Minn. R. 7035.2535, subp. 2.

## 1.2 Permit Documents

**1.2.1 Approved Plans**

1.2.2 The approved plans are incorporated into this permit. In addition, the approved versions of all pending submittals required by this permit are incorporated into this permit. In all cases where the permit and the plans or submittal differ, the requirements of the permit shall govern over a condition in the plan or submittal. The approval by the Commissioner of the plans and specifications shall not release the Permittee from any present or subsequent requirements of statutes, rules, regulations, or ordinances.

**1.2.3 Permit Application**

1.2.4 The permit application approved by this permit prepared by Wenck Associates, Inc. was signed and dated June 10, 2010, and revised July 22, 2010, to permit the facility as a merchant industrial landfill.

**1.2.5 Engineering Documents**

1.2.6 The engineering documents approved by this permit include the following:
==> Facility Design Report
==> Technical Specifications
==> Closure, Post Closure, and Contingency Action Plan
==> Operations and Maintenance Plan
==> Engineering Plans/Drawings Sheets
==> Industrial Solid Waste Management Plan

**1.2.7 Hydrogeologic Evaluation Documents**

1.2.8 The hydrogeologic evaluation documents approved by this permit include:
==>Phase I - IV Hydrogeologic Investigation Reports 2005 - 2010

**1.2.9 Revised Plans**

1.2.10 Any revised plans shall be submitted for approval by the commissioner. The permittee shall obtain approval from the commissioner on all revised engineering or hydrogeologic plans prior to construction of the affected portion of the facility.

## 1.3 Design and Construction Criteria

**1.3.1 Location Standards**

1.3.2 The Permittee may not locate, establish, or construct a solid waste management facility in areas designated in Minn. R. 7035.2555.

**1.3.3 Groundwater Quality, Surface Water Quality, Air Quality, and Soil Protection**

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## TOTAL FACILITY

### Design and Construction Criteria

1.3.4 The Permittee must locate, design, and construct the facility to prevent pollution of groundwater and surface water, minimize the contamination of soils from solid waste, and maintain the facility in conformance with MPCA air pollution control rules in accordance with Minn. R. 7035.2565.

**1.3.5 Storage Standards**

1.3.6 A waste activity area where solid waste is stored must be designed in accordance with Minn. R. 7035.2855 except as provided in, subp. 1 and Minn. R. 7035.2525, subp. 2.

**1.3.7 Stormwater Management System**

1.3.8 The Permittee shall construct and certify the stormwater management system for the facility with Best Management Practices to manage stormwater discharge in accordance with the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit for the discharge of stormwater associated with an industrial activity and/or a construction activity.

1.3.9 The Permittee must design and construct a run-on control system to prevent flow onto the waste activity area and a run-off control system to collect and control flow from the waste activity area resulting from a 24-hour, 25-year storm.

**1.3.10 Water Monitoring Systems**

1.3.11 The Permittee must design any proposed future expansions or modifications of the water monitoring system in accordance with Minn. R. 7035.2815, subp. 10.

**1.3.12 Construction Plan**

1.3.13 The Permittee must submit a construction plan to the Commissioner for approval prior to construction if the construction plan proposes any major revisions to the approved design.

**1.3.14 Construction Notification**

1.3.15 Unless the Commissioner orders otherwise, the Permittee shall notify appropriate MPCA staff at least ten (10) working days in advance of construction of the facility or any component thereof.

**1.3.16 Construction Certification**

1.3.17 The permittee must submit a construction certification for approval by the Commissioner in accordance with Minn. R. 7035.2610. A facility waste activity or any new design feature must not be placed into operation until the construction certification has been approved by the Commissioner.

**1.3.18 Alterations and Additions**

1.3.19 The Permittee shall not make any major alterations or additions to the facility that would materially alter the manner in which waste is managed without first obtaining the written consent of the Commissioner.

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**TOTAL FACILITY**

## 1.4 Operating and Maintenance Criteria

### 1.4.1 Trained / Certified Operator

1.4.2 The Permittee must ensure that the required number of operators, trained or certified under Minn. R. 7035.2545 and Minn. R. 7048.0100 to 7048.1300, are present and on duty at all times that the facility is open for the purpose of receiving waste.

### 1.4.3 Personnel Training

1.4.4 The Permittee must establish and maintain a personnel training program consisting of classroom instruction and on-the-job training. The program must address the requirements identified in Minn. R. 7035.2545, subp. 3, and must include the specific training necessary to perform the tasks associated with each solid waste management area within the facility. The Permittee must maintain a record of all personnel training and submit the dates of training in the annual report.

### 1.4.5 Operations Manual

1.4.6 The Permittee must prepare and maintain an operations and maintenance manual for the facility. The manual must include operations and maintenance criteria that are specific to each solid waste management area within the facility.

### 1.4.7 Security

1.4.8 The Permittee must prevent unauthorized entry onto the facility in accordance with Minn. R. 7035.2535, subp. 3. In addition, the Permittee shall post a sign at the entrance of the facility and each waste activity area showing the facility name, MPCA permit number, hours of operation, the acceptable waste, and any other relevant information.

### 1.4.9 Roads

1.4.10 The Permittee must construct and maintain all-weather approach and access roads to all waste activity areas within the facility.

### 1.4.11 Storage of Solid Waste

1.4.12 The Permittee must provide satisfactory storage for all solid waste accumulated at the facility in accordance with Minn. R. 7035.0700 and Minn. R. 7035.2855.

### 1.4.13 Nuisance Conditions

1.4.14 The Permittee must keep the facility grounds and immediately adjacent property free of litter stemming from the facility operations. The facility grounds and adjacent property shall be inspected and cleared of all litter at least once per month.

1.4.15 The Permittee must manage the facility to be in compliance with Minn. R. 7011.0150 to prevent particulate matter from becoming airborne.

1.4.16 The Permittee must manage all free liquids that have come in contact with solid waste so that the liquids are not discharged as storm water.

1.4.17 The Permittee must provide effective measures to control flies, rodents and other insects or vermin as necessary.

## TOTAL FACILITY

### Operating and Maintenance Criteria

**1.4.18 Collection and Transportation of Solid Waste**

1.4.19 The Permittee must provide for the proper collection and transportation of solid waste in accordance with Minn. R. 7035.0800.

**1.4.20 Unacceptable Wastes**

1.4.21 The Permittee must not accept the wastes identified in Minn. R. 7035.2535, subp. 1 for treatment, storage, processing, or disposal.

**1.4.22 Industrial Solid Waste**

1.4.23 The Permittee must manage industrial solid waste for each waste activity as specified in the approved plan in accordance with Minn. R. 7035.2535, subp. 5. The permittee must include the information required by Minn. R. 7035.2575, subp. 2, items B and C in the annual report for each industrial waste accepted at the facility.

**1.4.24 Household Hazardous Waste**

1.4.25 The Permittee is not authorized to accept household hazardous waste at this facility. Any household hazardous waste separated from the incoming waste stream at the facility shall be transported to a permitted Household Hazardous Waste Management Facility to be stored, managed, and disposed of in accordance with the MPCA's Hazardous Waste Management Rules.

**1.4.26 Stormwater Management System**

1.4.27 The Permittee must operate and maintain the stormwater management system for the facility with Best Management Practices to manage stormwater discharges in accordance with the NPDES/SDS Permit for the discharge of stormwater associated with an industrial activity and/or a construction activity.

**1.4.28 Groundwater Quality, Surface Water Quality, Air Quality, and Soil Protection**

1.4.29 The Permittee must operate and maintain the facility to prevent pollution of groundwater and surface water, minimize the contamination of soils from solid waste, and maintain the facility in conformance with MPCA air pollution control rules in accordance with Minn. R. 7035.2565.

**1.4.30 Emergency Equipment**

1.4.31 The Permittee must provide and maintain adequate emergency equipment at the facility to control accidental fires, and make arrangements with the local fire protection agency to immediately acquire their services when needed. The Permittee must also provide adequate communications equipment for emergency purposes.

**1.4.32 Operating Record**

1.4.33 The Permittee must keep a written operating record at the facility in accordance with Minn. R. 7035.2575.

**TOTAL FACILITY**

### Operating and Maintenance Criteria

**1.4.34 Self Inspections**

1.4.35 The Permittee must inspect the Facility in accordance with the schedule and items approved by the Commissioner as defined by Minn. R. 7035.2535, subp. 4. The Permittee must record inspections in an inspection log or summary and must keep these records for at least five years.

**1.4.36 Emergency Procedures Manual**

1.4.37 The Permittee must maintain a copy of the approved emergency procedures manual at the Facility for facility personnel to use in time of emergency.

**1.4.38 Contingency Action Plan**

1.4.39 The Permittee must maintain a copy of the approved contingency action plan at the Facility.

**1.4.40 Closure Plan**

1.4.41 The Permittee must maintain a copy of the approved facility closure plan, and all revisions to the plan, at the Facility until closure is completed and certified in accordance with Minn. R. 7035.2635.

**1.4.42 Postclosure Plan**

1.4.43 The Permittee must maintain a copy of the approved postclosure care plan, and all subsequent amendments, until the postclosure care period begins. During the postclosure care period, the plan must be kept by the contact person identified in Minn. R. 7035.2645, subp. 2, item C.

**1.4.44 Water Monitoring System**

1.4.45 The Permittee must maintain a water monitoring system in compliance with Minn. R. 7035.2815, subp. 10. Due to its configuration, this Facility does not maintain a separate groundwater monitoring system for each waste activity area. Therefore, the requirements of the groundwater monitoring system shall be described in this section of the permit.

## 1.5 Monitoring Criteria

**1.5.1 Compliance Boundary**

1.5.2 The Permittee must establish compliance boundaries according to Minn. R. 7035.2815, subp. 4, items A through E.

**1.5.3 Groundwater Performance Standards**

1.5.4 The Permittee must design, construct, operate, and maintain the disposal area to achieve compliance with the intervention limits set forth in the Limits Table(s) of this permit. These limits are based upon the Minnesota Department of Health, Health Risk Limits (HRL), Health Based Values (HBV), Risk Assessment Advice (RAA), and Maximum Contaminant Level (MCL) and replace the standards listed in Minn. R. 7035.2815, subp. 4, item F, as provided for in Minn. R. 7035.2815, subp. 4, item H.

**TOTAL FACILITY**

### Monitoring Criteria

**1.5.5 Exceedence of Intervention Limit**

1.5.6 If an intervention limit established in this permit is exceeded, the Permittee must take the actions listed in Minn. R. 7035.2815, subp. 4, item G.

**1.5.7 Groundwater Quality Sampling and Analysis**

1.5.8 Groundwater quality sampling and analysis must be conducted in accordance with Minn. R. 7035.2815 subp. 14 and must include the monitoring stations identified in the Limits Table(s) of this permit. Sampling must be conducted according to the schedule shown in the Limits Table(s) of this permit.

**1.5.9 Leachate Quality Sampling and Analysis**

1.5.10 Leachate quality sampling and analysis must be conducted in accordance with the approved Leachate Management Plan. Leachate shall be sampled in accordance with the Limits Table of this permit. Leachate sampling results shall be submitted with the Routine Monitoring Report as required by this permit.

**1.5.11 Surface Water Quality Sampling and Analysis**

1.5.12 Surface Water quality sampling and analysis must be conducted in accordance with Minn. R. 7035.2815 subp. 14 and must include the monitoring stations identified in the Limits Table(s) of this permit. Sampling must be conducted according to the schedule shown in the Limits Table(s) of this permit.

**1.5.13 Background Water Quality Monitoring**

1.5.14 The Permittee must determine the initial water quality in new monitoring points and monitoring systems, and perform background monitoring in accordance with Minn. R. 7035.2815, subp. 14, item E.

**1.5.15 Monitoring Protocol**

1.5.16 The Permittee must develop and keep current a written monitoring protocol for the disposal area according to Minn. R. 7035.2815, subp. 14, item G and must ensure the protocol is followed during sampling and sample analysis.

## 1.6 Reporting Criteria

**1.6.1 Annual Facility Report**

1.6.2 The Permittee shall submit two copies an annual facility report for the preceding calendar year in accordance with Minn. R. 7035.2585, 7035.2825, subp. 9, item K, 7035.2836, subp. 5, item K, 7035.2836, subp.3, item G, and 7035.2845, subp. 4, item C. The report must include summary evaluation reports and specific annual reporting requirements. The Permittee shall submit the report to the Commissioner according to the schedule in the Required Actions and Submittals Table(s) of this permit.

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**TOTAL FACILITY**

### Reporting Criteria

**1.6.3 Routine Monitoring Reporting**

1.6.4 The permittee shall submit routine monitoring results to the Commissioner by the dates specified in the Required Actions and Submittals Table(s) of this permit. The monitoring results must be accompanied by information sufficient to establish the reliability, precision, and accuracy of the reported values, including the requirements of Minn. R. 7035.2815, subp. 14, item P. This report shall contain groundwater sampling results, leachate sampling results, groundwater elevation data.

**1.6.5 Annual Monitoring Evaluation**

1.6.6 The Permittee shall submit an annual water monitoring evaluation report in accordance with Minn. R. 7035.2585 and 7035.2815, subp. 14, item Q. The Permittee shall submit the report to the Commissioner, as part of the annual facility report, according to the schedule in the Required Actions and Submittals Table(s) of this permit.

**1.6.7 Electronic Data Reporting**

1.6.8 The Permittee shall submit an electronic copy of all water quality monitoring data for each monitoring event. This data is to include groundwater sampling data, leachate sampling data, and groundwater elevation data. Electronic data must be submitted in the format outlined in the MPCA Solid Waste Program Electronic Laboratory Data Submittal Manual which can be found on the MPCA Solid Waste Permitting webpage at http://www.pca.state.mn.us/waste/swpermits.html#data. The schedule for submitting electronic copies of monitoring data shall follow the schedule outlined for monitoring reports as identified in the Required Actions and Submittals Table(s) of this permit.

1.6.9 The Permittee must submit a paper copy of all water monitoring reports as outlined in the Required Actions and Submittals Table(s) of this permit unless otherwise specifically directed by the Commissioner.

**1.6.10 Monitoring Station Location Information**

1.6.11 The Permittee must collect location and elevation data for all monitoring points. Location data must be submitted in latitude/longitude coordinates and the datum used must be identified. Elevation data for monitoring wells must include the elevation of the riser pipe and ground surface. The depth of wells from the riser pipe must also be identified. If existing data is being reported the surveying method and datum used to collect this information must be identified.

## 1.7 Contingency Action Criteria

**1.7.1 Contingency Action Plan**

1.7.2 The Permittee must address all facility waste activities as specified in the approved plans and specifications, and in accordance with Minn. R. 7035.2615.

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**TOTAL FACILITY**

### Contingency Action Criteria

**1.7.3 Contingency Action Procedures**

1.7.4 The Permittee must implement the actions necessary to comply with the contingency action requirements in accordance with Minn. R. 7035.2615.

**1.7.5 Emergency Preparedness and Prevention**

1.7.6 The Permittee must maintain and operate a facility to minimize the possibility of a fire, explosion, or any release to air, land, or water of pollutants that threaten human health or the environment in accordance with Minn. R. 7035.2595.

**1.7.7 Emergency Procedures**

1.7.8 The Permittee must take all reasonable containment measures during an emergency and submit a written report to the Commissioner in accordance with Minn. R. 7035.2605.

## 1.8 Closure Criteria

**1.8.1 Facility Closure**

1.8.2 The Permittee must close each waste activity, or the entire facility as appropriate, as specified in the approved plans and specifications, and in accordance with Minn. R. 7035.2625.

**1.8.3 Closure Procedures**

1.8.4 The Permittee must perform closure for each waste activity as specified in the approved plans and specifications, and in accordance with Minn. R. 7035.2635.

1.8.5 The Permittee must complete closure activities for the waste activity area in accordance with the closure plan within 180 days following the beginning of closure as specified in the closure procedures above.

## 1.9 Postclosure Criteria

**1.9.1 Postclosure Plan**

1.9.2 The Permittee must comply with postclosure requirements as specified in the approved plans and specifications, and in accordance with Minn. R. 7035.2645.

**1.9.3 Postclosure Care**

1.9.4 The Permittee must perform postclosure care for a minimum of 20 years in accordance with Minn. R. 7035.2655, subp. 1.

**1.9.5 Postclosure Use of Property**

1.9.6 The Permittee must comply with postclosure use of property requirements in accordance with Minn. R. 7035.2655, subp. 2.

## 1.10 Financial Criteria

**1.10.1 Cost Estimates**

1.10.2 The Permittee must keep the current cost estimates for each waste activity at the Facility during the operating life in accordance with Minn. R. 7035.2685, subp. 2.

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**TOTAL FACILITY**

### Financial Criteria

**1.10.3 Financial Assurance**

1.10.4 The Permittee shall establish and maintain financial assurance in accordance with Minn. R. 7035.2665 to 7035.2805.

1.10.5 The Permittee shall maintain a trust fund and make monthly payments towards the financial assurance obligation. Payments will be based on the tonnage of new waste accepted at the Facility. The Permittee must deposit $10,000 before the initial receipt of waste for disposal.

## 1.11 General Conditions

**1.11.1 Release**

1.11.2 The MPCA's issuance of a permit does not release the Permittee from any liability, penalty, or duty imposed by Minnesota or federal statutes, or regulations, or local ordinances including, but not limited to, those promulgated pursuant to Minn. Stat. chs. 115, 115A, 116, 400 and 473. This permit shall be permissive only and shall not be construed as estopping or limiting any claims against the Permittee, its agents, contractors, or assigns, nor as estopping or limiting any legal claims of the state against the Permittee, its agents, contractors, or assigns for damages to state property, or for any violation of the terms of this permit.

**1.11.3 Future Changes**

1.11.4 The MPCA's issuance of a permit does not prevent the future adoption by the MPCA of pollution control rules, standards, or enforcement orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards, or enforcement orders against the Permittee.

**1.11.5 Rights and Privilege**

1.11.6 The permit does not convey a property right or an exclusive privilege.

**1.11.7 Enforcement**

1.11.8 The MPCA's issuance of a permit does not obligate the MPCA to enforce local laws, rules or plans beyond that authorized by Minnesota Statutes.

**1.11.9 Performance**

1.11.10 The Permittee shall perform the actions or conduct the activity authorized by the permit in accordance with the submittals and specifications approved by the MPCA and in compliance with the conditions of the permit.

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## TOTAL FACILITY

### General Conditions

**1.11.11 Operation and Maintenance**

1.11.12 The Permittee shall at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them which are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. The Permittee shall install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit and, for all permits other than hazardous waste facility permits, if these backup or auxiliary facilities are technically and economically feasible.

**1.11.13 Honesty**

1.11.14 The Permittee may not knowingly make a false or misleading statement, representation, or certification in a record, report, plan, or other document required to be submitted to the MPCA or the Commissioner by the permit. The Permittee shall immediately upon discovery report to the Commissioner an error or omission in these records, reports, submittals or other documents.

**1.11.15 Timely Information Submittal**

1.11.16 The Permittee shall, when requested by the Commissioner, submit within a reasonable time the information and reports that are relevant to the control of pollution regarding the construction, modification, or operation of the Facility covered by the permit or regarding the conduct of the activity covered by the permit.

**1.11.17 Access**

1.11.18 When authorized by Minn. Stat. 115.04, 115B.17, subd. 4 and 116.091, and upon presentation of proper credentials, the MPCA, or an authorized employee or agent of the MPCA, shall be allowed by the Permittee to enter at reasonable times upon the property of the permittee to examine and copy books, papers, records, or memoranda pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit; and to conduct surveys and investigations, including sampling or monitoring, pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit.

**1.11.19 Discovery of Noncompliance**

1.11.20 If the Permittee discovers, through any means, including notification by the MPCA, that noncompliance with a condition of the permit has occurred, the Permittee shall take all reasonable steps to minimize the adverse impacts on human health, public drinking water supplies, or the environment resulting from the noncompliance.

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## TOTAL FACILITY

### General Conditions

**1.11.21 Notification of Noncompliance**

1.11.22 If the Permittee discovers that noncompliance with a condition of the permit has occurred which could endanger human health, public drinking water supplies, or the environment, the Permittee shall, within 24 hours of the discovery of the noncompliance, orally notify the Commissioner. Within five (5) days of the discovery of the noncompliance, the Permittee shall submit to the Commissioner a written description of the noncompliance; the cause of the noncompliance; the exact dates of the period of the noncompliance; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

**1.11.23 Reporting of Noncompliance**

1.11.24 The Permittee shall report noncompliance with the permit not reported in the Notification of Noncompliance subheading above by submitting the information listed in Notification of Noncompliance within 30 days of the discovery of the noncompliance.

**1.11.25 Alterations**

1.11.26 The Permittee shall give advance notice to the Commissioner as soon as possible of planned physical alterations or additions to the permitted facility or activity that may result in noncompliance with a Minnesota or federal pollution control statute or rule or condition of the permit.

**1.11.27 Transferability**

1.11.28 The permit is not transferable to any person without the express written approval of the MPCA after compliance with the requirements of Minn. R. 7001.0190. A person to whom the permit has been transferred shall comply with the conditions of the permit.

**1.11.29 Responsibility for Damage**

1.11.30 The permit authorizes the Permittee to perform the activities described in the permit under the conditions of the permit. In issuing the permit, the state and MPCA assume no responsibility for damage to persons, property, or the environment caused by the activities of the Permittee in the conduct of its actions, including those activities authorized, directed, or undertaken under the permit. To the extent the state and MPCA may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act, Minn. Stat. 3.736.

**1.11.31 Modifying or Revoking Permit**

1.11.32 The Commissioner may commence proceedings to modify or revoke this permit during its terms if cause exists under Minn. R. 7001.0170 to 7001.0180.

**1.11.33 Severability**

1.11.34 The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected.

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**TOTAL FACILITY**

## General Conditions

**1.11.35 Extensions**

1.11.36 The Permittee may request an extension of the dates set forth in this permit including the submittal and monitoring dates. The request must include justification for requesting the extension of the date. Based on the justification, the Commissioner may grant an extension.

**1.11.37 Term of Permit**

1.11.38 This permit is valid until the expiration date unless revoked or modified by the MPCA pursuant to Minn. R. 7001.0170 to 7001.0180. To allow for adequate MPCA review time and to avoid possible termination of the permit at the time the permit expires, an application for reissuance of the permit must be submitted no later than 180 calendar days before the expiration date of the permit.

**1.11.39 Retention of Records**

1.11.40 The Permittee must maintain records of all groundwater monitoring data and ground water surface elevations for the active life of the facility and each waste activity and, for disposal activities, for the postclosure care period. The Permittee must also maintain an operating record in accordance with Minn. R. 7035.2575 until closure of each waste activity at the facility.

**1.11.41 As-built Plans**

1.11.42 The Permittee may not start treatment, storage, or disposal of solid waste in a new solid waste management facility or in a modified portion of an existing solid waste management facility until the Commissioner has received a letter and as-built plans signed by the owner or operator and by an engineer registered in Minnesota certifying that the facility or modified portion of the facility has been constructed in compliance with the conditions of the permit.

**1.11.43 Construction Certification**

1.11.44 The Permittee may not start treatment, storage, or disposal of solid waste in a new solid waste management facility or in a modified portion of an existing solid waste management facility until the Commissioner has inspected the new facility or modified portion of the facility and has provided the owner or operator with a letter stating that the certification submitted is complete and approved.

**1.11.45 Financial Assurance**

1.11.46 The Permittee may not start treatment, storage, or disposal of solid waste in a new solid waste management facility or in a modified portion of an existing solid waste management facility until the commissioner has approved the financial assurance amount and instrument to be used for the facility in accordance with Minn. R. 7035.2665 to 7035.2805.

## 1.12 Specific Conditions

1.12.1 Before waste can be placed in any constructed cells the installation of monitoring wells P-6 and P-7 and the collection of the required Hydrogeologic information described in the July 2010 Hydrogeologic Investigation Work Plan must be submitted to the MPCA.

## TOTAL FACILITY

### Specific Conditions

1.12.2 Before waste can be placed in any constructed cells baseline sampling must occur on groundwater monitoring wells P-1 through P-7. Baseline sampling will consist of two consecutive sampling events at least two weeks apart. The parameters to analyzed for during these two baseline sampling events for wells P-1 through P-7 are listed on the limits table of this permit under monitoring well P-1. The data collected for these two sampling events must be submitted to the MPCA in the electronic format and in hard copy format as outlined in the reporting section of this permit.

## 2. DEMOLITION DEBRIS DISPOSAL AREA DD 001

### 2.1 Design and Construction Criteria

#### 2.1.1 Applicability

2.1.2 DD001 applies to the old, unlined portions of the landfill. This waste will be excavated and placed in new, lined cells of the landfill.

2.1.3 The Permittee must submit a detailed waste relocation plan prior to excavation. The plan must included waste screening and acceptance protocol. The plan must also address contingency action plans if unacceptable wastes are found.

### 2.2 Operating and Maintenance Criteria

#### 2.2.1 Waste Screening

2.2.2 The Permittee must inspect all excavated waste before it enters the waste disposal area. All unacceptable materials must be removed prior to the placement of the waste in the working face for spreading and compaction. Unacceptable materials must be stored appropriately and transferred to an appropriate disposal facility at least once per month.

#### 2.2.3 Final Cover

2.2.4 The Permittee must minimize the amount of exposed waste during the relocation process. Disturbance of the existing cover shall be contained to those areas where waste is actively being removed.

#### 2.2.5 Run-on / Run-off Control System

2.2.6 The Permittee must maintain a run-on control system to prevent flow onto the waste excavation area, and a run-off control system to collect and control at least the water volume resulting from a 24 hour, 25 year storm event.

# 3. INDUSTRIAL WASTE DISPOSAL AREA IL 001

## 3.1 Design and Construction Criteria

### 3.1.1 Applicability

3.1.2 IL001 applies to all newly constructed, lined cells and the co-disposal of industrial and C & D waste.

### 3.1.3 Design Requirements

3.1.4 The Permittee must design any proposed future expansions or modifications of the disposal area in accordance with the design requirements as specified in the approved plans.

### 3.1.5 Construction Requirements

3.1.6 The Permittee must construct or install the phases, cells, liners, leachate management system, gas management system and water monitoring system of the industrial landfill in accordance with the approved plans and specifications.

### 3.1.7 Prohibited Areas

3.1.8 The disposal of industrial solid waste is prohibited within the areas outlined in Minn. R. 7035.1600.

### 3.1.9 Variance

3.1.10 The Facility is approximately 100 feet from the nearest corner of the fill limits to the right-of-way of Interstate 35. Within that 100 feet is a 15-20 foot high earthen berm with 20-foot tall mature evergreen trees on top. This provides both a physical and visual barrier between the landfill and the interstate. The variance is approved with this permit.

### 3.1.11 Permit Application and Required Plans

3.1.12 Plans, including a permit application, report, and drawings must be prepared by a registered engineer of Minnesota. The submitted plans must include those outlined in Minn. R. 7035.1800.

### 3.1.13 Location of Disposal Area

3.1.14 The Permittee must locate the disposal area in accordance with Minn. R. 7035.2555. The Permittee shall not dispose of waste within 50 feet of the property line.

### 3.1.15 Liner Design

3.1.16 The liner design shall consist of a 60-mil high density polyethylene geomembrane underlain by two feet of compacted clay with a minimum permeability of 0.0000001 cm/sec. The Permittee shall construct the liner in accordance with the approved Liner Construction Quality Assurance Plan.

3.1.17 The Permittee may substitute a geosynthetic clay liner (GCL) for one foot of compacted clay. The GCL will be a needle punched material having a maximum permeability of 0.000000001 cm/sec. The Permittee shall remove and replace any GCL that has been hydrated prior to being covered by the overlying material. Hydrated GCL is defined as material that has become soft as determined by squeezing the material with finger pressure or material that has exhibited swelling.

**INDUSTRIAL WASTE DISPOSAL AREA IL 001**

### Design and Construction Criteria

**3.1.18 Leachate Detection, Collection, and Treatment System**

3.1.19 The disposal area must include a leachate detection, collection, and on-site or off-site treatment system in accordance with approved plans and specifications.

3.1.20 The Permittee must perform electrical leak location testing on cells 1-4. This testing must be performed according to ASTM D6747-02, Standard Guide for Selection of Techniques for Electrical Detection of Potential Leak Paths in Geomembrane. Future cell construction and liner integrity must be tested according to a method approved by the commissioner.

**3.1.21 Cover System Design Requirements**

3.1.22 The Permittee must design the final cover system in accordance with Minn. R. 7035.2825, subp. 11. The approved cover shall consist of, at a minimum, a 40-mil linear-low density polyethylene (LLDPE), geonet geocomposite, 18 inches of common borrow and six inches of top soil capable of sustaining vegetation. Alternative cover designs approved by the commissioner may also be used.

**3.1.23 Cover and Liner Materials Evaluation**

3.1.24 The Permittee must evaluate soils intended for use as cover or liner material in accordance with approved plans and specifications. The specifications must comply with MPCA solid waste guidance documents #5.06 'Guidance for Soil Construction Standards and Testing Frequencies - Final Cover Construction' and #5.07 'Guidance for Soil Construction Standards and Testing Frequencies - Landfill Cell Construction.'

## 3.2 Operating and Maintenance Criteria

**3.2.1 Surface Water Drainage**

3.2.2 The Permittee must divert surface water drainage around and away from the site operating area. Unless approved by the Commissioner, slopes greater than 200 feet must include drainage ways and design features to prevent erosion.

**3.2.3 Run-on / Run-off Control System**

3.2.4 The Permittee must maintain a run-on control system to prevent flow onto the waste activity area, and a run-off control system to collect and control at least the water volume resulting from a 24 hour, 25 year storm.

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**INDUSTRIAL WASTE DISPOSAL AREA IL 001**

## Operating and Maintenance Criteria

**3.2.5 Acceptable Wastes**

3.2.6 The Permittee shall accept only the wastes according the approved Industrial Solid Waste Management Plan. Acceptable waste include, but are not limited to:
-limited amount of paper sludge to a maximum of 20% of the total annual volume
-construction/demolition debris
-wood wastes such as plywood, particle board, and cabinetry
-sawdust from industrial/manufacturing sources
-metal wastes such as copper, aluminum, galvanized pipe, and lead pipe
-concrete, asphalt, and masonry type wastes
-asbestos-containing materials
-building materials such as carpet, ceramic, insulation, sheetrock, and PVC pipe
-contaminated soil
-foundry sands
-autoclave waste
-shredder fluff
This list is NOT all-inclusive.

**3.2.7 Non-acceptable Wastes**

3.2.8 The following non-acceptable or prohibited wastes are materials that are chemically or biologically active and which have a high potential to leach chemical constituents or to generate gas. These wastes include, but are not limited to the following:
-Animal carcasses
-wastes that could spontaneously combust or ignite other wastes
-batteries
-fluorescent tubes and ballasts
-food waste
-hazardous waste
-household refuse or garbage
-liquids (any type)
-machinery or engine parts
-PCB containing waste (greater than 50ppm)
-radioactive waste
This list is NOT all-inclusive.

**3.2.9 Industrial Solid Waste Management**

3.2.10 The Permittee must manage industrial solid waste as specified in the approved plan in accordance with Minn. R. 7035.2535, subp. 5.

**3.2.11 Phase Development**

3.2.12 The Permittee must develop the site in phases according to the phase development plans. Each phase must contain individual cells that will provide for filling in a manner to achieve final waste elevations as rapidly as possible.

## INDUSTRIAL WASTE DISPOSAL AREA IL 001

### Operating and Maintenance Criteria

**3.2.13 Frost Protection**

3.2.14 The Permittee must place at least six feet of material on any newly constructed liner by December 31 of each year. An alternative insulating material may be used if done according to an MPCA approved plan.

**3.2.15 Staking of Fill Phases**

3.2.16 The Permittee must identify each fill phase with grade stakes or other marking method before the deposition of any waste.

**3.2.17 Working Face**

3.2.18 The Permittee must limit the disposal of industrial solid waste to as small an area as practical and with appropriate facilities to confine wind-blown material within the area.

**3.2.19 Compaction**

3.2.20 The Permittee must compact the industrial solid waste as densely as practicable in layers two feet or less in depth and using a maximum three-to-one slope to achieve maximum compaction.

3.2.21 Friable ACM must not be compacted.

**3.2.22 Cover Material Stockpile**

3.2.23 The Permittee must maintain an adequate supply of cover material which, if necessary, must be stockpiled and protected to allow for compliance with the requirements contained in Minn. R. 7035.1700, item D. The cover material must be available for use during inclement weather or winter operations.

**3.2.24 Intermittent Cover**

3.2.25 The Permittee must cover the industrial solid waste as needed to prevent nuisance conditions such as litter or wind dispersion of waste materials. The frequency of placement may be no less than once per month. The cover depth must be sufficient to cover the waste completely and must be at least six inches if soil or similar material is used. The Permittee must maintain all previously covered areas with at least six inches of suitable cover material.

3.2.26 Certain materials accepted at the facility may qualify for use as an alternative cover material. These materials must meet the criteria outlined in the approved Industrial Solid Waste Management Plan. The permittee shall not accept more than 20% of all waste received for use as alternative daily cover. Alternative cover shall not be used on exterior slopes or as intermediate cover.

**3.2.27 Intermediate Cover**

3.2.28 The Permittee must provide and maintain an intermediate cover totaling at least 12 inches of suitable compacted cover material for those disposal areas that will be exposed to the elements for a period of 120 days or longer.

### Operating and Maintenance Criteria

3.2.29 Within 30 days after a phase reaches final permitted elevation, the waste must be covered with a minimum of two feet of soil. The Permittee may observe the final cover sub-grade for a period of time not to exceed one year from the date final elevations are reached unless a different time frame is approved by the Commissioner. Soil cover shall be vegetated during the one-year settlement period. The one year period allows the permittee to evaluate the sub-grade for settlement effects. Following the settlement evaluation period, the approved final cover system must be installed. No additional waste may be placed in the phase once the one-year settlement period commences.

**3.2.30 Final Cover**

3.2.31 The final cover shall consist of a 40-mil Linear Low Density Polyethylene (LLDPE), geonet geocomposite, and eighteen inches of common borrow, unless an equal capping system is approved by the commissioner.

Final cover must be placed following the one-year settlement period. If the event of adverse weather conditions, the permittee may elect to extend the initiation of final cover to June 1st.

3.2.32 The Permittee must maintain the final cover system on all closed portions of the active waste disposal area in accordance with the approved plans and specifications.

**3.2.33 Stormwater Management**

3.2.34 The Permittee must operate and maintain the stormwater management system for the disposal area with Best Management Practices to manage stormwater discharges in accordance with the NPDES Permit for the discharge of stormwater associated with an industrial and/or construction activity.

**3.2.35 Leachate System**

3.2.36 The Permittee must operate and maintain a leachate detection, collection and on-site or off-site treatment system in accordance with the approved plans and specifications.

3.2.37 The height of free standing liquid over the liner in the fill area must not exceed one foot. If the depth of leachate exceeds one foot over the liner, not including the sump area(s), for more than a week period, the Permittee must investigate other options for managing and controlling leachate. The Permittee shall install an automated notification system to initiate leachate hauling when one foot leachate depths over the liner occurs.

## 3.3 Monitoring Criteria

**3.3.1 Gas Monitoring**

3.3.2 The Permittee must perform quarterly monitor for methane and hydrogen sulfide. The monitoring will be performed at the leachate sump riser pipes and cleanouts using a hand-held meter. The results must be reported to the MPCA.

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**INDUSTRIAL WASTE DISPOSAL AREA IL 001**

**Monitoring Criteria**

3.3.3 Gas monitoring is currently conducted prior to confined space entry and occasional spot checking by landfill and Agency staff. Excessive landfill gas generation is not expected. However, if landfill gas is detected by smell or from gas meter readouts, then the Agency will require a formal gas monitoring program.

3.3.4 The Permittee shall the report the detection of methane or hydrogen sulfide to the MPCA if the Permittee detects these substances during any confined space entry.

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# 4. SOLID WASTE RECYCLING AREA RE 001

## 4.1 Design and Construction Criteria

### 4.1.1 Construction Requirements

4.1.2 The Permittee must construct the solid waste recycling area in accordance with the approved plans and specifications. Storage of waste on-site must comply with Minn. R. 7035.2855.

### 4.1.3 Design Requirements

4.1.4 The Permittee must design any proposed future expansions or modifications of the solid waste recycling area in accordance with the design requirements outlined in Minn. R. 7035.2845, subp. 3.

## 4.2 Operating and Maintenance Criteria

### 4.2.1 Operation Requirements

4.2.2 The Permittee of a recycling area must comply with the operation requirements of Minn. R. 7035.2845, subp. 4

4.2.3 The Permittee may temporarily store major appliances, scrap metal (ferrous and non-ferrous), electronics, cardboard, wood, and tires up to the limits specified in the Waste Capacity Table of this permit, in appropriate designated areas prior to processing and recycling.

4.2.4 The Permittee must store recycled materials in their appropriately designated storage area. The storage areas must be identified on the annual survey submitted with the facility annual report. Any proposed changes to the location of these storage areas must be noted on the annual survey as well. Material storage is not allowed on areas of final cover. Material stockpiles can be located within lined cells with at least six feet of waste placement.

### 4.2.5 Major Appliances

4.2.6 The Permittee must provide a separate storage area for the transfer of major appliances, as defined in Minn. Stat. 115A.03, such that damage to the units is minimized during handling. The Permittee must ensure that the proper removal of hazardous components and refrigerant gases is performed by a certified appliance processor. The Permittee must transfer all appliances off-site at least annually, with the number of appliances recycled and the destination included in the annual report.

### 4.2.7 Scrap Metal

4.2.8 The Permittee must provide a separate storage area for the storage of scrap metal. The Permittee must manage all scrap metal within the designated area on site. The Permittee may store a maximum of 500 tons of scrap metal in this area.

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**SOLID WASTE RECYCLING AREA RE 001**

### Operating and Maintenance Criteria

**4.2.9 Electronics**

4.2.10 The Permittee must provide a separate storage area for the storage and transfer of electronics. As used in this permit, "electronics" includes but is not limited to televisions, computer monitors, computers, microwaves, and other devices that have wiring, circuitry, circuit boards, batteries, and other similar components. The Permittee shall store and manage electronics in a covered roll-off container. Electronics must be stored in a manner that prevents damage and the release of hazardous components. The Permittee must transport electronics stored at the Facility off-site for recycling or disposal at an appropriate facility at least annually and the Permittee shall note the volume and the destination in the annual report.

**4.2.11 Tires**

4.2.12 The Permittee must identify a designated waste tire storage area. The Permittee may store a maximum of 500 passenger tire equivalents (PTE) in this area.

4.2.13 The Permittee must maintain all tire piles in a manner that keeps the piles free of vegetation, mosquitoes and rodents.

4.2.14 The Permittee must divert surface water drainage around and away from the waste tire storage area.

4.2.15 The Permittee must not conduct any operations involving the use of open flames, blow torches, or highly flammable substances within 50 feet of a waste tire pile.

4.2.16 The Permittee must arrange for the transportation and disposal of the waste tires by a licensed tire hauler. The Permittee shall include the number of tires transferred, the licensed hauler's MPCA transporter identification number, and the tire disposal destination in the facility's annual report.

**4.2.17 Residual Materials**

4.2.18 Residual materials must be stored in covered containers and managed in a manner which prevents nuisance conditions. The Permittee must remove all residuals at least once per month.

**4.2.19 Surface Water Drainage**

4.2.20 The Permittee must divert all surface water around and away from either recyclable or unusable materials that are stored outdoors.

## 4.3 Contingency Action Criteria

**4.3.1 Contingency Action Plan**

4.3.2 The Permittee must implement the actions necessary to comply with requirements in accordance with Minn. R. 7035.2845, subp. 5.

## 4.4 Closure Criteria

### 4.4.1 Closure

4.4.2 The Permittee must properly remove and treat or dispose of all waste and contaminated soil or structures at the time of closure in accordance with Minn. R. 7035.2845, subp. 6.

# 5. SOLID WASTE STORAGE AREA ST 001

## 5.1 Design and Construction Criteria

### 5.1.1 Construction Requirements

5.1.2 The Permittee must construct the solid waste storage area in accordance with the approved plans and specifications.

### 5.1.3 Design Requirements

5.1.4 The Permittee must design any proposed future expansions or modifications of the solid waste storage area in accordance with the location standards and design requirements outlined in Minn. R. 7035.2855, subps. 2 and 3.

## 5.2 Operating and Maintenance Criteria

### 5.2.1 Operation Requirements

5.2.2 The Permittee may store up to 50,000 tons combined of concrete and asphalt pavement for processing and recycling and up to 10,000 tons of asphalt shingles for recycling into asphalt pavement.

5.2.3 The Permittee must store the concrete, asphalt pavement and asphalt shingles in the designated storage areas. The storage areas must be identified on the annual survey submitted with the facility annual report. Any proposed changes to the location of the storage areas must be noted on the annual survey.

### 5.2.4 Particulate Matter Management

5.2.5 The Permittee must cover or otherwise manage the solid waste to contain any particulate matter that may be subject to wind dispersion.

### 5.2.6 Surface Water Management

5.2.7 The Permittee must manage storm water in accordance with Minn. R. 7035.2855, subp. 3, items C, D and E.

## 5.3 Closure Criteria

### 5.3.1 Closure

5.3.2 The Permittee must properly remove and dispose or recycle all solid waste and contaminated portions of the storage area accordance with Minn. R. 7035.2855, subp. 6 upon closure of the area.

# LIMITS TABLE

**Monitoring Station:** S-1
**MPCA Unique ID:** SW-399-LS-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

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| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

Permit Issued: December 21, 2010
Permit Expires: December 21, 2015

# LIMITS TABLE

**Monitoring Station:** S-1
**MPCA Unique ID:** SW-399-LS-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** S-1
**MPCA Unique ID:** SW-399-LS-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |
| Potassium | 744-00-97 | - | ug/L | Summer | |

Permit Issued: December 21, 2010
Permit Expires: December 21, 2015

# LIMITS TABLE

**Monitoring Station:** S-1
**MPCA Unique ID:** SW-399-LS-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Suspended Solids, Total | C-0-09 | - | N/A | Spring, Summer and Fall | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-1
**MPCA Unique ID:** SW-399-WM-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-1
**MPCA Unique ID:** SW-399-WM-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-1
**MPCA Unique ID:** SW-399-WM-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-1
**MPCA Unique ID:** SW-399-WM-001
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-2
**MPCA Unique ID:** SW-399-WM-002
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-3
**MPCA Unique ID:** SW-399-WM-003
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-3
**MPCA Unique ID:** SW-399-WM-003
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-3
**MPCA Unique ID:** SW-399-WM-003
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-3
**MPCA Unique ID:** SW-399-WM-003
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-4
**MPCA Unique ID:** SW-399-WM-004
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-4
**MPCA Unique ID:** SW-399-WM-004
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-4
**MPCA Unique ID:** SW-399-WM-004
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-4
**MPCA Unique ID:** SW-399-WM-004
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-5
**MPCA Unique ID:** SW-399-WM-005
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-5
**MPCA Unique ID:** SW-399-WM-005
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-5
**MPCA Unique ID:** SW-399-WM-005
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-5
**MPCA Unique ID:** SW-399-WM-005
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-6
**MPCA Unique ID:** SW-399-WM-006
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-6
**MPCA Unique ID:** SW-399-WM-006
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-6
**MPCA Unique ID:** SW-399-WM-006
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-6
**MPCA Unique ID:** SW-399-WM-006
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# LIMITS TABLE

**Monitoring Station:** P-7
**MPCA Unique ID:** SW-399-WM-007
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,1,1-Trichloroethane | 715-56 | 2,250.0 | ug/L | Spring, Summer and Fall | |
| 1,1,2,2-Tetrachloroethane | 793-45 | 0.5 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichloroethane | 790-05 | 0.75 | ug/L | Spring, Summer and Fall | |
| 1,1,2-Trichlorotrifluoroethane | 761-31 | - | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethane | 753-43 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloroethylene;(Vinylidene chloride) | 753-54 | 50.0 | ug/L | Spring, Summer and Fall | |
| 1,1-Dichloropropene | 563-58-6 | - | ug/L | Spring, Summer and Fall | |
| 1,2-(trans-) Dichloroethylene | 156-60-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichlorobenzene | 876-16 | - | ug/L | Spring, Summer and Fall | |
| 1,2,3-Trichloropropane | 961-84 | 10.0 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 17.5 | ug/L | Spring, Summer and Fall | |
| 1,2,4-Trimethylbenzene | 956-36 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dibromoethane;(Ethylene dibromide); EDB | 106-93-4 | 0.001 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichlorobenzene (orth-) | 955-01 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethane | 107-06-2 | 1.0 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloroethylene (cis-) | 156-59-2 | 12.5 | ug/L | Spring, Summer and Fall | |
| 1,2-Dichloropropane | 788-75 | 1.25 | ug/L | Spring, Summer and Fall | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 25.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichlorobenzene (meta-) | 541-73-1 | 150.0 | ug/L | Spring, Summer and Fall | |
| 1,3-Dichloropropane | 142-28-9 | - | ug/L | Spring, Summer and Fall | |
| 1,4-Dichlorobenzene (para-) | 106-46-7 | 2.5 | ug/L | Spring, Summer and Fall | |
| 2,2-Dichloropropane | 594-20-7 | - | ug/L | Spring, Summer and Fall | |
| 2-Chlorotoluene (ortho-) | 954-98 | - | ug/L | Spring, Summer and Fall | |
| 4-Chlorotoluene (para-) | 106-43-4 | - | ug/L | Spring, Summer and Fall | |
| Acetone | 676-41 | 175.0 | ug/L | Spring, Summer and Fall | |
| Allyl chloride; (3 chloropropene) | 107-05-1 | 7.5 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-7
**MPCA Unique ID:** SW-399-WM-007
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Aluminum | 742-99-05 | - | ug/L | Summer | |
| Antimony | 744-03-60 | 1.5 | ug/L | Summer | |
| Appearance | 1 | - | N/A | Spring, Summer and Fall | |
| Arsenic | 744-03-82 | 2.5 | ug/L | Summer | |
| Barium | 744-03-93 | 500.0 | ug/L | Summer | |
| Benzene | 714-32 | 0.5 | ug/L | Spring, Summer and Fall | |
| Beryllium | 744-04-17 | 0.02 | ug/L | Summer | |
| Boron | 744-04-28 | 250.0 | ug/L | Summer | |
| Bromobenzene | 108-86-1 | - | ug/L | Spring, Summer and Fall | |
| Bromochloromethane (Chlorobromomethane) | 749-75 | - | ug/L | Spring, Summer and Fall | |
| Bromodichloromethane (Dichlorobromomethane) | 752-74 | 1.5 | ug/L | Spring, Summer and Fall | |
| Bromoform | 752-52 | 10.0 | ug/L | Spring, Summer and Fall | |
| Bromomethane (Methyl bromide) | 748-39 | 2.5 | ug/L | Spring, Summer and Fall | |
| Cadmium | 744-04-39 | 1.0 | ug/L | Summer | |
| Calcium | 744-07-02 | - | ug/L | Summer | |
| Carbon tetrachloride | 562-35 | 0.75 | ug/L | Spring, Summer and Fall | |
| Chlorobenzene; (monochlorobenzene) | 108-90-7 | 25.0 | ug/L | Spring, Summer and Fall | |
| Chlorodibromomethane;(Dibromochloromethane) | 124-48-1 | 2.5 | ug/L | Spring, Summer and Fall | |
| Chloroethane | 750-03 | - | ug/L | Spring, Summer and Fall | |
| Chloroform | 676-63 | 7.5 | ug/L | Spring, Summer and Fall | |
| Chloromethane; (Methyl chloride) | 748-73 | - | ug/L | Spring, Summer and Fall | |
| Chromium | 744-04-73 | 25.0 | ug/L | Summer | |
| cis-1,3-Dichloropropene | 100-61-015 | - | ug/L | Spring, Summer and Fall | |
| Cobalt | 744-04-84 | 7.5 | ug/L | Summer | |
| Copper | 744-05-08 | - | ug/L | Summer | |
| Cumene; (Isopropylbenzene) | 988-28 | 75.0 | ug/L | Spring, Summer and Fall | |
| Dibromochloropropane; (DBCP) | 961-28 | 0.05 | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-7
**MPCA Unique ID:** SW-399-WM-007
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Dibromomethane; (Methylene bromide) | 749-53 | - | ug/L | Spring, Summer and Fall | |
| Dichlorodifluoromethane | 757-18 | 175.0 | ug/L | Spring, Summer and Fall | |
| Dichlorofluoromethane | 754-34 | - | ug/L | Spring, Summer and Fall | |
| Dichloromethane; (Methylene chloride) | 750-92 | 1.25 | ug/L | Spring, Summer and Fall | |
| Dissolved Oxygen, Field | T-1-05 | - | mg/L | Spring, Summer and Fall | |
| Eh (Oxidation potential) | 4 | - | mV | Spring, Summer and Fall | |
| Ethyl benzene | 100-41-4 | 12.5 | ug/L | Spring, Summer and Fall | |
| Ethyl ether | 602-97 | 50.0 | ug/L | Spring, Summer and Fall | |
| Hexachlorobutadiene | 876-83 | 0.25 | ug/L | Spring, Summer and Fall | |
| Iron | 743-98-96 | - | ug/L | Summer | |
| Lead | 743-99-21 | - | ug/L | Summer | |
| Lithium | 743-99-32 | - | ug/L | Summer | |
| Magnesium | 743-99-54 | - | ug/L | Summer | |
| Manganese | 743-99-65 | 75.0 | ug/L | Summer | |
| Mercury | 743-99-76 | 0.5 | ug/L | Summer | |
| Methyl ethyl ketone (MEK) | 789-33 | 1,000.0 | ug/L | Spring, Summer and Fall | |
| Methyl isobutyl ketone; (4-Methyl-2-pentanone) | 108-10-1 | 75.0 | ug/L | Spring, Summer and Fall | |
| Methyl tertiary-Butyl Ether (MTBE) | 163-40-44 | - | ug/L | Spring, Summer and Fall | |
| Molybdenum | 743-99-87 | 7.5 | ug/L | Summer | |
| Naphthalene | 912-03 | 75.0 | ug/L | Spring, Summer and Fall | |
| n-Butyl Benzene | 104-51-8 | - | ug/L | Spring, Summer and Fall | |
| Nickel | 744-00-20 | 25.0 | ug/L | Summer | |
| Nitrate + Nitrite | C-0-05 | 2,500.0 | ug/L | Summer | |
| n-Propyl benzene | 103-65-1 | - | ug/L | Spring, Summer and Fall | |
| pH | C-0-06 | - | SU | Spring, Summer and Fall | |
| Phosphorus | 772-31-40 | - | ug/L | Summer | |
| p-Isopropyltoluene | 998-76 | - | ug/L | Spring, Summer and Fall | |

# LIMITS TABLE

**Monitoring Station:** P-7
**MPCA Unique ID:** SW-399-WM-007
**Comments:**

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399

**Standard Landfill Monitoring Periods:**
**Spring:** Mar-28 **to** Apr-28
**Summer:** Jul-01 **to** Aug-07
**Fall:** Oct-14 **to** Nov-14

**Action:** PER 004

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| Analyte | CAS/EMMI# | Intervention Limit | Units | Frequency | Comments |
|---|---|---|---|---|---|
| Potassium | 744-00-97 | - | ug/L | Summer | |
| sec-Butyl Benzene | 135-98-8 | - | ug/L | Spring, Summer and Fall | |
| Selenium | 778-24-92 | 7.5 | ug/L | Summer | |
| Silver | 744-02-24 | 7.5 | ug/L | Summer | |
| Sodium | 744-02-35 | - | ug/L | Summer | |
| Specific Conductance | C-0-11 | - | umho/cm | Spring, Summer and Fall | |
| Static Water Level (Elevation, MSL) | PCA-00-1 | - | ft | Spring, Summer and Fall | |
| Strontium | 744-02-46 | - | ug/L | Summer | |
| Styrene | 100-42-5 | 25.0 | ug/L | Spring, Summer and Fall | |
| Sulfate | 148-08-798 | - | mg/L | Summer | |
| Temperature | T-1-21 | - | Deg C | Spring, Summer and Fall | |
| tert-Butyl Benzene | 980-66 | - | ug/L | Spring, Summer and Fall | |
| Tetrachloroethylene; (Perchloroethylene) | 127-18-4 | 1.25 | ug/L | Spring, Summer and Fall | |
| Tetrahydrofuran | 109-99-9 | 25.0 | ug/L | Spring, Summer and Fall | |
| Thallium | 744-02-80 | 0.15 | ug/L | Summer | |
| Tin | 744-03-15 | 1,000.0 | ug/L | Summer | |
| Toluene | 108-88-3 | 50.0 | ug/L | Spring, Summer and Fall | |
| Trichloroethylene; (TCE) | 790-16 | 1.25 | ug/L | Spring, Summer and Fall | |
| Trichlorofluoromethane | 756-94 | 500.0 | ug/L | Spring, Summer and Fall | |
| Turbidity, Field | G-0-19 | - | NTU | Spring, Summer and Fall | |
| Vanadium | 744-06-22 | 12.5 | ug/L | Summer | |
| Vinyl chloride; (chloroethene) | 750-14 | 0.05 | ug/L | Spring, Summer and Fall | |
| Xylenes (mixture of o,m,p) | 133-02-07 | 75.0 | ug/L | Spring, Summer and Fall | |
| Zinc | 744-06-66 | 500.0 | ug/L | Summer | |

# Required Actions and Submittals Table

**Report Date:** 05/16/2012

**Facility:** Shamrock Environmental Landfill

**Permit** SW-399

**Action:** PER004

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**Subject Item I.D.** Total Facility

**Required Actions/Submittals**

| Frequency/Due Date | Action or Submittal | Requirement |
|---|---|---|
| 23-JUN-15 | Submit Permit Application | To allow for adequate MPCA review time and to avoid possible termination of the permit at the time the permit expires, an application for reissuance of the permit must be submitted to the Commissioner no later that 180 calendar days before the expiration date of the permit. |
| Annually | Submit Annual Facility Report | Ann annual facility report for the preceding calendar year must be submitted to the Commission by February 1 of each year. The report must include the information identified in Minn. R. 7035.2585, 7035.2825, supb. 9, item K, 7035.2836, subp. 3, item G, and 7035.2845, subp. 4, item C, and include summary evaluation reports and specific annual reporting requirements for each waste activity. |
| Annually | Submit quarterly gas monitoring report | A summer landfill gas monitoring report must be submitted by September 30 of each year. |
| Annually | Submit quarterly gas monitoring report | A spring landfill gas monitoring report must be submitted by June 30 of each year. |
| Annually | Submit quarterly gas monitoring report | An autumn landfill gas monitoring report must be submitted by February 1 of each year. |
| Annually | Submit Annual Water Monitoring Evaluation Report | An annual water monitoring evaluation report must be submitted by February 1 of each year. The report must include a summary and discussion of the monitoring results for the preceding calendar year. |
| Annually | Submit Summer Water Monitoring Report | A summer water monitoring report must be submitted by September 30 of each year. This report shall contain both groundwater and leachate sampling results. The water monitoring results must be accompanied by information sufficient to establish the reliability, precision, and accuracy of the reported values, including the requirements of Minn. R. 7035.2815, subp. 14, item P. |
| Annually | Submit Autumn Water Monitoring Report | An autumn water monitoring report must be submitted by February 1 of each year. This report shall contain both groundwater and leachate sampling results. The water monitoring results must be accompanied by information sufficient to establish the reliability, precision, and accuracy of the reported values, including the requirements of Minn. R. 7035.2815, subp. 14, item P. |
| Annually | Submit Spring Water Monitoring Report | A spring water monitoring report must be submitted by June 30 of each year. This report shall contain both groundwater and leachate sampling results. The water monitoring results must be accompanied by information sufficient to establish the reliability, precision, and accuracy of the reported values, including the requirements of Minn. R. 7035.2815, subp. 14, item P. |

# Waste Capacity Table

**Report Date:** 05/16/2012
**Facility:** Shamrock Environmental Landfill
**Permit** SW-399
**Action:** PER004

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| WA ID | Waste Activity Type | Status | Permitted Area | Units | Permitted Capacity | Units | Design Capacity | Units | Comments |
|---|---|---|---|---|---|---|---|---|---|
| DD001 | Demolition Debris Disposal Area | Closed | 0.00 | acres | 228,000.00 | cubic yards | 228,000.00 | cubic yards | Old, unlined cells of C & D debris will be relocated onto liner system and this area will become future lined cells 7, 8, and 9 |
| IL001 | Industrial Waste Disposal Area | Open | 41.50 | acres | 1,311,000.00 | cubic yards | 3,544,000.00 | cubic yards | Co-Disposal of Industrial and C & D waste. Permitted Capacity is based on a 10 year estimate of waste to be recieved. Cells 1, 2, 3, and 4 are permitted. |
| RE001 | Solid Waste Recycling Area | Open | 1.00 | acres | 15,500.00 | tons/year | 15,500.00 | tons/year | unadultered wood waste = 10,000 tons, scrap metal = 5,000 tons, cardboard = 500 tons. In addition 1,000 appliances, 1,000 tires, and 120 cy of electronics will be collected for recycling. |
| ST001 | Solid Waste Storage Area | Open | 1.00 | acres | 60,000.00 | tons/year | 60,000.00 | tons/year | This is a maximum storage limit of 50,000 tons combined of concrete and asphalt and 10,000 tons of asphalt roofing shingles. |

Permit Issued: December 21, 2010

Permit Expires: December 21, 2015