

## APPENDIX V-E

# LEACHATE PRETREATMENT FACILITY OPERATIONS MANUAL & WASTEWATER DISCHARGE PERMIT



**DELAWARE RECYCLABLE PRODUCTS, INC.**

246 Marsh Lane  
New Castle, Delaware 19720

*Prepared for*

**PERMIT MODIFICATION  
APPLICATION – PART V  
APPENDIX V-E:  
LEACHATE PRETREATMENT  
OPERATIONS AND MAINTENANCE MANUAL**  
*for*  
**VERTICAL EXPANSION  
DRPI Industrial Landfill  
New Castle, Delaware**

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- Appendix A: Wastewater Discharge Permit
- Appendix B: Chapter 38 of the New Castle County Code

## **1 INTRODUCTION**

### **1.1 Terms of Reference**

The purpose of this manual is to provide information to operating personnel on the processes and equipment which comprise the groundwater control system, leachate collection system, and leachate pretreatment facilities for Delaware Recyclable Products, Inc. in New Castle, Delaware. This manual consists of 11 Sections, and Appendices dealing with the system operation and equipment maintenance.

This Leachate Pretreatment and Operations and Maintenance Plan was prepared by Geosyntec Consultants (Geosyntec) of Columbia, Maryland in March 2019. An earlier version was prepared by Woodward-Clyde in 1997 and has included several iterations of revisions by Golder Associates Inc. (Golder) and Geosyntec.

The day-to-day operational guidance for the collection and treatment operations are described in detail in Section 5. This chapter should be read and studied by the operating personnel to familiarize themselves with each unit's requirement for proper operation and maintenance. Each of the major components are described and relevant operational data is described in detail.

The general topics considered in these sections include:

Section 1- A description of the responsibilities of operating personnel and management

Section 2 - A discussion of the permits and regulations which govern the operation of the collection and treatment facilities.

Section 3 - A description of the staffing requirements for the facilities

Section 4 - A general discussion of the operation and control of the facilities' unit operations and processes.

Section 5 - A description of specific operations

Section 6 - A laboratory testing program for process control

Section 7 - A recommended record keeping system for documenting operation

Section 8 - A recommended maintenance program to keep equipment in proper operating condition.

Section 9 - An emergency response program which analyzes possible troubles and details steps to be taken in order to avoid, minimize or react to emergency situations

Section 10 - A discussion on "safety" and a description of the various hazards associated with operation and how to avoid accidents and injuries.

Section 11 – A discussion on the utilities which serve the facility.

## **1.2 General Description of Facilities**

The facilities consist of the groundwater control system, the leachate collection system, and the leachate pretreatment facilities and they are described below.

### **1.2.1 Groundwater Collection System**

The groundwater collection system is intended to maintain the groundwater level below the landfill liner and subgrade elevation. The groundwater collection system consists of a base liner and drainage media (geonet or sand) beneath each cell of the landfill. Groundwater from the drainage media discharges to individual collection trenches. Pumps then lift the groundwater and a portion discharges to the perimeter ditch which flows to the stormwater sediment basin and a portion of the underdrain discharges to the leachate forcemain.

### **1.2.2 Leachate Collection System**

The leachate collection system collects and transmits the leachate from each cell to the leachate storage tank adjacent to the pretreatment facilities. The leachate collection system consists of a geomembrane liner covered by a geosynthetic drainage media which discharges to individual collection trenches within each cell of the landfill. Submersible pumps lift the leachate from the trenches and discharge through an underground leachate forcemain to the leachate storage tank.

### **1.2.3 Leachate Pretreatment System**

In order to meet discharge limits for the New Castle County sewer system, the DRPI Landfill operates a leachate pretreatment system. Based on the historical leachate quality at the DRPI Landfill, the main constituent requiring treatment prior to discharge is hydrogen sulfide (H<sub>2</sub>S). Therefore, the leachate pretreatment system at the DRPI Landfill is designed to remove H<sub>2</sub>S to meet the discharge requirements of New Castle County. Currently the site uses sodium hypochlorite to treat H<sub>2</sub>S. Previously Odophos (a proprietary ferrous sulfate compound) was used. Experience with the operation of landfill Cell 4 indicates that the landfill leachate normally meets discharge permit limits without pretreatment. A leachate pretreatment system is provided to accommodate pretreatment of the leachate as necessary. Monitoring of leachate discharge quantities and quality is also accomplished via the pretreatment facility.

The leachate pretreatment system is designed to treat the leachate and discharge an effluent which complies with permitted limitations. The leachate pretreatment system consists of leachate storage tank, transfer pumps, mixing tanks, chemical storage and feed equipment, effluent discharge pumps, and an effluent flow meter. The facilities are housed within a pre-engineered metal building.

## 2 PERMITS AND STANDARDS

### 2.1 Wastewater Discharge Permit

Delaware Recyclable Products, Inc. is authorized by New Castle County Permit Number WDP 89-076, Revision 9, issued on November 5, 2016 to discharge treated waste water to the New Castle County Sewer System. A copy of the permit for this facility is attached in **Appendix A**.

The permit is issued in accordance with the provisions of New Castle County Code, Chapter 38.02.700, entitled “Regulation of Non-Domestic Wastewater Discharges into the Public Sewer System.” A copy of the code is attached in **Appendix B**. The code includes effluent limitations in addition to those included in the permit.

Any questions concerning the permit or above referenced code should be directed to New Castle County at:

Environmental Compliance Manager  
 Department of Special Services  
 187A Old Churchman’s Road  
 New Castle, DE 19720  
 (302) 395-5700

### 2.2 Effluent Limitations

The pretreated effluent shall comply with the following limitations:

**Table 2-1 Effluent Limitations**

<u>Parameter</u>	<u>30 Day Average</u>	<u>Maximum Daily</u>
Flow	151,000 gpd	300,000 gpd
Hydrogen Sulfide	1.00 mg/L	10.00 mg/L
Total Toxic Organics (TTO)	N/A	10.00 mg/L
Ammonia (NH <sub>3</sub> -N)*	200 mg/L	300 mg/L
BOD	629.67 lb/day	944.51 lb/day
TSS	629.67 lb/day	944.51 lb/day
pH**	6-9	6-9
Arsenic	0.24 lb/day	0.36 lb/day
Cadmium	0.09 lb/day	0.13 lb/day
Chromium	0.1 lb/day	0.15 lb/day

<u>Parameter</u>	<u>30 Day Average</u>	<u>Maximum Daily</u>
Copper	0.15 lb/day	0.225 lb/day
Cyanide	N/A	0.74 lb/day
Mercury	0.0072 lb/day	0.01077 lb/day
Molybdenum	Report	Report
Nickel	1.26 lb/day	1.89 lb/day
Lead	0.06 lb/day	0.09 lb/day
Selenium	0.82 lb/day	1.23 lb/day
Zinc	1.259 lb/day	1.889 lb/day

\* Ammonia variance in place

\*\* included in Chapter 38

### 2.3 Monitoring and Reporting

A copy of the Periodic Self-Monitoring Report is attached to the permit and included in Appendix A. The effluent constituent monitoring schedule is included on Page 3 of 8 in the permit.

A report containing the results of the monitoring program shall be submitted by January 31<sup>st</sup> and July 31<sup>st</sup> of each year for the previous six-month period. The reports shall be submitted to the Environmental Compliance Manager for New Castle County at the above referenced address.

### 2.4 Non-Compliance Notification Requirements

1. Notify New Castle County Department of Public Works if the discharge is not in compliance with the permit. Notification shall be by telephone to 395-5728 or 395-5700 within 24 hours of the occurrence and in writing within 5 days.
2. Notify New Castle County Department of Public Works at the above telephone numbers if the discharge contains any slug loading of any pollutant at a flow rate or concentration likely to cause interference with the County system.

### 2.5 Records Retention

All records and information relative to the operation of the pretreatment facility shall be retained for a minimum of three (3) years.

### **3 PERSONNEL**

#### **3.1 Plant Staffing Requirements/ Staffing**

The treatment facility shall be staffed by one licensed wastewater treatment operator. The certification of the operators shall meet both DNREC and other agencies' requirements.

#### **3.2 Operator Certification**

Each wastewater treatment plant in Delaware is classified by DNREC who assigns the minimum certification level required of the Operator to run a facility of a given type and class.

The Delaware Recyclable Products pretreatment plant requires the plant operator to hold, as a minimum, a Level 1 certificate.

#### **3.3 Operator Responsibility**

The treatment facility will be staffed by a single operator and managed by the staff of Delaware Recyclable Products, Inc.

1. Know proper operational procedures.
2. Operate the treatment system effectively.
3. Keep continuously informed of the best operating and maintenance practices.
4. Participate in short courses and schools when available.
5. Subscribe to and regularly read several of the periodicals related to leachate and wastewater treatment.
6. Maintain accurate and neat system operational and maintenance records.
7. Use sound judgment in the expenditure of operating funds.
8. Keep management advised of potential major problems in operation and maintenance of the system.
9. Assist supervisors in preparing an adequate budget.
10. Be aware of safety hazards connected with wastewater treatment.
11. Be prepared to discuss plant operation with plant visitors.
12. Know expected efficiencies of all unit operations and processes in the collection and treatment system and how to monitor these units.
13. Draft and submit reports to the Department.
14. Collect and preserve samples.

The wastewater system operator will be available at the site at a regular schedule and at any time an emergency situation may arise.

### **3.4 Operator Training**

Continued training of the plant personnel is important to ensure a knowledgeable staff capable of handling a variety of problems or changes in operation conditions.

The operator may receive further instruction from:

1. Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue, N.W., Washington, DC 20037.
2. Manual of Instruction for Wastewater Treatment Plant Operators, New York State Department of Environmental Conservation, Health Education Service, Inc., P.O. Box 7126, Albany, NY 12224.
3. Local short courses and seminars.
4. State initiated short courses (DNREC representatives will communicate these activities).

Suggested reading materials are:

1. WPCF Journal
2. Water and Wastewater Management magazine
3. Manual of Practice (MOP 11) from the WPCF
4. EPA Technology Transfer Series

## **4 SYSTEM DESCRIPTION**

The following are descriptions of the major components of the Groundwater Collection System, the Leachate Collection System, and the Leachate Pretreatment System for the landfill. Please note that each piece of equipment has an operation and maintenance manual provided by the manufacturer. These documents are bound and made part of this operation and maintenance manual by reference and are maintained at the site. The Operator shall look at the individual manuals for trouble shooting guidance.

### **4.1 Groundwater Collection System**

The groundwater collection system is presented in Figure V-E-1.

#### **4.1.1 Relationship to Other Units**

The groundwater collection system lies beneath the landfill liner and provides the rising groundwater a drainage relief in order to maintain separation between the groundwater and the landfill base liner.

#### **4.1.2 System Description**

A groundwater control system has been constructed underneath the liner in Cells 4 and 5 in order to maintain groundwater levels below the landfill liner and subgrade elevation. This system, which is shown on the Permit Drawings, consists of a 6-in. sand drainage blanket that discharges into collection trenches that flow to sumps along the perimeter of Cells 4 and 5. From these sumps, a submersible pump removes the collected groundwater and discharges a portion of it into perimeter drainage channels that convey flow to the stormwater management ponds and a portion discharges to the leachate forcemain.

In addition, a groundwater interceptor trench was constructed along the eastern limit of Cell 5 to collect potentially contaminated groundwater from a toe drain on the western edge of Cells 1 through 3 (which are unlined) at the DRPI Landfill. Liquids collected in the groundwater interceptor trench are managed as leachate in the leachate management system described above.

In 2007, a groundwater interceptor trench and barrier wall were approved for installation along the eastern border of Cell 4B, the eastern and southern border of Cells 1-3 and along the southern border of Cell 5E. The intent of the trench is to reduce groundwater flow beneath Cells 1 through 5 and reduce the amount of pumping at other facility drains. The drain consists of approximately 4,000 feet of 12 inch diameter perforated pipe placed in an aggregate filled trench. The drain line elevation drops from approximately 23' MSL at its highest point to approximately 13' MSL at the discharge point near the southwest corner of Cell 5E. A barrier wall measuring approximately 1,000 feet will be installed in conjunction with the trench along the east side of Cell 4B and Cell 3.

The construction of the trench and barrier wall will occur in three phases to correspond with cell construction. The first phase of interceptor trench measuring approximately 1,500 feet was built in 2007 from the outfall to a point east of the Cell 6-1A construction limits. The second phase of interceptor trench measuring an additional 1,500 feet was constructed in 2012 from the tie-in of the first phase to the eastern corner of Cell 1. The outfall is sampled in accordance with the requirements identified in the current Solid Waste Facility Permit. The barrier wall along the east side of Cell 4B and Cell 3 will be completed in the future once planning has been completed, construction of the barrier wall would impact the access to the site along Marsh Lane.

### **4.1.3 Major Components**

#### **Pumps**

Manufacturer: EPG Companies, Inc.  
Model: WSDPT8-4 SurePump wheeled s/s sump drainer  
Motor: 1 HP (minimum), 460 volts, 3 phase  
Capacity: 40 GPM at 75 ft TDH  
Number: 2 (one at each subcell 4A and 4C)

The groundwater pumps are submersible type pumps which are wheel mounted for installation in sideslope risers. The pump has a built-in check valve to prevent back flow at completion of pumping cycles. A 1/8 inch stainless steel cable is attached to the pump for removal and servicing. Pump types may vary depending on removal requirements or manufacturer updates.

#### **Control Panel**

Manufacturer: EPG Companies, Inc.  
Model: L925PT PumpMaster  
Controller: LevelMaster for two pump operations  
Power: 460 volt, 3 phase, with 115 volt control transformer for convenience outlet  
Disconnect Switch: 40 amp  
Lights: Running light, motor overload light, and power fault light  
Standby Power: Transfer switch for portable generator hook-up  
Level Sensor: Submersible pressure transmitter with 4-20 mA output to controller

The LevelMaster is designed for and can operate two pumps simultaneously, although, the normal operation at the landfill is for one pump to operate at each subcell. Pumps are installed at subcells 4A, 4C, 5A, and 5D. Subcell 4B north has a space in the panel to operate another groundwater pump if needed. The controllers use a submersible pressure transmitter to monitor and control the levels in the groundwater sumps. The operating levels can be adjusted by following the procedure outlined in the EPG Companies, Inc. Operation and Maintenance Manual. The control panel may be modified, as needed, to meet site or manufacturer requirements.

### **Flow Meter**

Manufacturer: EPG Companies, Inc.  
Model: 52EP 150 Series  
Type: Paddlewheel  
Functions: Indicate and totalize flow (8 digit)

The liquid flow meter is located in the discharge piping within the fiberglass vault and the digital display is in the control panel. The setup procedures for the flow meter are contained in the EPG Companies, Inc. Operation and Maintenance Manual. The paddlewheel type flow meter may be modified, or a different flow meter type used, as needed, provided it meets equivalent measurement accuracy.

## **4.2 Leachate Collection System**

The leachate collection system is shown in Figure V-E-1.

### **4.2.1 Relationship to Other Units**

The leachate collection system is approximately 5 feet above the groundwater collection system. The two are separated by 5 feet of compacted fill material and a 60 mil HDPE liner.

The leachate collection system is above the main landfill liner and provides for the removal of leachate from the landfill and the transmission of it to the leachate storage tank for pretreatment prior to discharge to the New Castle County sanitary sewer system.

### **4.2.2 System Description**

The leachate collection systems in Cells 4, 5 and 6 consist of a geomembrane liner covered by a geosynthetic drainage composite throughout all cells. Leachate from the drainage layer discharges to individual collection trenches within each cell. These trenches contain a 8” perforated HDPE pipe at a 1 percent slope to the leachate collection sumps on the inside perimeter of the starter dike. The 8” trench drain pipe discharges to the sump but continues up the inside slope as cleanout riser for the leachate collection trenches. Each subcell contains a leachate collection sump with an 18” HDPE riser and submersible pump. The pumps discharge through a 2” diameter hose and 2” PVC pipe within the riser and leachate vault through an air/vacuum release valve and flowmeter. Outside the vault, the discharge lateral is connected to a 3” or 4” diameter forcemain that runs along the perimeter of the landfill. The forcemain discharges to the leachate storage tank at the northwest corner of the site.

The leachate collection system for Cells 1, 2, and 3 consists of a collection trench along the western toe of the cells which drains to a manhole approximately at the center of the north side adjacent to Cell 4. The trench along the western toe drains to the Cell 5 “interceptor trench” which drains to

a sump with an 18” diameter HDPE riser. The riser contains a submersible pump which discharges through a 3 inch forcemain along the western side of Cell 4 to the leachate storage tank.

The leachate collection system in the Cells 1-3 overlay liner area drains through leachate corridors and connects into the leachate collection piping system in Cell 6 which ultimately discharges through the sideslope riser in Cell 6.

### **4.2.3 Major Components**

#### **Pumps**

Manufacturer: EPG Companies, Inc.  
Model: WSDPT 5-4 SurePump wheeled s/s sump drainer  
VSDPT 5-3 SurePump wheeled s/s sump drainer  
WSDPT 8-4 SurePump wheeled s/s sump drainer

The pumps are submersible type pumps which are wheel mounted for installation in sideslope risers. The pump has a built in check valve to prevent back flow at completion of pumping cycles. A 1/8 inch stainless steel cable is attached to the pump for removal and servicing. Pump types may vary or be modified, as needed, depending on site requirements.

The cut sheets for the pumps are available at the Site.

#### **Control Panel**

Manufacturer: EPG Companies, Inc.  
Model: L925PT PumpMaster  
Controller: LevelMaster for two pump operations  
Power: 460 volt, 3 phase, with 115 volt control transformer for convenience outlet  
Disconnect Switch: 40 amp  
Lights: Running light, motor overload light, and power fault light  
Standby Power: Transfer switch for portable generator hook-up  
Level Sensor: Submersible pressure transmitter with 4-20 mA output to controller

The LevelMaster is designed for and can operate two pumps simultaneously, although, the normal operation at the landfill is for one pump to operate at each subcell. The controllers use a submersible pressure transmitter to monitor and control the levels in the groundwater sumps. The operating levels can be adjusted by following the procedure outlined in the EPG Companies, Inc. Operation and Maintenance Manual. The leachate sumps are equipped with Pump On, Pump Off, and High Level Alarm set points. The set points vary between locations. The control panel may be changed or modified to meet site or manufacturer requirements.

### **Flow Meter**

Manufacturer: EPG Companies, Inc.  
Model: 52EP 150 Series  
Type: Paddlewheel  
Functions: Indicate and totalize flow (8 digit)

The liquid flow meter is located in the discharge piping within the fiberglass vault and the digital display is in the control panel. The setup procedures for the flow meter are contained in the EPG Companies, Inc. Operation and Maintenance Manual. The paddlewheel type flow meter may be modified, or a different flow meter type used, as needed provided it meets equivalent measurement accuracy. The discharge flow meter is calibrated annually (minimum) in accordance with the discharge permit.

## **4.3 Leachate Pretreatment System**

The leachate pretreatment system is shown in Figure V-E-2.

### **4.3.1 Relationship to Other Units**

Leachate is pumped from the landfill to the leachate storage tank and mixing tanks for pretreatment prior to discharge to the New Castle County sanitary sewer system. The leachate tank area is shown in Figure V-E-3.

### **4.3.2 System Description**

Raw leachate is collected in a 64,783 gallon nominal capacity leachate water storage tank adjacent to the pretreatment building.

Leachate is discharged through dual 100 gpm effluent pumps through 4" PVC pipes to the pretreatment building where the leachate is treated by injection, runs through a mag meter, air gap relief valve and ultimately discharges to the gravity sanitary sewer system. The injection point and potential mixing zones for the chemical can be changed to ensure maximum effectiveness prior to discharge to achieve discharge parameters.

### **4.3.3 Major Components**

#### **Storage Tank**

Manufacturer: MidAtlantic Storage System, Inc.  
Capacity: 64,783 gallons (nominal), 56,746 gallons (usable)  
Material: Factory coated bolted carbon steel

**Air Valve**

Manufacturer: A.R.I. Flow Control Accessories  
Model: D-025 Combination Air Valve for Wastewater

**Pump Controller**

Manufacturer: Mercoid  
Model: Series MPCJR Pump Controller

**Pump**

Manufacturer: HOMA Pump Technology  
Model: A Series

The major components to the leachate pretreatment system may be updated with equivalent products to replace components during maintenance activities.

## **5 SPECIFIC PLANT OPERATION**

### **5.1 Groundwater Collection System**

#### **5.1.1 Normal Operation**

Groundwater submersible pumps located at Subcells 4A, 4C, 5A, and 5D pump groundwater collected in sumps from the internal perimeter trench drain to perimeter ditches on the exterior of the landfill. Water in these ditches flows by gravity from Subcell 4A to a sediment basin at the northeast corner of the landfill. Subcells 4C, 5A and 5D drain by gravity to a sediment basin located at the northwest corner of the landfill. The portions of the groundwater underdrains that discharge to the leachate forcemain are as follows: 1) Horizontal drain that slopes from west to east separating Cells 3 and 4, the purpose is to intercept any liquid from Cell 3 and prevent it from migrating north under Cell 4; and, 2) Horizontal drain that slopes from south to north along the entire west side of Cells 1, 2 and 3 between Cell 5, intercepting westward flow from Cells 1, 2 and 3 and preventing migration under Cell 5.

Under normal conditions, the pumps are automatically controlled by a submersible pressure transmitter mounted on the front of the pump and the level controller in the control panel at each pump location.

The groundwater sumps are equipped with Pump On, Pump Off, and High Level Alarm set points. The set points vary between locations. The high level alarm is a red light mounted on the control panel.

An 18-inch diameter HDPE side slope riser connects the sump in the landfill with a fiberglass vault on the outside of the landfill starter dike. This riser and vault allows for the submergence of the pump into the groundwater sump and for the discharge piping to the ditch.

Located inside the fiberglass vault is an air/vacuum release valve and flow meter. The release valve allows air in the discharge pipe to be released when the pump comes on and prevents the discharge pipe from becoming air bound. The valve also allows air to enter the pipe when the pumps shut off and water flows back to the sump causing a vacuum condition.

The flow meter mounted in the discharge piping indicates water flow and also totalizer flow from the pump at the digital display in the control panel.

#### **5.1.2 Operator's Duty**

The operator alleviates problems by checking the system on a regular basis and filling out the daily underdrain inspection log found at the end of this section.

Operator shall check control panel for groundwater pump operation and alarms each day. Air release valves should be checked weekly and purged as required. Operator shall correct all malfunctions as soon as they are discovered. Operator shall travel along the groundwater perimeter ditch each day and check for ditch blockage, cave ins and other possible malfunctions.

### **5.1.3 Alternate Operation**

If required, the operator can manually activate the pumps by using the hand-off auto selector switch. Submersible pumps may also be installed in adjacent cells should additional groundwater pumping be required.

### **5.1.4 Emergency Operation**

No emergency power is supplied to the groundwater pumps. However, a portable emergency generator can be supplied and connected at the control panel with a wiring harness. Generator change over switch is provided with each control panel.

### **5.1.5 Common Operation Problems**

Common operation problems include clogging of the collection trenches, loss of power, plugged pumps, or malfunctioning pumps. The operator helps alleviate problems by checking the system on a regular basis. Pump operational problems are reduced by preventative maintenance as discussed later in this manual, and by addressing alarm conditions as required. The wheel assemblies on the pumps allow the pumps to be removed from the sideslope risers for servicing. A portable emergency generator can be connected to the transfer switch in the event of a power outage. Sideslope cleanout risers are provided and can be back flushed should the individual collection trenches become clogged.

## **5.2 Leachate Collection System**

### **5.2.1 Normal Operation**

Leachate submersible pumps located at Cell 3 East, Cell 3 West, Cell 4 subcells and Cell 5 subcells pump leachate collected in sumps from cell trenches through a force main to the leachate storage tank at the pretreatment facility.

Under normal conditions the pumps are automatically controlled by a submersible pressure transmitter mounted on the front of the pump and the level controller in the control panel at each pump location. The leachate sumps are equipped with Pump On, Pump Off, and High Level Alarm set points. The set points vary between locations. The High Level alarm is a red light mounted on the control panel.

An 18- to 24-inch diameter HDPE side slope riser pipes connects the leachate sump in the landfill with a fiberglass vault on the outside of the landfill starter dike. This riser and vault allows for the submergence of the pumps into the leachate sumps and containment of the discharge piping from the pumps to the double walled lateral under roadways to the perimeter forcemain.

Located inside the fiberglass vault is an air/vacuum release valve and flow meter the release valve allows air in the discharge pipe to be released when the pump comes on and prevents the discharge pipe from becoming air bound. The valve also allows air to enter the pipe when the pumps shut off and water flows back to the sump causing a vacuum condition.

The flow meter mounted in the discharge piping indicates water flow and also totalizer flow from the pump at the digital display in the control panel.

### **5.2.2 Operator's Duty**

The operator alleviates problems by checking the system on a regular basis and filling out the daily leachate inspection logs found at the end of this section.

Operator shall check the control panel for leachate pump operation and alarms each day. Air release valves should be checked weekly and purged as required. Operator shall correct all malfunctions as soon as they are discovered. Operator shall travel along the forcemain route weekly and inspect the route for unusual conditions that may occur due to a forcemain rupture.

### **5.2.3 Alternate Operation**

If required, the operator can manually activate the pumps by using the hand-off Auto selector switch.

### **5.2.4 Emergency Operation**

No emergency power is supplied to the leachate pumps. However, a portable emergency generator can be supplied and connected at the control panel with a wiring harness. A generator change over switch is provided with each control panel.

### **5.2.5 Common Operation Problems**

Common operation problems include clogging of the collection trenches, loss of power, plugged pumps, or malfunctioning pumps. The operator helps alleviate problems by checking the system on a regular basis. Pump operational problems are reduced by preventative maintenance as discussed later in this manual, and by addressing alarm conditions as required. The wheel assemblies on the pumps allow the pumps to be removed from the sideslope risers for servicing. A portable emergency generator can be connected to the transfer switch in the event of a power

outage. Sideslope cleanout risers are provided and can be back flushed should the individual collection trenches become clogged. The submersible pumps can also be installed in the 12" risers of adjacent cells should additional leachate pumping be required.

## **5.3 Leachate Pretreatment System**

### **5.3.1 Normal Operation**

Leachate from the forcemain is collected in a 65,000 gallon storage tank adjacent to the pretreatment building. The tank is surrounded by a containment dyke that will hold 110% of the tank's volume in the event of a tank rupture. Excessive stormwater in the diked area from a heavy rainfall is pumped with a portable pump to the sediment basin. The Operator samples the stormwater prior to discharge for leachate contamination. A level sensor is provided and mounted on the outside of the storage tank and will terminate power to all pumps and alert the operator to a high water condition created by stormwater, tank overflow or tank rupture.

The leachate level in the storage tank is measured with a liquid level sensor that transmits the information to the PLC (programmable logic controller).

A "high-high" level in the storage tank will shut down the leachate collection pumps in the landfill and prevent the storage tank from overflowing. Power to the leachate pumps is restored when the tank level is below the 85% mark

A "low" level in the tank will shut down the leachate transfer pumps to the mixing tanks and prevent the pumps from running dry.

The pretreatment system runs automatically when the leachate level in the storage tank is above the "low" level or below the "high" level. The general sequence is as follows:

- a. The forcemain pumps leachate to the storage tank.
- b. The two pumps in the storage tank pump leachate continuously through the pretreatment building where there is a chemical injection point.
- c. The amount of chemical injection varies depending on flow through the building.
- d. The operator samples the effluent and tests the water for pH (daily). There is an automatic hydrogen sulfide detection system however the operator may also test for hydrogen sulfide manually. The pH range shall be between 6 and 9. The hydrogen sulfide maximum daily limitation is 10.00 mg/L in accordance with the New Castle County Discharge Permit.
- e. Water being discharged to the sewer is registered by the discharge flow meter and recorded by the operator.

### **5.3.2 Operator's Duty**

The operator records discharge to the County sewer on a daily basis on the leachate disposal log provided at the end of this Section. The amount of sodium hypochlorite (or Odophos or alternate product) used to achieve discharge limits is logged daily.

### **5.3.3 Alternate Operation**

The site may elect to implement facility improvements to continue to meet New Castle County Discharge requirements. Revisions to the above process may include relocating the injection point for chemical feed, inclusion of a SCADA system, revisions to chemical selection or other necessary upgrades to meet and achieve the discharge standards for the New Castle county discharge permit.

### **5.3.4 Emergency Operation**

No emergency power is available at the pretreatment plant. If there is a power failure to the site, groundwater or leachate will be stored in the leachate collection system until power has been restored.

### **5.3.5 Common Operation Problems**

Common operation problems include loss of power, plugged or malfunctioning pumps, broken mixers, inoperative level controllers, etc. The operator alleviates problems by checking the system on a regular basis and exercises preventative maintenance practices.

Waste Management - DRPI Landfill BU# 1307, Site # S03260  
 Monthly Operations Report

Month: Year: 2019

Day	Operator	Time	Day of Week	Leachate Storage Level In Feet	Influent Pump on/off	Grab Sample Taken	Odophos Storage Tank In Feet	Effluent Meter Gallons	Flow Rate Gal/Min	H2S ppm	Average Daily Flow Gal/Day	Ph Analyzer	Ph Temp Fahrenheit	Comments
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
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29														
30														
31														

Waste Management - DRPI Landfill BU# 1307, Site # S03260  
 Ph Calibration Record

Month: Year: 2019

Day	Operator	Time	Day of Week	Calibrated	Standard Lot Number	Expiration Date	Standards Used	Ph Reading	Ph Temp	Comments
				Yes/No			4-7-10		Fahrenheit	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
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## **6 TESTING**

### **6.1 Purpose**

Testing is required at the Leachate Pretreatment facility for several reasons. (1) The control of treatment processes can be evaluated and maintained with data. (2) A record of the facilities operational data allows further study and possible efficiency improvement. (3) Testing also aids in the analysis of problems and their preventions.

The testing program provides the basis for process control and produces a record of how the treatment facilities are operating. This information keeps the operating personnel informed of plant efficiencies and helps in predicting problems that may be developing in the system. Because test results are a record of plant performance, they are often evaluated by governing and/or regulatory bodies. For these reasons, it is essential that a treatment system's testing program produce complete records and accurate results.

#### Personnel

The operation of the system will be the responsibility of the facility's operator. All parameters which are required to be monitored and reported by Wastewater Discharge Permit and Chapter 38 are also the responsibility of the Operator.

### **6.2 Sampling Program**

The value of results from testing is dependent upon the sample being representative of the source from which it was taken. There are two types of samples taken for wastewater analyses. Their definitions follow:

#### **6.2.1 Composite Sample**

A combination of individual samples taken at selected time intervals, for some specified period, to minimize the effect of the variability of the individual samples. The individual samples may be of equal volume or proportional to wastewater flow rate at time of sampling.

#### **6.2.2 Grab Sample**

A single sample taken at neither set time or flow.

The following is a list of general guidelines for sampling leachate:

1. Samples should be taken at locations where the wastewater is as completely mixed as possible

2. Particles greater than one-quarter inch in diameter should be excluded when sampling.
3. Any floating materials, growths, etc., which may have collected at a sampling location should not be included when sampling.
4. If samples are to be kept for an hour or more prior to testing, they should be refrigerated or immersed in ice water to retard bacterial action.
5. Proper sampling equipment should be used, and safety precautions should be exercised during all sampling.
6. Consideration should be given to the relationship between the plant's daily flow variation and detention time through the units so that influent and effluent samples relate to the same waste.

### **6.3 Testing**

Shall be performed in accordance with the requirement as listed in the Wastewater Discharge Permit (Appendix A) and Chapter 38 (Appendix B).

## 7 RECORDS

### 7.1 Process Operations Records

An important factor in any efficient treatment system is the maintenance of accurate operational and financial records. Without a record of past operational performance, it is impossible to identify trends in any process. Operating cost records are essential if meaningful budgets are to be prepared. Accurate records permit plant operating personnel and management to maintain control of their facility. The records are to be kept at the treatment plant and Delaware Recyclable Products, Inc. office.

The principal types of records discussed in this chapter include:

1. Daily Log
2. Semi-Annual Report

Detailed descriptions of laboratory, maintenance, and safety records are provided in the chapters of this Manual dealing with these topics.

The Daily Log should contain:

1. Facility discharge flow (GPD).
2. Leachate tank storage level.
3. Chemical storage tank level (Sodium hypochlorite, Odophos, etc).
4. pH
5. Visual assessment of influent and effluent.
6. Any miscellaneous items, such as:
  - a. Routine operational duties.
  - b. Unusual conditions (operational and maintenance).
  - c. Accidents to personnel.
  - d. Complaints (odor, etc.).
  - e. Power consumption.
  - f. Plant visitors.

The Monthly Operating Log for daily readings is contained in Section 5.

Maintenance records are described in Section 8 of this O&M Manual.

Operations data is to be completed by the plant operator.

## **8 MAINTENANCE**

### **8.1 General**

The maintenance of the pretreatment facilities assures quality and efficient operations. The maintenance management system must be kept up-to-date and the operator must perform the daily, routine items of maintenance as well as the monthly, bi-annual, and annual items. The equipment manuals in the pretreatment building shall be consulted for the manufacturer's recommendations concerning necessary maintenance. The manuals include preventive maintenance items, spare parts suggestions, and warranties.

The maintenance management system described below is straight forward but is intended to remain flexible. This allows the operator to efficiently maintain the plant. The system includes:

1. Planning and scheduling
2. Inventory system
3. Costs and budgets for maintenance

### **8.2 Maintenance Schedules**

Maintenance is divided into two types; lower and upper echelon. The operator is expected to perform lower echelon maintenance while contracted services are usually required for the more specialized upper echelon maintenance.

Lower echelon maintenance includes:

1. Housekeeping duties
  - a. Pretreatment building cleaning
  - b. Pump station cleaning
  - c. Trash removal
  - d. General site cleaning
  - e. Collection system cleaning

Housekeeping duties will receive the same attention to detail as equipment maintenance. Cleanliness and neatness provide two important functions; safety is enhanced, and public acceptance of the facility is enhanced.

## 2. Daily checklist

During the course of the day the operator will routinely check the equipment. They should note any unusual conditions that he observes during his inspections; and refer to the vendor manual for instruction for this condition. At the end of each week the operator should note the running hours of each piece of equipment and plan the servicing required for the next week. The operator should refer to each individual equipment manual for specific preventative maintenance procedures.

### **8.3 Preventative Maintenance**

Preventative maintenance is defined as the following basic activities:

1. Periodic inspection of plant assets and equipment to uncover conditions leading to production breakdowns or harmful depreciation.
2. Upkeep of plant to avoid such conditions or to adjust or repair them while they are still minor.

When determining the type of preventative maintenance program that should be done at a treatment plant, the operator should determine where downtime is the most critical. The cost of preventative maintenance might be high, but the costs and results of downtime are even higher. Preventative maintenance is not the cure-all for excessive downtime and maintenance costs. However, it can unquestionably reduce these costs. The following are some of the returns of a good preventive maintenance program.

1. Less downtime or bypassing equipment.
2. Less overtime pays for manpower on ordinary adjustments and repairs than for breakdown repairs.
3. Few large scales repair.
4. Lower repair costs for simple repairs made before breakdowns, because less manpower, fewer skills, and fewer parts are needed for planned shutdowns than for breakdowns.
5. Greater safety for workers leading to lower compensation and insurance costs.

### **8.4 Inventory System**

The Operator will maintain a list of tools and spare parts stored at the facility for use in the collection and treatment systems. This list must be frequently updated by the operator.

### **8.5 Maintenance Costs and Budgets**

Maintenance costs will be recorded by information received via work logs and purchase orders.

The operator is responsible for logging his maintenance daily. The log will report the service category for the work:

1. Preventative maintenance
2. Corrective maintenance
3. Major repair or alteration

Also, the log will report the time spent by the operator on the work item, purchase orders utilized for the work item, and the need for contracted services (if any).

## **8.6 Warranties**

The treatment plant and equipment will operate under certain warranties as described in the construction Contract Documents. The operator must review these warranties. Alterations to equipment under warranty should be avoided without consent from the guarantor. Equipment not regularly in service during the warranty period should be operated periodically and should still be maintained. Improper operation may void a warranty.

## **8.7 Manuals**

All equipment is fully described by the manuals kept onsite in the pretreatment building. The descriptions include warranties, lubrication schedules, interchangeable lubricants and maintenance instructions. These manuals are kept at the office of the treatment plant.

## **9 EMERGENCY OPERATIONS AND RESPONSE**

### **9.1 Emergencies**

Emergencies at the Delaware Recyclable Products Center Pretreatment Plant can arise from natural disasters, criminal action; and equipment malfunctions. The following items are made part of the Emergency Operating and Response Program.

1. The County's sewer use ordinance protects the pretreatment facilities from improper discharges to the sewer system that may cause an emergency. If such a discharge is detected, notify the fire, police, and regulatory agencies, as required.

In the event of a power outage, groundwater and leachate are temporarily stored in the collection system.

2. If the operator sees or suspects any problems with the pretreatment plant or the collection system which threaten the environment, he must contact the following:
  - a. DNREC; Emergency Response and Reporting
  - b. Affected Residences

### **9.2 Vulnerability Analysis**

#### **1. Collection system**

The vulnerable part of the system is anywhere mechanical equipment could fail, i.e., at the groundwater or leachate pump stations. The pump stations are equipped with warning lights to warn the operator if there is an alarm condition at the station. The following are alarm conditions at the pump station:

- a. Power failure.
- b. High water alarm.

#### **2. Pretreatment Plant**

It is important for the operator to maintain two (2) sets of files for all reports, drawings, O & M manuals, and correspondence. One file shall be kept off-site and the other at the pretreatment plant. This will prevent total loss if there is a fire or other natural disaster harming one set of documents.

### 3. Emergency Aid

The Minquadale Fire Company can be reached by calling 9-1-1 for providing fire protection for the plant. The Wilmington or Christiana Hospital have emergency care facilities.

### 4. Flood

The treatment plant and pump station are above the level expected from the flood of a hundred-year storm.

### 5. Fire

In the event of a fire, the Operator should take the following steps in the order shown.

1. Analyze the problem and use fire extinguishers provided at the plant or call the fire department.
2. Evacuate the building. Do not expose yourself to injury.

The area of concern during a fire are the pretreatment building.

### 6. Windstorm

If a windstorm should strike the plant, the operator should assess the damage; and, if damage is severe enough to cause noncompliance or permit conditions, the operator should inform both the County and DNREC of the nature and extent of the damage. Steps should be taken immediately to return the plant to full operating efficiency.

### 7. Explosions

Because of the possible presence of explosive gases in the sewers, care should be taken to prevent explosions by following the safety practices outlined in Section 10 - Safety. If an explosion should occur, the Operator should immediately contact the fire company and with them investigate to determine if anyone was injured and is in need of help. Whatever the damage, the system should be returned to service as quickly as possible.

#### 8. Unwanted Discharge into or at the Treatment Plant

Accidental discharges should be reported to the treatment plant personnel by the persons responsible for the discharge. See emergency response procedure to leaks, spills and releases at the end of this Section.

#### 9. Impoundment Failure and Flooding

The emergency procedure followed when there is flooding of the areas has been developed by the fire company.

### **9.3 Emergency Telephone Numbers List**

The table which follows shows a list of emergency phone numbers which should be posted in a conspicuous place. The list should be continually updated and verified.

**Table 9-1 Emergency Phone Numbers**

## **EMERGENCY PHONE NUMBERS**

<b>PHYSICIAN</b>	Spectracare Newark Emergency Room Newark, DE (302) 738-0103	Or	Spectracare Wilmington Hospital Wilmington, DE (302) 738-0103
<b>HOSPITAL</b>	Wilmington Hospital Wilmington, DE	Or	Christiana Hospital Newark, DE
<b>AMBULANCE</b>	911	Or	
<b>FIRE DEPARTMENT</b>	911	Or	
<b>POLICE</b>	911	or	

**POST IN A CONSPICUOUS LOCATION, IN ACCORDANCE WITH OSHA REG.1926.50**

## **10 PRETREATMENT PLANT SAFETY**

### **10.1 Discussion**

In this section, the focus will center on the causes of accidents, the identification of unsafe working conditions and the need for individual facility safety programs to promote the status of safety in the treatment plant.

### **10.2 Safety Program**

What is a safety program? A safety program can be defined as a plan of action for enlisting and maintaining the support of all the personnel of an organization for the purpose of preventing accidents. An effective safety program is one in which all personnel understand their roles, and in which the lines of responsibility and authority are clearly defined.

These seven basic elements of a safety program are:

1. Management leadership
2. Assignment of responsibility
3. Maintenance of safe working conditions
4. Establishment of safety training
5. An accident record system
6. Medical and first aid systems
7. Acceptance of personal responsibility by employees

To carry on an effective safety program, there should be: 1) safety meetings; 2) safety inspections; and 3) safety training. The meetings should be held frequently, kept relatively short (e.g. "tail-gate sessions") and be interesting. Safety inspections should be conducted continually as a normal work activity. (This generally requires each worker to take a few seconds upon entering a room to observe the conditions before going any further, or to take a few seconds to review the safe work procedures before starting a task.)

The main ingredient in the safety program, however, is safety training. It is essential that supervisors and workers be trained in the principles of safety, in safe work methods, and in emergency procedures. This training should begin with an introduction of the new employees to the safety program of the organization and follow through to the safe performance of each task under supervision. Each employee should be trained in the basics of first aid, and each supervisor should receive additional training in advanced first aid techniques.

### **10.3 Hazards**

The hazards that cause accidents in treatment plants may be classified as:

1. Physical injuries
2. Noxious gases or oxygen deficiency, explosive atmospheres (gases)
3. Health hazards

## **10.4 Prevention of Physical Injuries**

The major causes of injuries are slips and falls. Tools, parts, and other things should not be left lying around. Grease droppings, oils, sludge, and polymers should be cleaned up as soon as possible. Warning signs, railings, and covers in place can protect against low piping, open tanks and open manholes or hatches. The simple knowledge of proper lifting techniques, bending the knees and lifting with muscles of the legs can save many strained or injured backs.

### **10.4.1 Manholes**

No person may enter a vault, trench, tank, or manhole without checking the area for the presence of hazardous conditions, including obstacles and LFG. Entrance into a confined space may not be made without OSHA confined space training. Persons entering confined spaces must wear a safety harness and rope with an appropriate retrieval device and a second person ready to pull him or her to safety. Before entering a manhole, the confined atmosphere should always be tested for the presence of explosive gases, hydrogen sulfide, and oxygen deficiency. After determining that the conditions are safe for entry, positive forced air ventilation should be started, and operated continually whenever a worker is in the manhole or sewer. Gas composition and concentration will be monitored continuously by sampling of the atmosphere with visual signal alarm device kept near the worker. No smoking is allowed within the limits of the landfill or in confined spaces.

For work in manholes, safety requires full protective measures from traffic hazards as well as from the hazards of explosive gases, hydrogen sulfide, or the lack of oxygen in the manhole or sewer. Warning signs and barricades should be set up at suitable distances on each side of the manhole. On busy streets it may be desirable to station men to flag down and detour fast moving vehicles. On wide streets, the service truck can be stationed on the side of the manhole toward the on-coming traffic. It is important that sufficient workers be provided for the job at hand. There should be at least two men at the top when one goes below. A cage or guard device around a manhole adds protection and aids entering and leaving the ventilation hole or lifting notch. When lifting a manhole cover, a pick-axe may slip and cause injury or, if struck hard, may give off an igniting spark. Unless a cover is very heavy, it is safe for one man to handle it alone.

Before descending into a manhole, notes should be taken of the width, spacing, and arrangement of manhole rungs and, if staggered, particular care must be taken to get started with the proper foot and to avoid falling. Each rung should be tested during descent and weight distributed between feet and arms. Steel rungs may lose their plastic coating and corrode to a dangerous extent. A

safer means of entry would be the use of a manhole ladder. This type of ladder should be carried on the service truck and should extend about three feet above the street surface.

#### **10.4.2 Safety Harness**

On small sewers, no one should enter a manhole deeper than the height of his chin without wearing an approved parachute-type safety harness with rope attached. In an emergency, when a safety belt may not be at hand a stout rope tied snugly under the arms with a bowline or other non-slip knot may be the means of saving a life. In either case, at least two men should be at the top of a manhole at all times when a third man is inside in order to handle the life line and help him out if necessary. The safety harness should also be worn when entering any enclosed spaces around the treatment plant where access is difficult, and assistance may be needed to climb out.

#### **10.4.3 Lighting**

In view of the possibility of flammable gases, safe practice dictates the use of an explosion-proof lamp, several types of which are on the market. Around the treatment plant only ground, explosion-proof extension lamps or explosion-proof portable lamps, should be used in hazardous locations.

#### **10.4.4 Electrical Hazards**

Electrical shock hazards are present in many of the older pumping stations. New types of enclosed switch gear are quite safe, but the older open types of switch boards need to be approached with caution. A rubber mat on the floor is an added safety factor for either type. Grounding of all equipment is essential. Portable power tools should be equipped with ground wire and special outlet and plug. Accidents can be, and have been, caused by such equipment not being grounded. When work is to be done on equipment controlled by a switch located at some distance from the equipment, the switch should be tagged and locked out with a personal locking device to prevent others from closing the circuit. The main precaution in electrical work is to avoid working on any piece of equipment that you have not been trained on, or whose workings are not thoroughly understood.

#### **10.4.5 Other Hazards**

There are numerous hazards that can cause physical injuries in the treatment plant. The reader should consult the WPCF Manual of Practice No. 1, "Safety in Wastewater Works", for additional information.

## **10.5 Noxious Gases or Vapors Explosive Gases and Oxygen Deficiency**

### **10.5.1 General**

Numerous atmospheric hazards can exist in confined spaces in treatment works and sewers. Explosive gases, such as natural gas, may often be present due to leaking natural gas mains or individual service connections. Gasoline vapors may also be expected due to leaking in-ground storage tanks or from gasoline that is intentionally or accidentally spilled into the sewer system. Oxygen deficiency and the presence of hydrogen sulfide are often companion occurrences. This is the result of the biological activity that takes place in a sewer system or in any confined space where wastewater has collected. These are all potentially fatal conditions that are commonplace in "confined spaces."

A few definitions are in order here:

- a. Gas is a state of matter in which the movement of molecules is partially unrestricted.
- b. Vapor is the gaseous phase of a substance which can exist also in the form of a liquid at common -temperatures and pressures. Water vapor and gasoline vapor are examples. A noxious gas or vapor is one that is directly or indirectly injurious or destructive to the health or life of humans. They may cause burns, explosions, asphyxiation or poisoning.

Non-poisonous gases may asphyxiate simply by mechanically excluding oxygen.

- c. Sewer gas is a misnomer since it is not a single gas, but a mixture of gases from the decomposition of organic matter. It is actually gas with a high content of carbon dioxide and varying amounts of methane, hydrogen, hydrogen sulfide and a small amount of oxygen. The hazard is usually from an explosive mixture of methane and oxygen or, more often, from any oxygen deficiency. This definition does not include the extraneous gases or vapors which may be present in sewers especially from gas main leaks or from gasoline or other volatile solvents which frequently find their way into sewers.

### **10.5.2 Oxygen Deficiency and Hydrogen Sulfide**

Air, by volume, normally contains about 21 percent oxygen and 70 percent nitrogen and traces of other gases. An atmosphere containing less than 19.5 percent oxygen by volume is decidedly dangerous to humans. Oxygen deficiency and hydrogen sulfide gas appear to be the leading causes of death in sewers. It is likely that some deaths attributed to hydrogen sulfide may actually have been caused by an oxygen deficiency, while at other times,

deaths attributed to drowning may actually have been caused by hydrogen sulfide poisoning.

### **10.5.3 Explosive Range**

Flammable or burning gases, when mixed with air (oxygen) in certain proportions, will explode violently upon ignition. No explosion will occur when the mixture is outside this range. The minimum concentration of a gas-air or vapor-air mixture which will explode if ignited is known as the lower explosive limit (LEL.), while the maximum concentration for explosion is called the upper explosive limit. These are respectively the leanest -and richest mixtures needed for an explosion. Table 10-1 gives the explosive range of the gases and vapors most apt to be encountered in wastewater work.

### **10.5.4 Hazardous Locations**

The places which are most likely to be dangerous from a noxious gas or vapor situation or oxygen deficiency, and which should be carefully investigated before entering are:

- a. All sewers, particularly if solid manhole covers are used.
- b. Any tightly covered pit, tank or valve chamber, regardless of depth.
- c. Deep tanks and pump suction wells.

### **10.5.5 Characteristics:**

The characteristics of noxious gas and vapors and their most likely source, as well as the conditions leading to oxygen deficiency are given in Table 10-1.

### **10.5.6 Detection**

Detection of any existing gas or vapor hazard and then taking steps to remove or to protect against it are sure ways to prevent accidents and loss of life. Fortunately, a fairly simple method of detection of the common hazards is available at reasonable cost. Tests should be made in the order given below. Samples may be taken through a ventilation hole in a manhole cover, under a cover removed partially, or with the cover entirely removed. Care must be taken in all cases to avoid the creation of sparks. It is wise to continue testing for the entire duration of the activity.

- a. Test for Flammable or Explosive Gases

These gases may be any of those which are explosive as shown in the table. They may be detected by relatively inexpensive combustible gas indicators. These instruments are battery operated units which oxidize or burn a sample of the atmosphere under test over a heated catalytic filament which is part of a balanced electrical circuit. Any combustible gas

or vapor in the tested sample will unbalance the circuit, cause a deflection of an indicating needle to show on a scale the concentration of combustible gases or vapors in the sample. This scale is graduated in percent of the lower explosive limit. For example, if methane alone were present in the sample and the scale pointer read "50 percent", then 2½ percent of methane by volume is present in the atmosphere tested since the lower explosive limit of methane is 5 percent. This would be a hazardous condition and the manhole must be ventilated and retested. In general, readings in excess of 10 percent of the lower explosive limit should be considered hazardous. The sample is obtained by a tube or probe lowered to the desired depth in the structure and a bulb is used to aspirate the sample through the unit or a probe is used to sample the gas directly. The instruments are usually calibrated for petroleum vapors and do not give exact accuracy for other vapors. They are sufficiently close, however, so as to give a degree of accuracy which is adequate for complete safety of personnel.

b. Test for Hydrogen Sulfide

The proper detection device is a battery-operated portable hydrogen sulfide detector which operates with a visual and audible alarm system. Lead acetate devices are seldom used. The action limit for hydrogen sulfide is 5 parts per million (ppm), based on a probable effect level (PEL) of 10 ppm.

c. Test for Oxygen Deficiency

Safe practice dictates the use of a hand-held oxygen deficiency indicator. These direct-reading oxygen indicators are available in portable, battery-operated units contained in an instrument case that may be carried by the worker into the confined space. The indicating dial, similar to a voltmeter, reads from 0 to 25 percent of oxygen by volume. The unit should have a visual and audible signal to indicate that the unit is functioning properly and give a distinctive audible and visual signal during alarm conditions. The sampler and signal should always be located on or near the worker, possible with an additional signal being transmitted outside of the confined space.

d. Unreliable Testing

Relying on the human olfactory system to detect odor alone are considered hazardous procedures. In addition to the desensitizing effect of hydrogen sulfide on the sense of smell, the combination of gases that are usually present in a treatment plant or sewer system are such that the worker is accustomed to sensing a variety of odors. Therefore, the characteristic identifiable odor of a single gas alone may be present.

### **10.5.7 Summary of Safe Practices in Sewers, Pumping Station Wet Wells, and Other Confined Areas**

- a. Condition I. Tests show no hazardous situation as to gases, vapors or lack of oxygen. Workmen entering sewers or confined spaces should wear safety harnesses with at least two men available at the top. Even though tests show no hazards, the situation may change, or the workmen may be injured. No one should smoke within the manhole and sparks should be prevented by the use of non-sparking, beryllium-copper alloy tools. Safety shoes with good traction should be worn and only explosion-proof lighting should be used.

Sampling the atmosphere should begin before entry and continued throughout the working period. Forced air ventilation should also be started before entry and operated continuously.

- b. Condition II. Tests show noxious gases or vapors or oxygen deficiency. The structure should be thoroughly ventilated with extreme care taken to avoid ignition of flammable gas, and retested. No one should enter the confined space until the sampling indicates that the atmosphere is safe for entry. Forced air ventilation and sampling for air quality should be continuous throughout the work period.
- c. Condition III. Tests show a hazardous situation, but an emergency exists which requires immediate entry. Workmen, in addition to the provisions of Condition I, must be wearing appropriate respiratory apparatus. The preferred type is a pressure/demand self-contained breathing unit. Information about the emergency situation should be relayed to the home base prior to entry so that assistance can be provided. All emergency operations should be practiced frequently so that workmen are able to react properly when the emergency situation arises.

## **10.6 Health Hazards**

### **10.6.1 General**

Wastewater facility workers are exposed to a variety of situations that may pose significant health hazards. The wastewater can be expected to contain whatever infections or parasitic disease is present in the service area. Although epidemiologic evidence is sparse, the occurrence of these diseases producing (pathogenic) microorganisms at wastewater facilities is well documented.

### **10.6.2 Personal Habits**

A majority of infections reach the body by way of the mouth, nose, eyes, or ears. Workman's hands should always be washed before smoking or eating. Tetanus inoculations are often recommended, although medical experts should be consulted prior to embarking on any immunization program for, disease prevention.

### **10.6.3 First Aid**

Except for minor injuries, wounds should be treated by a doctor and reported for possible workmen's compensation. Service trucks and treatment plants should have first aid kits, and as many of the personnel as possible should have had Red Cross first aid instruction. No cut or scratch is too minor to receive attention. A two percent tincture of iodine or tincture of methylate should be immediately applied to all wounds or cuts.

### **10.6.4 Wearing Apparel**

Protective clothing should be washed frequently and left at the work place in a locker separate from street clothes. This will minimize the danger of bringing an infectious microorganism home from work. For extremely dirty jobs, such as cleaning wet wells or sewers, rubberized rainsuits that can be washed off with a hose should be used.

## **10.7 Safety Hazards in Operation**

### **10.7.1 Sewers**

Working in sewers, whether for inspection, maintenance, or repairs, is extremely hazardous. The presence of explosive gases, hydrogen sulfide, and the lack of oxygen are conditions that are immediately hazardous to a workmen's life. In addition to these hazards, work done in sewers is usually done with poor lighting, and under cramped, slippery conditions where only one man is available to perform the task. Thorough initial planning of each phase of the work is necessary to safely accomplish these assignments.

No person may enter a vault, trench, tank, or manhole without checking the area for the presence of hazardous conditions, including obstacles and LFG. Entrance into a confined space may not be made without OSHA confined space training. Persons entering confined spaces must wear a safety harness and rope with an appropriate retrieval device and a second person ready to pull him or her to safety. Gas composition and concentration will be monitored at all times during entry. No smoking is allowed within the limits of the landfill or in confined spaces.

### **10.7.2 Testing**

The testing work place must be kept clean and orderly to reduce potential hazards. The operator should be familiar with the chemicals he/she is using since some chemicals have explosive or corrosive characteristics. Biological hazards also exist but can be averted if the operator protects himself by using good personal hygiene practices and protective gloves, clothes and glasses when required. SDS sheets for chemicals used in the testing and treatment process are stored onsite in the Pretreatment Building.

### **10.7.3 Treatment Chemicals**

All bulk treatment chemicals are labeled with directions for use and their potential harmful effects. Again, their labels must be studied and directions followed for protection.

## **10.8 Safety Equipment**

The treatment facilities are equipped with safety equipment. Table 10-2 lists the equipment and describes its location and use.

**Table 10-1 Common Dangerous Gases Encountered in Sewers and at Sewage Treatment Plants <sup>(1)</sup>**

Name of Gas	Chemical Formula	Specific Gravity of Vapor Density <sup>(2)</sup> (Air = 1)	Explosive Range (% by volume in air)		Common Properties (percentages are percentage in air by volume)	Physiological Effects (percentages are percentage in air by volume)	Most Common Sources in Sewers	Simplest and Cheaper Safe Method of Testing
			Lower Limit	Upper Limit				
Oxygen (In air)	O <sub>2</sub>	1.11	NA	> 23	Colorless, odorless, tasteless, non-poisonous gas, supports combustion	Normal air contains 20.93% of O <sub>2</sub> Man tolerates down to 12%. Below 6 to 7% likely to be fatal.	Oxygen depletion from poor ventilation and absorption or chemical consumption of available O <sub>2</sub>	Handheld air monitor (i.e. RKI)
Gasoline Vapor	C <sub>8</sub> H <sub>12</sub> to C <sub>9</sub> H <sub>20</sub>	3.0 to 4.0	1.3	7.6	Colorless, odor noticeable at 0.03%, flammable, explosive	Skin and eye irritation; anesthetic effects when inhaled. 2.43% rapidly fatal. 1.1% to 2.2% dangerous for even short exposure	Leaking storage tanks, discharges from garages, and commercial or home dry- cleaning operations	Handheld vapor detectors
Carbon Monoxide	CO	0.97	10.9	74.2	Colorless, odorless, non-irritating, tasteless, flammable, explosive	Toxic if inhaled; burns or frostbite possible. 0.2 to 0.35% causes unconsciousness in 30 minutes.	Manufactured fuel gas	Portable carbon monoxide detector (i.e. RKI)
Hydrogen	H <sub>2</sub>	0.07	4.0	76	Colorless, odorless, tasteless, non-poisonous, extremely flammable, explosive	Burns or frostbite possible from rapidly expanding gas; inhalation can result in asphyxia.	Manufactured fuel gas	Handheld hydrogen gas detector
Methane	CH <sub>4</sub>	0.55	5.0	14.0	Colorless, tasteless, odorless, non-poisonous, flammable, explosive	Burns or frostbite possible from rapidly expanding gas; inhalation can result in asphyxia and pneumonia.	Natural gas, marsh gas, mfg. fuel, gas, sewer gas	Portable gas monitor (i.e. RKI)
Hydrogen Sulfide	H <sub>2</sub> S	1.19	4.3	45.0	Rotten egg odor in small concentrations, with sense of smell rapidly impaired. Odor not evident at high concentrations. Colorless, flammable, explosive, poisonous.	Death in few minutes at 0.2%. Paralyzes respiratory center. PEL = 10 ppm Action limit = 5 ppm	Petroleum fumes from blasting, sewer gas	Portable hydrogen sulfide detector (i.e. RKI)
Carbon Dioxide	CO <sub>2</sub>	1.53	Not flammable		Colorless, odorless, non-flammable. Not generally present in dangerous amounts unless there is already a deficiency of oxygen.	Can cause headaches, dizziness, and difficulty breathing. Asphyxia possible; 10% cannot be endured for more than a few minutes.	Issues from carbonaceous starts. Sewer gas	Portable carbon dioxide detector
Nitrogen	N <sub>2</sub>	0.97	Not flammable		Colorless, tasteless, odorless, non- flammable. Non-poisonous. Principal constituent of air (about 79%)	Burns or frostbite possible from rapidly expanding gas; toxic if inhaled.	Issues from some rock strata. Sewer gas.	Portable gas monitor

Name of Gas	Chemical Formula	Specific Gravity of Vapor Density <sup>(2)</sup> (Air = 1)	Explosive Range (% by volume in air)		Common Properties (percentages are percentage in air by volume)	Physiological Effects (percentages are percentage in air by volume)	Most Common Sources in Sewers	Simplest and Cheaper Safe Method of Testing
			Lower Limit	Upper Limit				
Ethane	C <sub>2</sub> H <sub>6</sub>	1.05	3.1	15.0	Colorless, tasteless, odorless, non- poisonous. Flammable. Explosive	Burns or frostbite possible from rapidly expanding gas; inhalation can result in asphyxia.	Natural gas	Handheld ethane gas monitor
Chlorine	Cl <sub>2</sub>	2.5	Not flammable or explosive		Greenish yellow gas, or amber color liquid under pressure. Highly irritating and penetrating odor. Highly corrosive in presence of moisture.	Respiratory irritant; can cause burns and serious eye damage. 30 ppm causes coughing; 40-60 ppm dangerous in 30 minutes. 1,000 ppm can be fatal in few breaths.	Leaking pipe connection. Overdosage	Chlorine gas detector

Notes:

1. Original table from Water and Sewage Works, Van Kleeck, August 1953; updated March 2019.
2. Gases with a specific gravity less than 1.0 are lighter than air; those higher than 1.0 are heavier than air.

**Table 10-2 Safety Equipment**

<b>Item</b>	<b>Location</b>	<b>Use</b>
1. Fire Extinguishers	Pretreatment Building	Fire
2. First Aid Kit	Pretreatment Building	Minor Injuries
3. Eye Protection Glasses	Pretreatment Building	Whenever Eye Injury is Possible
4. Extra Large Rubber Gloves	Pretreatment Building	Whenever Handling Chemicals or Leachate

A portable eye wash station is also available in the pretreatment building and is checked regularly by Cintas.

## **11 UTILITIES**

### **11.1 Utilities (General)**

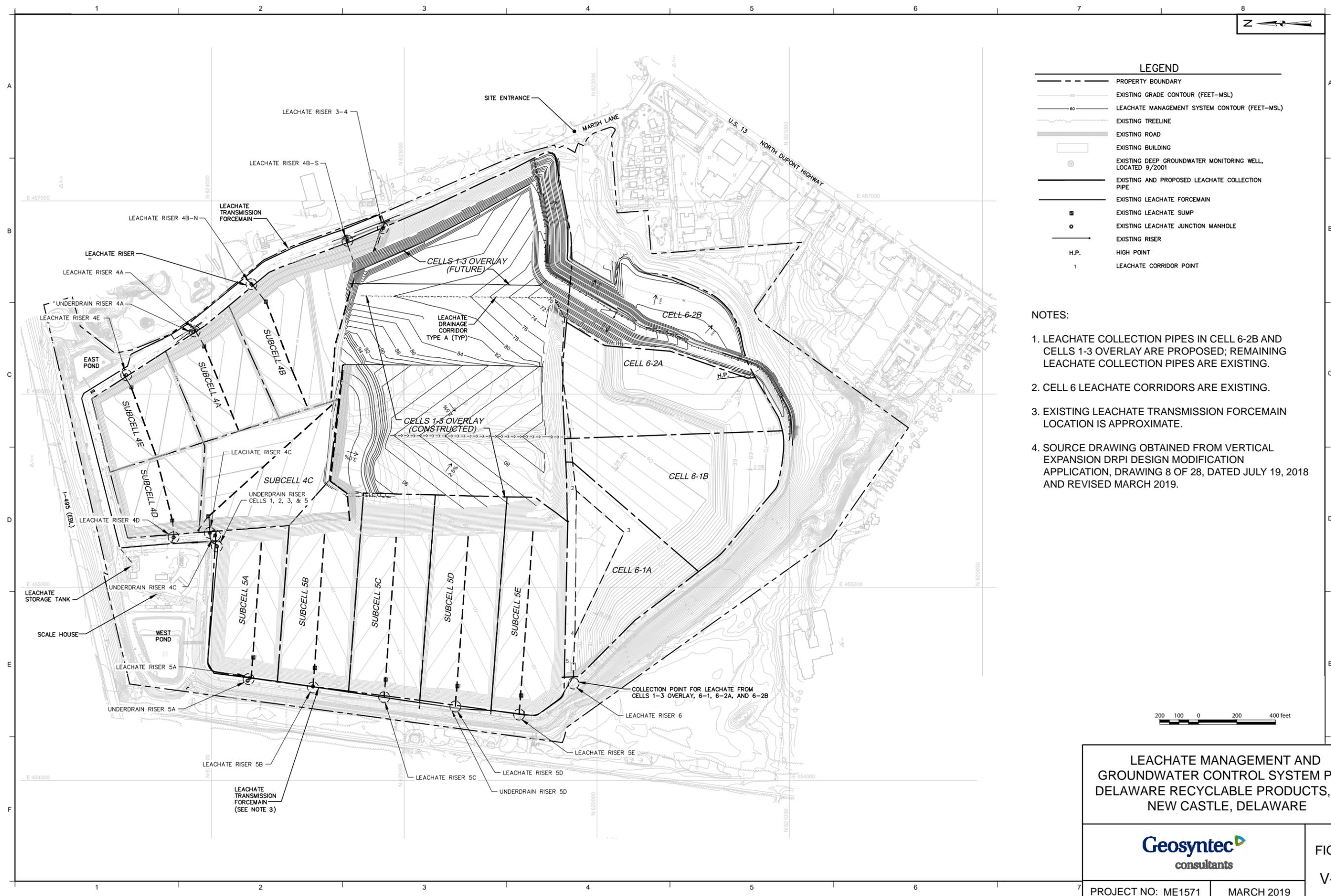
There is no water supply to the pretreatment building. The site office buildings are connected to the municipal water supply.

Electricity is supplied to the plant by DP&L. The plant also has one emergency generator to serve as the plant backup.

### **11.2 Electrical Distribution System**

The incoming service to the pretreatment plant is 75 KVA. The plant has a main disconnect before the plant transformer. The secondary side of the plant transformer is 460/480 & 208/115 volts. The incoming service is metered on the secondary service prior to the Motor Control Center. The MCC is located in the pretreatment building and supplies the operating equipment, and lighting during normal operations.

# FIGURES



**LEGEND**

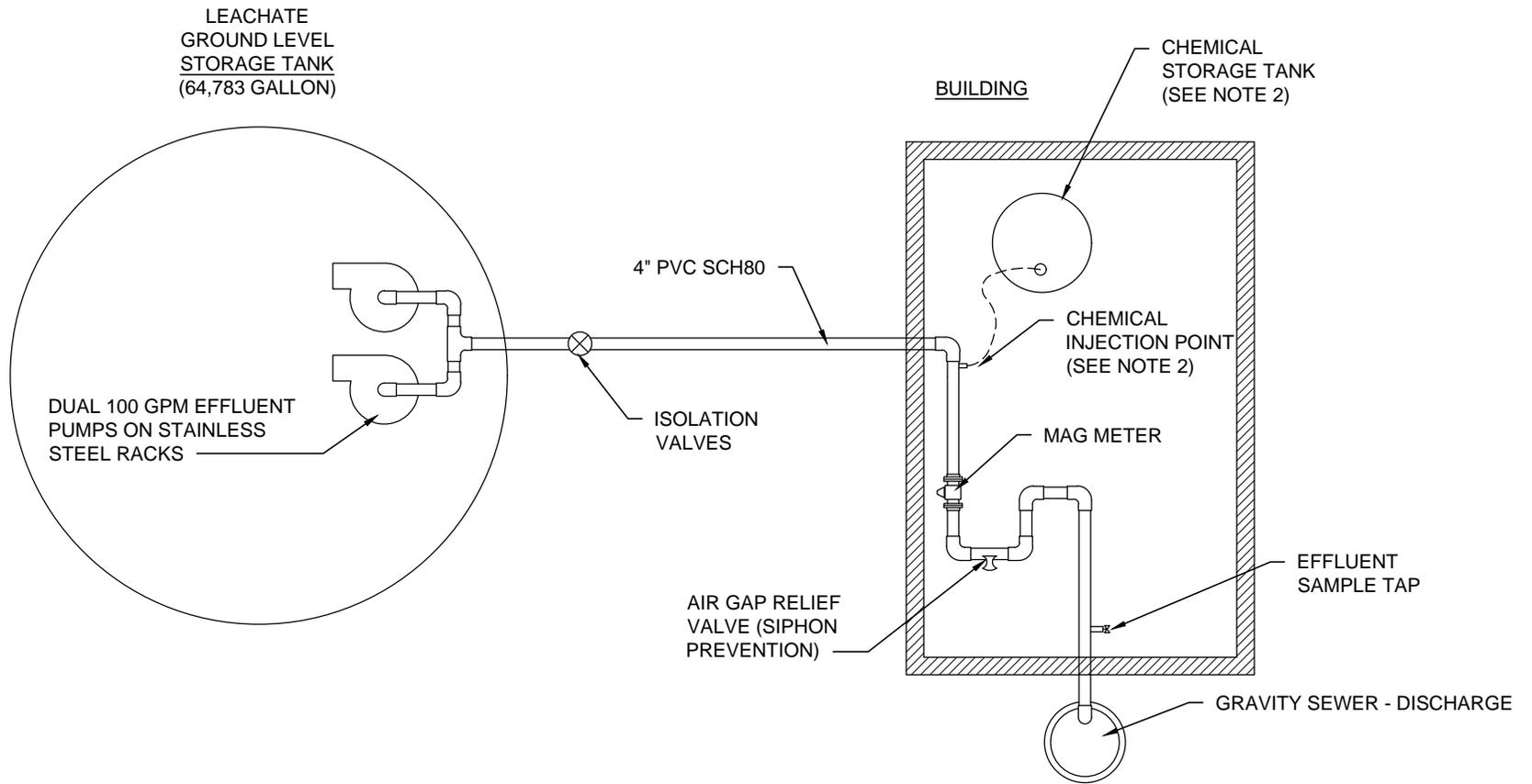
- PROPERTY BOUNDARY
- EXISTING GRADE CONTOUR (FEET-MSL)
- LEACHATE MANAGEMENT SYSTEM CONTOUR (FEET-MSL)
- EXISTING TREELINE
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING DEEP GROUNDWATER MONITORING WELL, LOCATED 9/2001
- EXISTING AND PROPOSED LEACHATE COLLECTION PIPE
- EXISTING LEACHATE FORCEMAIN
- EXISTING LEACHATE SUMP
- EXISTING LEACHATE JUNCTION MANHOLE
- EXISTING RISER
- H.P. HIGH POINT
- LEACHATE CORRIDOR POINT

- NOTES:**
1. LEACHATE COLLECTION PIPES IN CELL 6-2B AND CELLS 1-3 OVERLAY ARE PROPOSED; REMAINING LEACHATE COLLECTION PIPES ARE EXISTING.
  2. CELL 6 LEACHATE CORRIDORS ARE EXISTING.
  3. EXISTING LEACHATE TRANSMISSION FORCEMAIN LOCATION IS APPROXIMATE.
  4. SOURCE DRAWING OBTAINED FROM VERTICAL EXPANSION DRPI DESIGN MODIFICATION APPLICATION, DRAWING 8 OF 28, DATED JULY 19, 2018 AND REVISED MARCH 2019.



<b>LEACHATE MANAGEMENT AND GROUNDWATER CONTROL SYSTEM PLAN DELAWARE RECYCLABLE PRODUCTS, INC. NEW CASTLE, DELAWARE</b>	
	<b>FIGURE V-E-1</b>
PROJECT NO: ME1571	MARCH 2019

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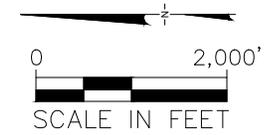
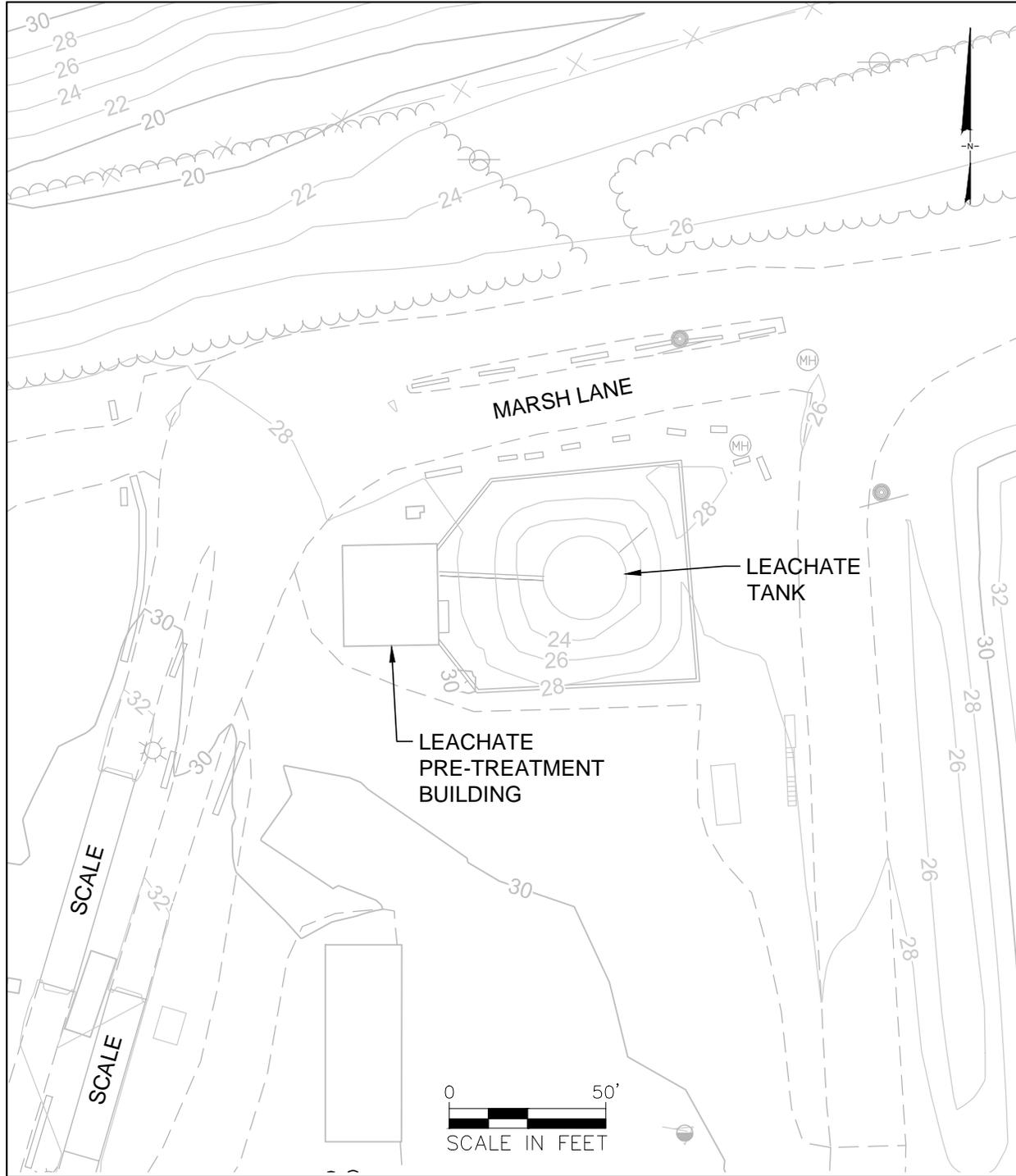
SCALE: NTS

NOTES:

1. ORIGINAL SCHEMATIC OBTAINED FROM SHEET 1 FROM WHITE MARSH ENVIRONMENTAL SYSTEMS, INC., TITLED WASTE MANAGEMENT DRPI LEACHATE WWTP, NEW CASTLE COUNTY AND DATED AUGUST 15, 2012. AND UPDATED MARCH 2019 TO REFLECT EXISTING SITE LAYOUT.
2. THE CURRENT CHEMICAL USED IS SODIUM HYPOCHLORITE. DRPI MAY MODIFY THE LOCATION OF INJECTION POINT AND CHEMICAL USED AS NEEDED TO MEET NEW CASTLE COUNTY DISCHARGE REQUIREMENTS.

<b>LEACHATE PRETREATMENT SYSTEM DELAWARE RECYCLABLE PRODUCTS, INC. NEW CASTLE, DELAWARE</b>	
	
PROJECT NO: ME1571	MARCH 2019
FIGURE V-E-2	

P:\ACADD\PROJECTS\DELAWARE RECYCLABLE PRODUCTS, INC\FIGURES\FIGURE V-E-3 - Last Saved by: A.Matek on 3/5/19



<b>LEACHATE TANK AREA DRAWING</b> DELAWARE RECYCLABLE PRODUCTS, INC. NEW CASTLE, DELAWARE	
	<b>FIGURE</b> V-E-3
PROJECT NO: ME1571	MARCH 2019

Delaware Recyclable Products, Inc.  
Industrial Waste Landfill  
Permit Modification Application

Geosyntec Consultants  
APPENDIX V- E: LEACHATE PRETREATMENT PLAN  
Vertical Expansion

# APPENDICES

Delaware Recyclable Products, Inc.  
Industrial Waste Landfill  
Permit Modification Application

Geosyntec Consultants  
APPENDIX V- E: LEACHATE PRETREATMENT PLAN  
Vertical Expansion

**APPENDIX A**

**WASTEWATER DISCHARGE PERMIT**



DEPARTMENT OF SPECIAL SERVICES

***Certified Mail***

November 5, 2016

Mr. Jeff Shanks  
Environmental Protection  
D.R.P.I. Landfill  
201 Marsh Lane  
New Castle, DE 19720

RE: Wastewater Discharge Permit WDP 89-076, Revision 9  
D.R.P.I. Landfill, New Castle, Delaware Facility.

Dear Mr. Shanks:

In accordance with the provisions of the New Castle County Code, Chapter 38.02.700, entitled "Regulation of Non-domestic Wastewater Discharges into the Public Sewer System", the attached final permit is hereby issued to D.R.P.I. Landfill, New Castle, Delaware Facility.

The permit will still expire November 4, 2021 and supersedes all previous permits issued to this facility. Pursuant to Section 38-269 of the New Castle County Code, the permit may be revised as limitations or requirements are modified or changed. Monitoring reports shall be submitted by July 31 and January 31 for the previous six-month monitoring period.

Should you have any questions or require further information on the above, please contact David Bowie at 395-5728.

Sincerely,

Michael D. Harris  
Environmental Compliance Manager

Encl.

cc:

Alison Quimby City of Wilmington, Encl.  
David Bowie, NCC, File, Encl

file:c:\permit#\89-076\permltr2016.doc

NEW CASTLE COUNTY  
DEPARTMENT OF PUBLIC WORKS  
100 New Churchmans Road  
New Castle, Delaware 19720

**WASTEWATER DISCHARGE PERMIT**

In accordance with the provisions of the General Pretreatment Regulations at 40 CFR Parts 125 and 403, and pursuant to New Castle County Code, Section 38.02.700, entitled "Regulation of Non-domestic Wastewater Discharges into the Public Sewer System," as amended September 18, 1996 and any applicable Federal or State law or regulation:

Delaware Recyclable Products, Inc.  
201 Marsh Lane  
New Castle, Delaware 19720

is authorized to discharge wastewater to the New Castle County Sewer System from the facility located at:

Minguadale Landfill  
New Castle, Delaware

subject to the permit conditions established herein.

Effective Date: November 5, 2016  
Expiration Date: November 4, 2021

Date: November 5, 2016    Signed: Michael D. Harris  
Environmental Compliance Manager

## **PERMIT CONDITIONS**

### **A. General.**

1. The named permit holder shall be expressly subject to all provisions of Section 38.02.700, of the New Castle County Code and all other regulations, user charges, and fees established by the County.

2. This Wastewater Discharge Permit is issued in the name of the permit holder and shall not be reassigned, transferred or sold to a new owner, new user, different premises, or a new or changed operation.

3. The permit holder shall report to the New Castle County Department of Special Services (the "Department") any changes (permanent or temporary) to the premises or operations that significantly change the quality or quantity of the wastewater discharge described in the Wastewater Discharge Permit Application submitted by the permit holder, or deviate from the terms or conditions under which this permit is granted.

4. The permit holder may be held liable for any actual damages and/or extraordinary expenses incurred by the Publicly Owned Treatment Works (POTW) caused in full or in part by the permit holder as determined from the investigation and the findings by the General Manager of Special Services. The General Manager may seek to recover reasonable attorney's fees, court costs, monitoring costs, and other expenses associated with cost recovery and other enforcement activities.

5. This permit is subject to revision to reflect any changes to the County code or any applicable categorical standards as and when they are promulgated by the U.S. E.P.A.

6. The permit holder is subject to all enforcement actions, to include penalties established in Section 38.02.700, of the New Castle County Code, for violating permit conditions.

7. All reports and correspondence shall be submitted to the following address:

Environmental Compliance Manager  
Department of Special Services  
187-A Old Churchman's Road  
New Castle, Delaware 19720

B. Effluent Limitations.

1. Permissible Mass Limits. The discharge from the designated location shall be limited to the effluent quality limitations as defined in New Castle County Code, Section 38.02.700 except for the following:

Maximum Permissible Loading (lbs/day)

<u>Effluent Constituent</u>	<u>30 Day Average</u>	<u>Maximum Daily</u>
AS	0.24	0.36
CD	0.09	0.13
CR	0.1	0.15
CU	0.15	0.225
CN	N/A	0.74
HG	0.0072	0.01077
MO	REPORT	REPORT
NI	1.26	1.89
PB	0.06	0.09
SE	0.82	1.23
<b>**ZN</b>	<b>1.259</b>	<b>1.889</b>
TSS	629.67	944.51
BOD	629.67	944.51
<b>*Ammonia-N</b>	<b>200</b>	<b>300</b>

*\*Ammonia variance in place*

*\*\*Please note change*

Maximum Permissible Concentration

<u>Effluent Constituent</u>	<u>30 Day Average</u>	<u>Maximum Daily</u>
***Hydrogen sulfide	1.00 mg/L	10.00 mg/L
Total toxic organics (TTO)	N/A	10.00 mg/L

\*\*\* Pretreatment for sulfides is required and is in place

2. Categorical Limitations. Discharge is subject to the categorical pretreatment standards for: N/A. These standards shall be in addition to the general prohibitions of the New Castle County Code, and in cases where the same constituent is addressed, the more stringent limitation will apply.

3. Rate of Discharge.

a. The daily average discharge shall mean the total discharge in gallons during a six-month monitoring period divided by the number of days in the period in which production was occurring or the commercial facility was operating. The daily average discharge permitted at the facility shall not exceed:

151,000 GPD

b. The maximum daily flow shall not exceed:

300,000

c. A meter to measure the wastewater discharge shall be installed at the following location:

N/A  
By (date): N/A

Metering devices pertinent to the discharge(s) shall be maintained in good working order and calibrated as needed.

C. Monitoring, Sampling, Inspections, Reporting, and Records Retention.

1. Monitoring. The permitted discharge shall be monitored by the permit holder in compliance with the following schedule:

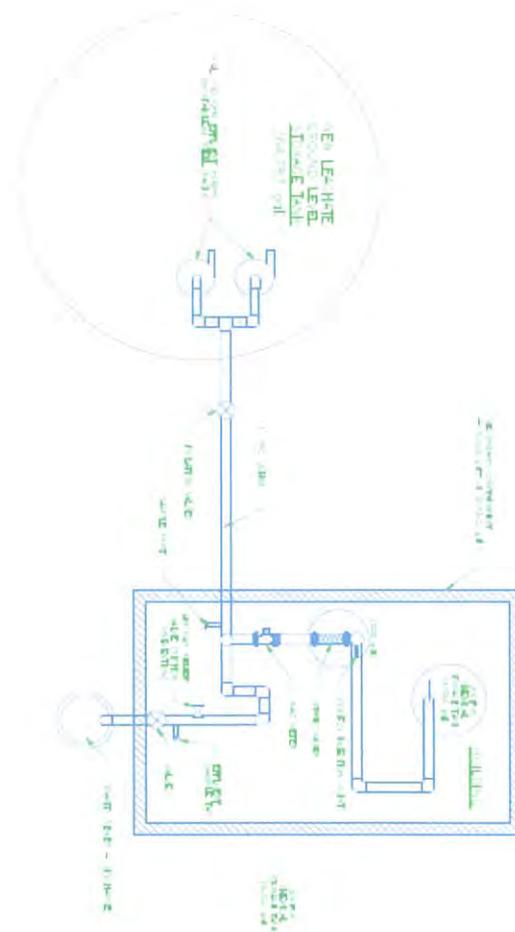
<u>Effluent Constituent</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Sample Type</u>
Hydrogen sulfide	1/ Week		Grab
<b><u>Hydrogen sulfide*</u></b>	1/ Week		Grab
pH	1/ Week		Grab
As, Cd, Cr, Cu, CN, Pb	1/ Month		24-hr Composite
Hg, Mo, Ni, Se, Zn	1/ Month		24-hr Composite
NH3-N	1/ Month		24-hr Composite
BOD <sub>5</sub>	1/6 Months		24-hr Composite
Total Suspended Solids	1/6 Months		24-hr Composite
TTO Non-purgeables	1/6 Months		24-hr Composite
TTO Purgeables	1/6 Months		Composite of 4 Grabs

**\*Taken prior to treatment**

2. Sampling.

a. Samples taken in compliance with the monitoring requirements specified above shall be collected at the following locations:

Pre-pretreatment and post-pretreatment sample points as identified on the Leachate Pretreatment Building schematic.



b. In accordance with Section 38.02.700 of the New Castle County Code, the permit holder is required to install a sampling and inspection manhole at the following location:

Sampling location is in place as described above

3. Inspections. Duly authorized employees of New Castle County, bearing proper credentials and identification, shall be permitted to enter all premises in compliance with New Castle County Code, Section 38.02.700 for the purpose of inspection of processes, records, and the like.

4. Periodic Discharge Reports and Progress Reports on Compliance Schedule. A report containing the results of the monitoring program and progress reports on compliance (if any) shall be filed with the New Castle County Department of Special Services by January 31 and July 31 of each year for the previous six-month period. The results of all self-monitoring, including the results of monitoring done more frequently than required, shall be submitted. Reports shall be submitted in the attached format (Attachments 1 of 6 through 6 of 6 of this permit).

The report shall include at a minimum the following:

Nature and concentration of regulated pollutants, average and maximum daily flow rates, methods of sampling and analysis, sample site, date of sample, who collected the sample and the flow rate at time of sampling, certification of meter calibration, and a certification that the methods used conform to those approved by the U.S. E.P.A. Reports shall be signed in compliance with the signatory requirements in 40 CFR 403.12 (l). If analysis results indicate a particular pollutant is not detected, the detection limit shall be reported.

5. Records Retention. All records and information resulting from the monitoring activities required by this permit, including sample time, sampler name, date of sample analysis, analysts name, calibration and maintenance of instrumentation, and continuous monitoring charts shall be retained for three (3) years. This period shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or control standards applicable to the permittee, or as requested by the Department

D. Notice Requirements.

1. Noncompliance Notification. If the permitted discharge does not comply with any effluent limitations specified in this permit or in the New Castle County Code, the permittee shall inform the Department via telephone at 395-5728 or the County Dispatcher at 395-5700 within 24 hours of becoming aware of the violation, and follow up with written notification within 5 working days which shall include an explanation of the violation, the steps taken to correct the violation and the steps taken to prevent future occurrences. The permittee shall also repeat sampling and analysis and submit the results within 30 days of becoming aware of the violation.

2. RCRA Notification. The permitted facility may be subject to hazardous waste requirements under the Resource Conservation and Recovery Act, Subtitles C & D. The State of Delaware Department of Natural Resources and Environmental Control, Division of Air and Waste Management, 89 Kings Highway, PO Box 1401, Dover Delaware 19903 regulates hazardous waste in the state and must be contacted to determine your obligations, if any, under this Act. The permitted facility shall also notify DNREC and the County in the event of discharge of hazardous waste into the sewer system and to the POTW, in accordance with 40 CFR 403.12 (p) (1).

3. Notice of Slug Loading. In accordance with 40 CFR Part 403, Section 403.12(f), the discharger shall immediately notify the Department of any slug loading of any pollutant (including oxygen demanding pollutants) released to the treatment system at a flow rate or concentration likely to cause operational problems in the sewer system or at the POTW. (Call 395-5728 during office hours, 395-5700 at other times.)

E. SPECIAL CONDITIONS.

1. This Permit supersedes any other approval issued previous to the effective date of this permit.
2. All analyses conducted in accordance with Section C1 of this permit shall conform to 40 CFR 136 analytical methods for determination of total metals concentrations, unless stated otherwise.
3. The grab sampling specified in Section C1 shall be performed during hours in which production is occurring or the facility is operating.
4. The composite sampling specified in Section C1 shall be performed during hours in which production is occurring or the facility is operating.
5. An ammonia-nitrogen (NH<sub>3</sub>-N) allocation of 200 pounds/day is provided for this permit through a variance.





Periodic Self-Monitoring Report

Permit Number: WDP-89-076  
 Revision Number: 9  
 Attachment 3 of 3

Reporting Period: January - June / July - December

Industry: Delaware Recyclable Products, Inc.

Part II - Flow Rates						
	Max	Avg		Peak (GPM)	Max (GPD)	Avg (GPD)
Permitted Flow (GPD)	300,000	151,000	Reported Flow			

**Part III - Methods**

**A. Sampling Method:**

All Samples are flow / time (circle one) proportioned composites except for purgeable parameters which are laboratory composites of four (4) grab samples, collected over the period of the discharge. Variances from the method are as below (Indicate sample date, parameter, and reason)

**B. Methods of Analysis:**

All analytical methods conform to those approved by the U.S. EPA except:

**Part IV- Certification**

A. Results indicate that the wastewater discharge standards are being met on a consistent basis: \_\_\_ Yes \_\_\_ No  
 If 'No', explain on a separate sheet what steps are being taken to achieve consistent compliance.

B. The discharge flow meter has been calibrated within the past year: \_\_\_ Yes \_\_\_ No  
 Date of last calibration: \_\_\_\_\_

C. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Representative	Date
Name	Title

Delaware Recyclable Products, Inc.  
Industrial Waste Landfill  
Permit Modification Application

Geosyntec Consultants  
APPENDIX V- E: LEACHATE PRETREATMENT PLAN  
Vertical Expansion

## **APPENDIX B**

### **CHAPTER 38 OF THE NEW CASTLE COUNTY CODE**

Division 38.02.700. - Regulation of non-domestic wastewater discharges into the public sewer system.

Sec. 38.02.701. - Definitions.

The following words, terms and phrases, when used in this Division, shall have the meanings ascribed to them in this Section, except where the context clearly indicates a different meaning:

*Act* means the Federal Water Pollution Control Act, also known as the Clean Water Act, 33 U.S.C. § 1251 et seq. as amended.

*Authorized representative* shall be defined as under Code of Federal Regulations (CFR), 40 CFR 403.12(k)(1)(1)—(3).

*Best Management Practices ("BMP")* means the schedules of activities, prohibitions or practices, maintenance procedures, and other management practices to implement the prohibitions listed in Section 38.02.702 and the requirements and recommended practices listed in the Commercial Food Establishments BMP Manual.

*BMR* means baseline monitoring report, as defined under 40 CFR 403.12(b).

*BOD*, denoting biochemical oxygen demand, means the laboratory determination of the quantity of oxygen by weight, expressed in milligrams per liter, utilized in the biochemical oxidation of organic matter under standard laboratory conditions of incubation for five (5) days at a temperature of twenty (20) degrees Celsius.

*Building sewer* means a sewer conveying wastewater from the premises of a user to a public sewer.

*Combined sewer* means a sewer receiving combined waste.

*Combined waste* means a wastewater containing surface water or stormwater.

*Commercial food establishment ("CFE")* means any facility that prepares, packages, serves and/or provides foods or beverages for sale or consumption on or off site, including but not limited to restaurants, food courts, food manufacturers, food packagers, grocery stores, hospitals, hotels, nursing homes, churches, schools, and correctional facilities.

*Commercial Food Establishments BMP Manual* means the best management practice requirements and recommended practices maintained by the Department of Public Works and issued to all commercial food establishments.

*Composite sample* means a sample composed of no less than eight (8) grab samples taken over the compositing period.

*Constituent* means any analytically defined parameter.

*Contributory industrial user* means any industrial user that discharges specific pollutants to the publicly owned treatment works at concentrations greater than typical domestic/commercial wastewaters as calculated in the most recent EPA approved local limit evaluation.

*Control manhole* means a manhole giving access to a building sewer at some point before the building sewer discharge mixes with other discharges in the public sewer.

*Control point* means a point of access to a course of discharge before the discharge mixes in the public sewer.

*Cooling water* means once-through, noncontact cooling water discharged from any system of condensation, air conditioning, cooling, refrigeration or other sources.

*Discharge* includes deposit, conduct, drain, emit, throw, run, allow, seep or otherwise release or dispose of or allow, permit or suffer any of these acts or omissions.

*Domestic wastes* means a combination of water-carried wastes consisting of washwater, culinary wastes and liquid wastes containing only human excreta and similar matter flowing in or from a building drainage system or sewer originating from residences, business buildings, institutions and commercial establishments.

*Effluent* means wastewater flowing out of any facility.

*Enforcement Response Plan ("ERP")* means the guidelines created and periodically amended by the Department of Public Works, which establishes enforcement procedures for violations of Division 38.02.700 of this Chapter.

*EPA* means the United States Environmental Protection Agency.

*Fats, oil, and grease ("FOG")* means a material, either liquid or solid, composed primarily of fats, oil and grease from animal or vegetable sources.

*Garbage* means animal and vegetable wastes from the preparation, cooking, and disposing of food and from the handling, processing, storage and sale of food products and produce.

*General Manager* means the General Manager of the Department of Public Works or his or her representative.

*Holding tank waste* means any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks and vacuum pump tank trucks.

*Industrial user (IU)* means any establishment which discharges pollutants into the publicly owned treatment works from any non-domestic source regulated under Section 307(b), (c), or (d) of the Clean Water Act.

*Influent* means wastewater, raw or partly treated, flowing into any sewage treatment device or facilities.

*Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the POTW, its treatment processes or operations or its sludge processes, use or disposal and hence causes a violation of the County's NPDES permit or prevents sewage sludge use or disposal in compliance with any federal, State or local statutory/regulatory provisions or permits.

*Mass based limitation* means the conversion of standard weight-to-volume limitations to an equivalent limitation expressed as the weight of material discharged to the sewer system during a given time interval, expressed as pounds per day of a particular constituent or combination of constituents.

*Maximum allowable industrial loading* means the maximum mass of pollutants that is allowed to be discharged to the publicly owned treatment works from all contributory industrial users.

*Milligrams per liter (mg/l)* means the same as parts per million and is the weight-to-volume ratio of a constituent.

*NPDES* means National Pollutant Discharge Elimination System as defined in 40 CFR, Chapter I, Part 122.

*National pretreatment standard* means any requirement containing pollutant discharge limits promulgated by the Environmental Protection Agency in accordance with subsections 307(b) and (c) of the Clean Water Act and prohibitive discharge limits established pursuant to 40 CFR 403.5.

*New source* means any building, structure, facility or installation from which there is (or may be) a discharge of pollutants, the construction of which is commenced after the publication of proposed national pretreatment standards under Section 307(c) of the federal Clean Water Act which will be applicable to such source if such standards are thereafter promulgated in accordance with Section 307(c) of the Act.

*Nondomestic waste or industrial waste* means any wastewater resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resource, or any mixture of such waste with water or domestic wastewater, as distinct from domestic wastewater.

*Nuisance* means anything which, by itself or by interaction with other wastes found in sewage, is injurious to health or is indecent or offensive to the senses or is capable of preventing entrance into the public sewer system for maintenance and repair.

*Overload* means the imposition of any constituent or hydraulic loading on a treatment facility in excess of its treatment capacity.

*Pass through* means a discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the County's NPDES permit, including an increase in the magnitude or duration of a violation.

*Person* means any individual, firm, company, association, society, corporation, institution, group or any other legal entity.

*pH* means the negative base 10 logarithm of the hydrogen-ion concentration expressed as moles per liter.

*Pollutant* means dredged spoil; solid waste; incinerator residue; sewage; garbage; sewage sludge; munitions; chemical wastes; biological materials; radioactive materials; heat; wrecked or discarded equipment; rock; sand; cellar dirt; and industrial, municipal and agricultural waste discharged into water.

*Pretreatment* means the reduction or elimination of pollutants, or the alteration of the nature of pollutant properties prior to discharging into the public sewer system.

*Pretreatment requirement* means any substantive or procedural requirement related to pretreatment imposed on a user, other than a national pretreatment standard.

*Public sewer* means a sewer owned and operated by the County or other public agency tributary to a wastewater treatment facility operated by the County or another entity.

*Publicly owned treatment works or POTW* means any devices or systems owned by a municipality used in the storage, conveyance, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also means the municipality which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

*Sanitary sewer* means a sewer the specific purpose of which is to carry domestic or industrial water or a combination of both and into which stormwater, surface water, groundwater and other unpolluted waters are not intentionally passed.

*Sewage* means the same as wastewater, as defined.

*Sewage treatment works (sewage treatment plant, pollution control plant)* means any arrangement of devices, facilities and structures used for receiving, processing and treating wastewater, industrial wastes and sludges from the sanitary or combined sewers.

*Sewer* means a pipe or conduit, generally closed, for carrying wastewater.

*Sewer system* means all sewers, laterals, or other connections or plants which connect with or pertain to a connection with the sewers, plants, public works and/or projects of the County, including all County-owned facilities.

*Shall* is mandatory; *may* is permissive.

*Shredded garbage* means garbage shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle having a dimension greater than one-half (½) inch in any direction.

*Significant industrial user* means any industrial user (IU) subject to Environmental Protection Agency categorical standards; any noncategorical industrial user that discharges twenty-five thousand (25,000) gallons per day or more of process wastewater to the sewer or any user that contributes a process waste stream which makes up five (5) percent or more of the average dry-weather hydraulic or organic capacity of the treatment plant; any user designated as significant by the General Manager on the basis that the user has a reasonable potential for adversely affecting the treatment plant's operation or for violating any pretreatment standard or requirement.

*Significant noncompliance* means any one (1) or more of the following:

- A. Chronic violations of wastewater discharge limits in which sixty-six (66) percent or more of all of the measurements taken for the same pollutant parameter during a six (6) month period equal or exceed (by any magnitude) a numeric pretreatment standard or requirement, including instantaneous permit limits for the same pollutant parameter.
- B. Technical review criteria (TRC) violations in which thirty-three (33) percent or more of all of the measurements taken for the same pollutant parameter during a six (6) month period equal or exceed the product of the numeric pretreatment standard or requirement including instantaneous limit, as defined by 40 CFR 403.3(l) multiplied by the applicable TRC criteria. (TRC = one and four-tenths (1.4) for BOD, TSS, fats, oil and grease, and one and two-tenths (1.2) for all other pollutants except pH.)
- C. Any other violation of a pretreatment standard or requirement as defined by 40 CFR 403.3(l) (daily maximum, long-term average, instantaneous effluent limit, or narrative standard) that the County determines has caused, alone or in combination with other discharges, interference or pass through, including endangering the health of POTW personnel or the general public.
- D. Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the County's exercise of its emergency authority to halt or prevent such a discharge.
- E. Failure to meet, within ninety (90) days after a schedule date, a compliance schedule milestone contained in the wastewater discharge permit or enforcement order for starting construction, completing construction or attaining final compliance.
- F. Failure to provide within forty-five (45) days after the due date, any required reports such as baseline monitoring reports, ninety (90) day compliance reports, compliance with categorical pretreatment standard deadlines, periodic self-monitoring reports, and reports on compliance schedules.
- G. Failure to accurately report noncompliance.
- H. Any other violation or group of violations, which may include a violation of Best Management Practices, which the County determines will adversely affect the operation or implementation of the local pretreatment program.

*Slug load or slug* means any discharge at a flow rate or concentration which could cause a violation of the prohibited discharge standards in Section 38.02.702 of this Code or any discharge of a nonroutine, episodic nature, including but not limited to an accidental spill or a noncustomary batch discharge.

*Standard Methods* means the latest edition of the examination and analytical procedures set forth in the recommended standard analytical techniques prepared jointly by the American Public Works Association (APWA), American Water Works Association (AWWA) and Water Environment Federation (WEF).

*Storm sewer* means a public sewer which carries stormwaters and surface waters and drainage and into which domestic wastewater or industrial wastes are not intentionally passed.

*Stormwater* means the excess water running off from the surface of a drainage area of building during and immediately following a period of precipitation.

*Total suspended solids (TSS)* means the dry weight of solids, expressed as milligrams per liter, that either float on the surface of, are in suspension in or are settleable in water, wastewater or other liquids, and which are largely removable by a laboratory filtration device.

*Toxic substances* means any substance, whether gaseous, liquid or solid, which when discharged to the sewer system in sufficient quantities may tend to interfere with any wastewater treatment process, constitute a hazard to recreation in the receiving waters of the effluent from the wastewater treatment plant, pose a hazard to workers in the sewer system, constitute a hazard to fish or animal life or interfere with proper sludge disposal.

*User* means any person who discharges, causes or permits the discharge of wastewater into a public sewer.

*User charge* means a charge levied on the users of wastewater facilities and treatment works for the cost of operation and maintenance of such facilities and works.

*Variance* means an approval granted by the General Manager for an industrial user to discharge outside the requirements of this Division.

*Waste* means rejected, unutilized or superfluous substances in liquid, gaseous or solid form resulting from domestic and nondomestic activities.

*Wastewater* means a combination of the water-carried waste from residences, business buildings, institutions and industrial establishments, together with any groundwater, surface water and stormwater that may be present, whether treated or untreated, discharged into or permitted to enter a public sewer.

*Wastewater constituents and characteristics* means the individual chemical, physical, bacteriological and radiological parameters, including volume, flow rate and such other parameters that serve to define, classify or measure the contents, quality and strength of wastewater.

*Wastewater facilities* means all facilities for collection, pumping, treating and disposing of wastewater.

*Wastewater treatment plant* means sewage treatment works, as defined.

(Ord. No. 98-050, § 1(38-266), 5-26-1998; Ord. No. 04-171, § 1, 12-21-2004; Ord. No. 11-032, § 2, 4-12-2011; Ord. No. 18-031, § 56, 4-24-2018)

Sec. 38.02.702. - Prohibited discharges.

It shall be unlawful for any person to discharge or permit the discharge or infiltration into any public sewer any of the following:

- A. Any liquid or vapor having a temperature higher than one hundred fifty (150) degrees Fahrenheit, any substance which causes the temperature of the total wastewater treatment plant influent to exceed one hundred four (104) degrees Fahrenheit or any substance which inhibits biological activity in the POTW.
- B. Any liquid containing fats, wax, grease, non-biodegradable cutting oil or oils of mineral, animal, vegetable or petroleum origin, whether emulsified or not, in excess of one hundred (100) mg/l or in any amounts that will cause interference or pass through. Lower limits may be applied where necessary to prevent specific problems.
- C. Any water or wastes that contain more than ten (10) mg/l of hydrogen sulfide.
- D. Any pollutants which create a fire or explosion hazard in the collection and treatment system, including but not limited to waste streams with a closed-cup flashpoint of less than one hundred forty (140) degrees Fahrenheit using the test method specified in 40 CFR 261.21.
- E. Any pollutants which result in the presence of toxic gases, vapors or fumes within the collection and treatment system in a quantity that may cause acute worker health and safety problems.
- F. Any trucked or hauled pollutants except at discharge points designated by the General Manager.
- G. Any substances that may:
  1. Cause obstruction to the flow in a sewer system;
  2. Interfere with operation of sewage treatment works;
  3. Cause excessive loading or overloading of wastewater facilities; or
  4. Cause pass through to the receiving waters without being effectively treated by normal wastewater treatment processes due to the incompatibility of the substance and cause violation of State or Federal regulations or NPDES Permit.
- H. Any discharge into public sewers of solid or viscous substances which may cause obstruction to the flow in the public sewer system, including but not limited to the following:
  1. Ashes.
  2. Cinders.
  3. Sand.
  4. Mud.
  5. Straw.
  6. Shavings.
  7. Metal.
  8. Glass.
  9. Rags.
  10. Paper products, either whole or ground by garbage grinders.
  11. Tar.
  12. Plastics.
  13. Wood or sawdust.
  14. Unground garbage.
  15. Whole blood.
  16. Paunch manure.
  17. Hair and fleshings.
  18. Entrails.

19. Feathers.
  20. Bones.
  21. Slops.
  22. Chemical residues.
  23. Paint residues.
  24. Bulk solids.
  25. Syringes.
- I. Any garbage that has not been properly shredded to a degree that all particles can be carried freely under the flow conditions normally prevailing in public sewers. Particles greater than one-half (½) inch in any dimension are prohibited.
  - J. Any liquid having a pH lower than 6.0 or higher than 9.0 or having any property capable of causing damage or hazard to structures, equipment and personnel of the sewer works. pH deviations between 5.0 and 11.0 shall be permitted for a total of ten (10) percent of the time in an eight (8) hour work shift, provided the user installs and operates a pH-monitoring device to continuously monitor and record the pH of the discharge.
  - K. Any stormwater, surface water, groundwater, roof runoff, interior or exterior footing drainage, subsurface drainage, cooling water or unpolluted industrial process waters to any sanitary sewer.

(Ord. No. 98-050, § 1(38-267), 5-26-1998; Ord. No. 04-171, § 2, 12-21-2004)

Sec. 38.02.703. - Maximum constituents.

- A. *Limitations of concentrations.* The thirty (30) day average concentration in wastewater of any of the following constituents shall be limited to the following (see also [Section 38.02.704](#)):

Constituent	Industrial Point Source	
	In Middletown-Odessa-Townsend Service Area (30-Day Average, mg/l)	In Wilmington Service Area (30-Day Average, mg/l)
Arsenic	1.00	0.09
Cadmium	0.015	0.07
Chromium, Total	1.50	4.00
Chromium, VI	0.50	—
Copper	1.0	0.91
Lead	3.00	1.94
Mercury	0.001	0.0057
Nickel	1.00	1.00
Selenium	—	0.65
Silver	0.015	—
Zinc	1.00	3.49
Ammonia as Nitrogen	35.00	35.00
TKN	15	—
Phosphorus	45	—

Cyanide, Total	—	0.49
PCB	Non-Detectable	—
Phenolics	10.00	10.00
BOD	350	500
Total Suspended solids (TSS)	500	500

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- B. *Additional limitations; acceptance of excess concentrations; special agreements.* Notwithstanding the limitations set forth in Subsection A, the General Manager may impose additional limitations on mass loading of BOD and other constituents. However, the General Manager may accept the discharge in wastewater of constituents in excess of such concentrations, provided that the General Manager determines that such increased concentrations are compatible with the wastewater treatment process. In no case shall a special agreement allow the total loading allocated to all regulated industrial users to exceed the Maximum Allowable Industrial Loading calculated during the most recent local limits evaluation. All approvals shall be granted in writing. Nothing in this Division shall be construed as preventing any special agreement or arrangement between the General Manager and any person whereby an industrial waste of unusual strength or character may be accepted by the General Manager for treatment, subject to the requirements of National Pretreatment Standards. For such waste, the General Manager may require the user to provide any additional documentation or to conduct any special studies, at the user's expense, as deemed necessary to demonstrate that such waste complies with the limitations specified under Section 38.02.702 and this Section. Such waivers shall not be applicable to National Pretreatment Standards. Also, in no case will a special agreement waive compliance with a pretreatment standard or requirement, without prior written approval from EPA.
- C. *Surcharge fee.* The discharge of constituents in excess of the concentration limits set forth in Subsection A or not specifically limited therein may be subject to the payment of a surcharge fee, as determined from time to time by the General Manager, which surcharge shall be based upon the additional unit cost incurred in the wastewater monitoring, collection, transmission and treatment process attributed to such discharges.
- D. *Responsibility to meet standards.* The categorical pretreatment standards found at 40 CFR Chapter I, Subchapter N, Parts 405—471 are hereby incorporated. Any industrial discharger required under federal law to meet National Categorical Pretreatment Standards for any pollutants shall meet these standards in its discharge, provided that such categorical standards are more stringent than the local standards established under subsection A of this Section for the pollutant. Where categorical standards are less stringent than the local standards, the local standards shall apply. The General Manager may revise the discharge limits for specific pollutants covered in the discharger's categorical pretreatment standards, provided that such revision has been approved by the appropriate State and/or federal authority pursuant to 40 CFR 403.7 of the Clean Water Act. Where the limits in a categorical pretreatment standard are expressed only in terms of mass of pollutants per unit of production, the General Manager may establish equivalent mass-per-day or concentration limitations as provided in 40 CFR 403.6. When wastewater subject to a categorical pretreatment standard is mixed with wastewater not regulated by the same standard, the General Manager shall impose an alternate limit using the combined wastewater formula set forth in 40 CFR 403.6(e).
- E. *Discharge of radioactive materials.* No user shall discharge radioactive materials into public sewers without a discharge permit. The General Manager may establish, in compliance with applicable State and federal regulations, regulations for the discharge of radioactive wastes into public sewers. In no instance shall the active elements or their local concentrations permitted to be discharged into the sewers exceed the concentration limits established.
- F. *Dilution prohibited.* Dilution is prohibited as a substitute for treatment. Except as provided under federal law, the use of dilution as a partial or complete substitute for adequate treatment to achieve compliance with categorical or local limitations is prohibited. The General Manager may impose mass-based limitations or otherwise modify the limitations to account for dilution in each case.
- G. *General requirements.*
1. All industrial users shall:
    - a. In accordance with 40 CFR 403.12, maintain records of flow and discharge characteristics, including documentation associated with Best Management Practices, as well as any industry specific information that may be relevant to determining the facility's status for pretreatment permitting requirements (whether or not such monitoring activities are required by this Section) for a minimum of three (3) years. Such records shall include for all samples: (i) the date, exact place, method, and time of sampling and the name(s) of the person(s) taking the samples; (ii) the dates analyses were performed; (iii) who performed the analyses; (iv) the analytical techniques/methods used; and (v) the results of such analyses. This period of retention shall be extended during the course of any unresolved litigation involving the user or when requested by the General Manager. The County shall have the right to inspect, review and copy all records pertaining to discharge at the facility, and the user shall make such records available to the County for inspection, copying, and review.

b. Notify the County of any substantial change in volume or character of pollutants in the discharge.

2. All users to which the National Pretreatment Standards apply shall submit BMRs in accordance with 40 CFR § 403.12.

(Ord. No. 98-050, § 1(38-268), 5-26-1998; Ord. No. 04-171, § 3, 12-21-2004; Ord. No. 10-113, § 1(Exh. A), 1-18-2011; Ord. No. 11-032, § 3, 4-12-2011)

Sec. 38.02.704. - Wastewater discharge permits.

A. *Permit application criteria.*

1. All industrial users proposing to discharge into a public sewer shall submit an application for a wastewater discharge permit, and if required, obtain a wastewater discharge permit prior to connecting to, or discharging into, a public sewer. Any user connected to the public sewer system may also be required to submit an application for a wastewater discharge permit upon receiving written notice from the General Manager. In determining whether a facility requires a permit, the General Manager shall consider the following factors: flow quantity, constituents, categorical status, and any other factor that indicates a facility's potential to adversely impact the sewer system or the treatment plant's operation.
2. All significant industrial users are required to obtain a wastewater discharge permit in accordance with this Section. In compliance with 40 CFR 403.12, all significant industrial users, at a frequency determined by the General Manager but in no case less than twice per year, shall conduct sampling and shall submit a report indicating the nature and concentration of pollutants in the discharge which are limited by pretreatment standards, the measured or estimated average and maximum daily flows for the reporting period, and compliance with Best Management Practices, if required.

B. *Permit application.* Users seeking a wastewater discharge permit shall complete and file with the General Manager an application in the form prescribed by the General Manager and accompanied by any applicable fees. The applicant shall be required to submit, where applicable, in units and terms appropriate for evaluation, the following information:

1. Name, address and telephone number of both the facility and the applicant or responsible party.
2. Volume of wastewater to be discharged.
3. Wastewater constituents and characteristics as determined by a laboratory mutually agreed to by the Manager and the user.
4. Time and duration of discharge.
5. Average and hourly peak wastewater flow rates, and maximum daily flow in gallons per day (GPD) to the POTW from regulated process streams and other streams, including daily, monthly, and seasonal variations, if any.
6. Conceptual site and plumbing plans to show all sewers and appurtenances by size, location and elevation.
7. A general description of activities, facilities and plant processes on the premises including all materials which are or could be discharged to the public sewers, average rate of production, and standard industrial classifications of the operation.
8. Type of product(s) manufactured and raw materials processed and, where known, the nature and concentration of any pollutants in the discharge which are limited by local standards under subsection 38.02.703A or national pretreatment standards.
9. A statement reviewed by an authorized representative of the user and certified by a qualified professional indicating whether the standards are being met on a consistent basis and, if not, whether additional pretreatment and/or operation and maintenance is required to meet applicable standards.
10. If additional pretreatment and/or operation and maintenance will be required, the shortest schedule by which the user shall provide such pretreatment. The schedule shall contain increments of progress leading to the construction and operation of pretreatment facilities, each increment not exceeding nine (9) months, and the completion date shall be no later than the compliance date established for the applicable categorical pretreatment standards.
11. Number of employees and hours of work.
12. A listing of any environmental control permits held by or for the facility.
13. Any substance discharged which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. The IU shall also notify the POTW, EPA, and State hazardous waste agency in accordance with 40 CFR 403.12(p)(1).
14. Results of sampling and analysis identifying the nature and concentration, and/or mass (where required by the standard or by the General Manager) of pollutants in the discharge from each regulated process; instantaneous and daily maximum and long-term average concentrations, or mass (where required) and any other information, such as written proof of zoning approval, as may be deemed necessary by the General Manager in order to evaluate the permit application.
15. Documentation of compliance with any applicable Best Management Practices when they are required.

C. *Draft permit.* The General Manager will evaluate the data furnished by the user and may require additional information. After evaluation and acceptance of the data furnished, the General Manager may issue within forty-five (45) days a draft wastewater discharge permit. A forty-five (45) day comment period shall be allowed all users, and thereafter the General Manager may issue a wastewater discharge permit subject to the terms and conditions in this Section.

D. *Permit conditions.* Wastewater discharge permits shall be expressly subject to all sections of this Division and all other regulations, user charges and fees established by the County. The conditions of wastewater discharge permits shall be uniformly enforced by the General Manager. The General Manager may deny or condition new or increased contributions of pollutants or changes in the nature of pollutants to the POTW by

industrial users where such contributions do not meet applicable pretreatment standards and requirements or where such contributions would cause the POTW to violate its NPDES permit. Wastewater discharge permits shall contain the following:

1. A statement of duration including issuance date and expiration date.
2. Limits on the average and maximum wastewater constituents and characteristics consistent with the applicable discharge standards in Section 38.02.703 and the monitoring frequency established for the discharge.
3. Limits on rate and time of discharge or requirements for flow regulation.
4. Requirements for installation of inspection and sampling facilities.
5. Pretreatment requirements, including national pretreatment standards.
6. Specifications for monitoring programs which may include sampling locations, frequency and method of sampling, number, types and standards for tests and reporting schedule.
7. Penalties for violation(s) of the permit as specified in Section 38.03.003 and the pretreatment program enforcement response plan.
8. Requirements for maintaining plant records relating to wastewater discharge and for providing access to the records for inspecting and copying.
9. Compliance schedules containing increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment or other means required for the discharger to meet the applicable discharge standards (e.g., hiring an engineer, completing preliminary plans, executing contracts, etc.). Increments of progress shall not exceed nine (9) months.
10. The requirement to notify the County in advance of any planned significant change in the volume or character of pollutants in the discharge, or to notify the County immediately after discovery of any unplanned significant change.
11. A statement of nontransferability of the permit.
12. The requirement that all users shall notify the General Manager of any significant changes to the user's operations or system that may affect the potential for slug discharges at least ninety (90) days before the change.
13. The requirement to develop and implement a slug control plan if required by the General Manager.
14. Best Management Practices, when applicable.
15. Other conditions as deemed appropriate by the General Manager to ensure compliance.

E. *Reporting requirements.*

1. *Certification.* All wastewater discharge permit applications and user reports must be signed by an authorized representative of the user and contain the following certification:
 

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
2. *Discharge of hazardous waste.* The IU shall notify the POTW, EPA, and State hazardous waste agency in accordance with 40 CFR 403.12(p)(1) in the event of a discharge into the public sewer system of any substance which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261.
3. *Filing of periodic discharge/compliance progress reports.* The discharge report may include, but not be limited to wastewater volume rates of flow, constituent concentrations and mass emission rates, compliance with Best Management Practices, hours of operation, number of employees, or other information which relates to the wastewater discharge to the sewers. Within ninety (90) days following the date for final compliance with applicable categorical pretreatment standards or, in the case of a new source, following commencement of the introduction of wastewater into the POTW, any user subject to such pretreatment standards and requirements shall submit to the General Manager a report containing the information described in Subsection B. For users subject to equivalent mass or concentration limits established in accordance with the procedures in 40 CFR 403.6(c), periodic reports on continued compliance shall contain a reasonable measure of the user's long-term production rate. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production, the report shall include the actual average production rate for the appropriate sampling period. The IU shall sign and certify all compliance reports in accordance with Subsection B.9; and, not later than fourteen (14) days following each date in the schedule and the final date for compliance, the IU shall submit its progress reports on the compliance schedules in accordance with Subsections B.10, D.9 and this Subsection.
4. *Submission of analytical results.* IUs shall submit the results of all self-monitoring data which are collected at regulated point(s) of compliance and analyzed pursuant to 40 CFR 136.

- F. *Duration of permit.* All wastewater permits shall contain a statement of duration. Permits shall be issued for a specified time period, not to exceed five (5) years. A permit shall be issued for a period of not less than a year or may be stated to expire on a specific date. The terms and conditions of the permit may be subject to modifications and change by the General Manager during the life of the permit as limitations or requirements are modified and changed. The user shall be informed of any proposed changes in the permit at least ninety (90) days prior to the effective date of

change. Every user shall be allowed a comment period relating to any of the proposed changes in his or her permit and which shall be the first forty-five (45) days of the ninety (90) day period prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

- G. *Transfer of permit.* All wastewater discharge permits shall contain a statement of nontransferability. Wastewater discharge permits shall be issued to a specific user for a specific operation.
- H. *Variations.* Where the General Manager finds that the strict compliance with this Section is not justified, the General Manager may approve a variance to specific subsections of this Section, provided that the variance shall not have the effect of nullifying the intent and purpose of this Section. No variance shall be given to National Categorical Pretreatment Standards, including but not limited to National Prohibitive Discharge Standards and pretreatment requirements found in the general pretreatment regulations, 40 CFR 403. For the purpose of permit fees, a permit variance shall take into account one (1) or multiple variances within the same permit. All approved variances shall be in writing.
- I. *Permit fees.*
1. The wastewater discharge permit billing period shall be from July 1<sup>st</sup> to June 30<sup>th</sup> of the following year. The permit fees shall be paid annually by July 31<sup>st</sup>.
  2. The fees to be paid for the issuance and/or modification of wastewater discharge permits and/or granting of variances shall be as follows:
    - a. Annual fees (sum of applicable categories listed below for the permittee):
      - EPA categorical standard ..... \$2500.00
      - Process flow > 25,000 gallons per day ..... \$2500.00
      - Toxic chemical POTW transfer ..... \$2000.00
      - Nonsignificant industrial user ..... \$1000.00
      - Permit variance(s) ..... \$1500.00
    - b. Single occurrence fees:
      - Significant industrial user permit amendment ..... \$1250.00
      - Nonsignificant industrial user permit amendment ..... \$500.00
  3. The permit fees in this Subsection shall be adjusted each year effective on July 1st to reflect the increase, if any, by which the consumer price index for the most recent year exceeds the consumer price index for the previous year. The amount of the change in the fee shall be determined by multiplying the existing fee by the percentage change in the consumer price index and rounding the result to the nearest dollar. The consumer price index for any year is the average of the consumer price index for all urban consumers published by the US Department of Labor for the Philadelphia-Wilmington-Atlantic City area as of the close of the twelve (12) month period ending on April 30th of each year. In years that the consumer price index does not change or decreases from the previous year, the fees shall remain the same.
  4. Fees shall be paid by the date designated by the General Manager, and fees collected shall be deposited in the sewer fund.

(Ord. No. 98-050, § 1(38-269), 5-26-1998; Ord. No. 99-049, § 1, 4-27-1999; Ord. No. 04-171, § 4, 12-21-2004; Ord. No. 10-113, § 1(Exh. A), 1-18-2011; Ord. No. 11-032, § 4, 4-12-2011)

#### Sec. 38.02.705. - Pretreatment.

- A. Under this Division, grease, oil and sand removal equipment or any other treatment equipment shall be provided when, in the opinion of the General Manager, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts or any flammable wastes, sand and other harmful ingredients. All equipment shall be of a type and capacity approved by the General Manager and shall be located so as to be readily and easily accessible for cleaning and inspection.
- B. Where treatment equipment is required for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his or her expense. To aid the General Manager, the owner, subsequent to the commencement of operation of any pretreatment facilities, shall make periodic reports to the General Manager setting forth data upon which he or she may determine the effectiveness and adequacy of such facility in reducing the concentrations of constituents to acceptable limits. Any approval by the General Manager of type, kind or capacity of a facility shall not relieve the owner of the responsibility of revamping, enlarging or otherwise modifying a facility to accomplish its intended purpose to the degree necessary to comply with the rules and regulations or of the requirements of a discharge permit.
- C. The General Manager shall evaluate whether any industrial user needs an accidental discharge/slug control plan. The General Manager may require any industrial user to develop, submit for approval, and implement such a plan. An accidental discharge/slug control plan shall address, at a minimum, the description of discharge practices, including nonroutine batch discharges; description of stored chemicals; procedures for immediately notifying the General Manager of any accidental or slug discharge, as required by Subsection 38.02.706.F; and procedures to prevent adverse impact from any accidental or slug discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas; handling and transfer of materials; loading and unloading operations; control of plant site runoff; worker training; building of containment structures or equipment; measures for containing toxic organic pollutants, including solvents; and/or measures and equipment for emergency response.

(Ord. No. 98-050, § 1(38-270), 5-26-1998; Ord. No. 04-171, § 5, 12-21-2004; Ord. No. 10-113, § 1(Exh. A), 1-18-2011)

Sec. 38.02.706. - Compliance monitoring.

At all times and at his or her discretion, the General Manager shall have the power to take samples or require sampling of any user's discharge to the public sewers in accordance with the following:

- A. *Inspections.* The General Manager and other duly authorized employees of the County, bearing proper credentials and identification, shall be permitted to enter all premises at a reasonable hour for the purpose of inspection, observation, measurement, sampling and testing in accordance with this Division. The user shall not be held liable for any unsafe acts performed by the General Manager or his or her representative while on the user's premises, and any loss to the user as a direct result of any unsafe acts performed by the General Manager or his or her representative while on the user's premises shall be the responsibility of the General Manager.
- B. *Sampling points.* Samples shall be taken and flow measurements made, whenever possible, at a common manhole into which all flows from such premises are combined. Such manhole shall be constructed by the owner of such premises, at his or her own expense, when directed by order of the General Manager. Whenever the installation of a common manhole is impossible or impractical, the owner of such premises shall construct and maintain at his or her own expense, in lieu of the common manhole, two (2) or more manholes as required by order of the General Manager for accurate measurement of all flows discharged from such premises into the sewer system; if no special manhole has been required, the control sample shall be taken at a point to be mutually selected by representatives of the General Manager and the user.
- C. *Sample collection.* With the exception of samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides, and volatile organic compounds which must be obtained by grab collection techniques, the user must collect wastewater samples using twenty-four (24) hour flow-proportioned composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the General Manager. Where time-proportional composite or grab sampling is authorized, the samples must be representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR 136 and appropriate EPA guidance, multiple grab samples collected during a twenty-four hour (24) period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides, the samples may be composited in the laboratory or in the field; and for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the composting procedures as documented in approved EPA methodologies may be authorized as appropriate.
- D. *Method of analysis.* All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this Division shall be determined in accordance with 40 CFR 136 to reflect the composition of the user's discharge to the public sewers.
- E. *Determination of constituent concentration.* The constituent concentrations of any wastewater shall be determined from representative samples of normal discharges to the public sewers. The samples may be taken at sampling stations as described under Subsection B, at any period or time, or of such duration and in such a manner as determined by the General Manager. The intent of any sampling procedure is to establish the constituent concentrations in the wastewater discharged during an average or typical working day. These concentrations may be derived, according to the best judgment of the General Manager, by combining repeated subsamplings during one (1) day or by combination of a series of such days. The analysis of samples taken shall be performed by a laboratory mutually approved by the General Manager and the user. The acceptability of the wastes shall be determined from such analysis.
- F. *Disputed constituent concentration.* If the constituent concentration of the wastes discharged from an industrial user to the POTW as determined under this Section is disputed by the IU, the following procedure shall be instituted:
  1. Within five (5) days of receipt of the analysis in question, the IU shall submit a request for review setting forth the nature of the dispute and reasons for the request.
  2. The General Manager shall evaluate the request based on the information provided in the request and approve or deny such. If approval is granted, the General Manager shall determine if resampling is warranted.
  3. The results of the resampling and analysis shall not replace that of the disputed analysis in determining non-compliance unless the original results are determined to be invalid. The results of the resampling and analysis shall be submitted to the General Manager for consideration of questions on mistakes and/or factors in billing or enforcement pursuant to this Division.
- G. *Noncompliance notification.* If a discharge does not comply with any effluent limitations specified in this Division or within the industrial user's permit, the industrial user shall inform the County via telephone within twenty-four (24) hours of becoming aware of the violation and in writing within five (5) working days of becoming aware of the violation. The industrial user shall also repeat the sampling and analysis and submit the results to the General Manager within thirty (30) days of becoming aware of the violation.

(Ord. No. 98-050, § 1(38-271), 5-26-1998; Ord. No. 04-171, § 6, 12-21-2004; Ord. No. 10-113, § 1(Exh. A), 1-18-2011; Ord. No. 11-032, § 5, 4-12-2011)

Sec. 38.02.707. - Property designation.

- A. *Compliance.* Any tenant of real property as described in this Section shall comply with all the rules of this Division. In the event that a tenant is unavailable or unresponsive to notices of violations or other correspondence or the tenant's liability cannot be otherwise distinguished from other tenants on the property, the property owner shall be fully and solely responsible for any violations, penalties or damages arising under this Chapter.

- B. *Firm with multiple buildings.* Where a firm is operating as an integrated manufacturing complex involving more than one (1) building with varying processes having separate sewer connections within the same contributory area, such firm may be considered as one (1) unit with multiple sewers. An analysis for each building sewer, based on separate samples and flows taken at each building sewer, may be combined and the weighted average of the results thus obtained may be used as the measure of the constituent concentration of the wastes discharged into the sewer system by such firm.
- C. *Industrial park and/or industrial building complex.* Where a parcel of real property is occupied by multiple buildings having tenants with unrelated manufacturing processes, each building shall be considered a separate source of constituents.
- D. *Multi-tenanted industrial buildings.* Where a parcel of real property is occupied by a multi-tenanted industrial building connected to the sewer system by one (1) or more sewers and the tenants in such building discharge wastewater into the drainage system, each tenant shall be considered a separate source of constituents and the constituent concentration shall be determined at sampling locations selected by the Manager for each source.

(Ord. No. 98-050, § 1(38-272), 5-26-1998; Ord. No. 11-032, § 6, 4-12-2011)

Sec. 38.02.708. - Accidental discharges and spill notification.

- A. *Notification of discharge.* All users shall notify the General Manager within twenty-four (24) hours by telephone upon accidentally discharging wastes in violation of this Division, upon discharging wastes which exceed the prohibitions in 40 CFR Section 403(5)(b) or upon discharging wastes which could potentially harm the POTW to enable countermeasures to be taken to minimize damage to the public sewer, treatment facility, treatment processes and the receiving waters. Such notification shall be followed, within five (5) working days of the date of occurrence, by a detailed written statement to the General Manager describing the causes of the accidental discharge and the measures being taken to prevent future occurrence.
- B. *Notices to employees.* In order that employees of users be informed of these requirements, users shall make available to their employees copies of this Division and other wastewater notices which may be furnished by the General Manager relating to more effective water pollution control. A notice shall be furnished and permanently posted on the user's bulletin board advising employees whom to call in case of an accidental discharge in violation of this Division.
- C. *Preventive measures.* All users shall notify the General Manager of any significant changes to the user's operations or system that may affect the potential for slug discharges at least ninety (90) days before the change. The General Manager may require users to develop spill prevention plans where there is a potential for adverse input.
- D. *Notification of planned changes.* All users shall notify the General Manager in advance of any planned significant change in the volume or character of pollutants in the discharge, or notify the General Manager immediately after discovery of any unplanned significant change.

(Ord. No. 98-050, § 1(38-273), 5-26-1998; Ord. No. 04-171, § 7, 12-21-2004; Ord. No. 11-032, § 7, 4-12-2011)

Sec. 38.02.709. - Public notification.

The General Manager shall annually publish in the newspapers a list of the industrial users which were in significant noncompliance with any pretreatment requirements or standards during the previous calendar year. The notification shall also summarize any enforcement actions taken against the users during the same twelve (12) months.

(Ord. No. 98-050, § 1(38-274), 5-26-1998; Ord. No. 04-171, § 8, 12-21-2004)

Sec. 38.02.710. - Confidentiality.

Information and data on an industrial user from reports, questionnaires, permit applications, permits and monitoring programs and from inspections shall be available to the public or other governmental agency without restriction unless the user specifically requests and is able to demonstrate to the satisfaction of the General Manager that the release would divulge information, processes or methods of production entitled to protection as trade secrets of the user. Wastewater constituents and characteristics will not be recognized as confidential information. The County shall make all records and files pertaining to permitted facilities available to the U.S. Environmental Protection Agency and Delaware Department of Natural Resources and Environmental Control, unless otherwise prohibited by law.

(Ord. No. 98-050, § 1(38-275), 5-26-1998; Ord. No. 04-171, § 9, 12-21-2004)

Sec. 38.02.711. - Regulation of fats, oil and grease produced by commercial food establishments.

- A. *General requirements for commercial food establishments.*
  1. *General Standards.* Each CFE is subject to and must comply with the standards and procedures set out in this Division and Article 3 of this Chapter, with the exception of Section 38.02.704, Section 38.02.709, and Section 38.02.710. A violation of this Section or any other applicable sections of this Chapter shall be subject to the enforcement provisions in Article 3 of this Chapter and the ERP.
  2. *Maintenance of Traps and Interceptors.* Each CFE shall clean its grease trap and/or interceptor at the minimum frequency specified in the BMP Manual, unless required more frequently by the Department of Public Works or unless required to maintain the efficient operation of the unit. All exterior-located grease traps and interceptors shall be serviced by a grease hauler licensed by the State of Delaware to transport such

waste.

3. *Recordkeeping.* Each CFE shall maintain a grease trap and/or interceptor maintenance log on a standardized form specified by the Department of Public Works and shall make such log available for inspection by the County upon request. All service receipts, logs and maintenance records shall be kept on file for a minimum of three (3) years and made available for the County's inspection upon request. The service receipt, at a minimum, shall contain the name and address of the facility serviced, the volume of the waste removed, the date and time of service and the name and address of the waste hauler providing the service.
4. *Posting of Signs.* Each CFE must prominently display the date of the last cleaning of the grease trap and/or interceptor. In addition, every CFE must post at least one (1) sign near the sink or other drainage area, reminding employees not to place fats, oil or grease down a drain.

B. *Administrative fee.*

1. Each CFE shall pay an annual fee to cover the cost of administering the program. The annual CFE fee shall be a component of the sewer service charge for each property containing a CFE and shall be subject to all relevant provisions of Division 38.02.500 ("Sewer services charges") and any other provisions relating to sewer services charges. The annual CFE fee shall be billed as part of the sewer service charge for the property containing the CFE on the third quarterly billing due and payable on October 1 of each year. The annual CFE fee is one hundred six dollars (\$106.00) for fiscal year 2015 and shall be adjusted each year effective on July 1st to reflect the increase, if any, by which the consumer price index for the most recent year exceeds the consumer price index for the previous year. The amount of the change in the fee shall be determined by multiplying the existing fee by the percentage change in the consumer price index and rounding the result to the nearest dollar. The consumer price index for any year is the average of the consumer price index for all urban consumers published by the US Department of Labor for the Philadelphia-Wilmington-Atlantic City area as of the close of the twelve (12) month period ending on April 30th of each year. In years that the consumer price index does not change or decreases from the previous year, the fees shall remain the same.
2. A CFE may apply for an exemption from the administrative fee. The General Manager will exempt the CFE if it meets one (1) of two (2) criteria:
  - a. The CFE is a nonprofit organization as defined by 26 USC § 501(c); or
  - b. The CFE is already subject to a Wastewater Discharge Permit under Section 38.02.704.

To prove compliance with one (1) of these criteria, a CFE must provide supporting documentation, such as affidavits, financial documents, tax documents and any other materials that support its exemption.

- C. *Exemption.* A CFE may apply for an exemption from its administrative fee and the requirements listed in Subsection A.1 through A.4, if the CFE does not prepare, package, serve or produce any food products that contain or produce grease. The CFE must supply supporting documentation such as affidavits, menus, and any other document that supports its exemption. The County may conduct an inspection of the facilities prior to approval of the application. The County also may conduct periodic inspections after the application has been approved to ensure compliance with the requirements of the exemption.

(Ord. No. 04-171, § 10, 12-21-2004; Ord. No. 10-113, § 1(Exh. A), 1-18-2011; Ord. No. 11-032, § 8, 4-12-2011; Ord. No. 14-078, § 1, 9-8-2014; Ord. No. 18-031, § 57, 4-24-2018)

Delaware Recyclable Products, Inc.  
Industrial Waste Landfill  
Permit Modification Application

Geosyntec Consultants  
PART V: OPERATION AND MAINTENANCE PLAN  
Vertical Expansion

# APPENDIX V-F

## STORMWATER PLAN

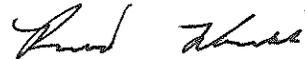
## INTRODUCTION

This Storm Water Plan (SWP) is written in accordance with the State of Delaware *Regulations Governing Storm Water Discharges Associated with Industrial Activities*.

The goal of the SWP is to improve water quality by reducing the pollutants contained in storm water discharges from the facility. The SWP has been prepared to provide guidance, practices and implementation procedures that will be used to prevent and/or control the discharge of pollutants in storm water runoff.

## CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquire of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted, is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Signature

Richard Klonowski

Printed Name

District Manager

Title

7/19/18

Date

# STORM WATER PLAN

## *GENERAL REQUIREMENTS*

Facilities covered under the State of Delaware Regulations Governing Storm Water Discharges Associated with Industrial Activities must develop a Storm Water Plan (SWP).

The SWP must be consistent with regulatory requirements and fully implemented as specified, and updated as necessary to maintain compliance with permit requirements.

The SWP shall include the following information:

SWP COMPONENTS	Check Box
Facility Identification	<input checked="" type="checkbox"/>
Facility Assessment	<input checked="" type="checkbox"/>
Facility Map	<input checked="" type="checkbox"/>
Inventory of Spills and Leaks	<input checked="" type="checkbox"/>
Industrial Material Management	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Good Housekeeping Practices</li> <li>• Preventative Maintenance Program</li> <li>• Spill Prevention and Response Measures</li> <li>• Erosion Control Practices</li> <li>• Best Management Practices</li> <li>• Additional Requirements for Salt Storage</li> <li>• Management of Runoff</li> <li>• Off-Site Vehicle Tracking</li> </ul>	
Inspection Program	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Routine Inspections</li> <li>• Comprehensive Site Evaluations</li> <li>• Secondary Containment Inspections</li> </ul>	
Monitoring Data	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Analytical Monitoring</li> <li>• Visual Observations</li> </ul>	
Training	<input checked="" type="checkbox"/>
Non-Storm Water Certification	<input checked="" type="checkbox"/>
Facility Security	<input checked="" type="checkbox"/>

A copy of the SWP shall be maintained on-site and made available upon request.

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# FACILITY DESCRIPTION WORKSHEET 1

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## FACILITY INFORMATION

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NAME OF FACILITY: Delaware Recyclable Products (DRPI)  
Industrial Landfill Facility

FACILITY CONTACT: Richard Klonowski – District Manager

ADDRESS: 246 Marsh Lane  
New Castle, DE 19720

PRIMARY STANDARD INDUSTRIAL  
CLASSIFICATION (SIC) CODE: 4953

SECONDARY SIC CODE (if any):

RECEIVING WATERBODY: Christina River

## FACILITY DESCRIPTION

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This Storm Water Plan (SWP) is developed for the Delaware Recycled Products Inc., (DRPI) industrial landfill facility, located between US Route 13 and Interstates 495 and 295 in New Castle, Delaware.

The DRPI facility currently operates as an industrial waste landfill, consisting of six (6) separate sections or “cells” designated for construction and demolition debris (CDD). The total site encompasses an approximate 146-acre permitted footprint.

Primary site activity is landfilling of CDD, with some limited industrial wastes accepted contingent on approval from the Delaware Department of Natural Resources and Environmental Control (DNREC). Outside contractors are permitted to temporarily stockpile woody debris and to chip/grind the material on site. Other activities are associated with operation of the facility, including landfilling of wastes, cell construction and closure, leachate and gas management.

Storm water runoff is generated by non-landfill areas of the site and select portions of the landfill facility. Runoff is routed to one of two detention basins (designated “East” and “West” based on site location) via drainage channels at the base of the landfill area. These basins also receive storm water pumped from construction areas of the landfill and the above ground leachate storage tank secondary containment area.

Areas of the landfill that are hydraulically disconnected (due to grading) from the storm water management system are active areas of the landfill used for ongoing waste disposal and the central portion of the landfill used for stockpiling of soil and woody debris. Precipitation and run-on to these areas infiltrates and is treated as leachate.

An inventory of industrial materials and their locations on the site is provided in Worksheet 4 of this SWP. Protected storage and/or secondary containment measures are utilized to prevent discharge of stored chemicals to the storm water management system. Potential sources of storm water pollution includes equipment and vehicles used at the facility, vehicles on-site for waste hauling purposes, and stockpiles of soil and woody debris.

*(cont.)*

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# FACILITY DESCRIPTION

## WORKSHEET 1 (cont.)

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### FACILITY DESCRIPTION

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Spill kits are located inside the Maintenance Building for the purpose of containing and mitigating any potential spills or leaks of chemicals from equipment and vehicles active on-site. The facility's spill prevention and clean-up procedures are detailed in Worksheet 6C. Equipment and vehicle maintenance is conducted at the Maintenance Building (inside or outside on a concrete pad) and is not exposed to storm water.

Stockpiles are primarily stored on the central portion of the landfill, which is not hydraulically connected to the storm water management system. Stockpiles located elsewhere may be exposed to storm water runoff prior to discharge to the facility detention basins.

The facility maintains an Erosion and Sediment Control (E&SC) Plan designed to minimize the wash-off of soil and sediment from the site and generation of dust from landfill operations. Details of the E&SC Plan are provided in Worksheet 6D.

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## POLLUTION PREVENTION TEAM WORKSHEET 2

Please identify the specific individuals, by name or by title, who are responsible for developing, implementing and maintaining the SWP. The activities and responsibilities of the team should address all aspects of the facility's SWP.

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### POLLUTION PREVENTION TEAM

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#### TEAM LEADER

NAME: Richard Klonowski  
TITLE: District Manager  
CONTACT INFORMATION: 302-468-8178 (office)  
302-476-5530 (cell)  
RESPONSIBILITIES:

- Plan Manager
- Record Keeper
- Employee Trainer

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#### TEAM MEMBERS

---

NAME: Robert Ball  
TITLE: Sr. Maintenance Technician  
CONTACT INFORMATION: 302-655-1360 (office)  
302-420-0259 (cell)  
RESPONSIBILITIES:

- Employee Trainer
- Site Inspector

---

NAME: Jarod Freese  
TITLE: EP Manager  
CONTACT INFORMATION: 215-428-4391 (office)  
215-783-2216 (cell)  
RESPONSIBILITIES:

- Employee Trainer
- Site Inspector
- Record Keeper (alt)

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- **Plan Manager** - The Plan Manager has been identified as the key person on site who is most familiar with the facility and its operations. As leader of the team, he is responsible for providing adequate structure and direction to the facility's entire storm water management program.
- **Record Keeper** - This individual is familiar with the storm water controls on site and is therefore in a position to keep records and gather reports of all storm water-related activities. The Environmental Protection Manager is also responsible for being an additional point of contact for those outside the facility who may need to discuss aspects of the facility's pollution prevention plan (i.e., regulatory officials, etc.).

- **Employee Trainer** - Since this person's normal duties include training employees on safety procedures, quality management, environmental compliance, and operating procedures, the designated managers are qualified to conduct the training concerning facility management of storm water.
- **Site Inspectors** - Each department in the facility has a representative whose routine duties will include making a visual inspection of their operational areas. The inspection will identify items or activities that may introduce contaminants to storm water. This inspection will not require documentation (i.e., inspection form) nor any additional time or effort since these individuals currently perform a similar routine inspection of the daily operations in their area for other purposes. The site inspectors will advise the Facility Manager regarding identification of pollutant sources and risks, and decision-making on appropriate BMPs. The actual implementation of the recommended BMPs and evaluation of the effectiveness of the plan will be performed jointly by all team members.

# SITE MAP WORKSHEET 3

You are to develop a facility map that identifies the following:

---

## SITE MAP CHECKLIST

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- |  |                                     |
|--|-------------------------------------|
| All of the buildings at the facility.  | <input checked="" type="checkbox"/> |
| The areas where industrial materials are stored, handled, or used in processes and the types of industrial materials associated with each area.  | <input checked="" type="checkbox"/> |
| The drainage areas associated with each storm water discharge from the facility and the associated ground cover.   | <input checked="" type="checkbox"/> |
| All storm water related drainage and discharge structures including all conveyance systems and appurtenances.  | <input checked="" type="checkbox"/> |
| Any structural storm water control (i.e. detention basins, secondary containment, storm water diversions).   | <input checked="" type="checkbox"/> |
| All surface waters that receive storm water discharges from the facility.  | <input checked="" type="checkbox"/> |
| Directions of storm water flow.  | <input checked="" type="checkbox"/> |
| Locations of the following activities where such activities are exposed to precipitation: fueling stations; vehicle and equipment maintenance and/or cleaning areas; loading/unloading areas; locations used for treatment, storage, or disposal of wastes and liquid storage tanks. | <input checked="" type="checkbox"/> |
| Location and description of non-storm water discharges.  | <input checked="" type="checkbox"/> |
| Locations of the following activities where such activities are exposed to precipitation: processing and storage areas; access roads; railcars and tracks; and the location of transfer of substance in bulk and machinery.  | <input checked="" type="checkbox"/> |
| Location and source of runoff from adjacent property containing significant quantities of pollutants of concern to the facility (an evaluation of how the quality of the storm water running onto your facility impacts your storm water discharges may be included).                | <input checked="" type="checkbox"/> |
| Locations of where major spills or leaks have occurred.  | <input checked="" type="checkbox"/> |
- 

Insert your facility site map after this page.

# INVENTORY OF INDUSTRIAL MATERIALS WORKSHEET 4

The inventory of materials shall list all types of materials handled at the facility that may potentially be exposed to precipitation or runoff, and the annual quantities of such materials. The inventory will include a short narrative for each material describing the potential of the pollutants to be present in storm water discharges. Industrial Materials means substances, products, or wastes that are exposed to precipitation and that can potentially contribute pollutants to storm water runoff or storm water infiltration. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; intermediate products; by-products; final products; or waste products, however packaged.

MATERIAL	DISCHARGE POTENTIAL	METHOD OF STORAGE/ DISPOSAL	LOCATION OF STORAGE /DISPOSAL	QUANTITY
Construction/ Demolition Wastes	Unlikely. Active landfill areas are hydraulically disconnected from the storm water management system. Precipitation and run-on to active areas is treated as leachate	Operational cover is provided on all active areas of the landfill. Upon closure of a disposal area, waste is protected with a geosynthetic membrane and soil cover, minimizing exposure of wastes to precipitation.	Active landfill areas (see Site Plan)	370,000 tons/year on average.
Antifreeze	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside.	55 gallon drums, stored inside.	Maintenance Building	Used: 110 gal/yr Stored: 1 to 2 drums (55gallons each)
Diesel Fuel	Stored Outside in truck-mounted fuel tank. Possible release during vehicle refueling.	1,000-gallon, double walled, truck mounted fuel tank stored outside.	Adjacent to Maintenance Building	Stored: 1 tank (1,000-gallons)
Diesel Fuel	Stored outside behind the Maintenance Shop	300-Gallons	Adjacent to Maintenance Building	Stored: 1 tank (300-gallons)
Engine Oil, 10W40	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside.	55-gallon drums, stored inside	Maintenance Building and Shed	Stored: 2 drums (55-gallons each)
Ferrous Sulfate Solution	Stored inside building which is curbed to contain spills.	27,328 pounds, stored inside	Leachate Pre-Treatment Building	Stored: 27,328-pounds

MATERIAL	DISCHARGE POTENTIAL	METHOD OF STORAGE/ DISPOSAL	LOCATION OF STORAGE /DISPOSAL	QUANTITY
Gear Oil, 80W90	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside	55-gallon drums, stored inside.	Maintenance Building and Shop	Stored: 1 to 2 drums (55-gallons each)
Grease	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside	55-gallon drums, stored inside.	Maintenance Building and Shop	Stored: 1 to 2 drums (55-gallons each)
Hydraulic Oil, 10W30	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside	55-gallon drums, stored inside.	Maintenance Building and Shed	Stored: 1 to 2 drums (55-gallons each)
Leachate – Raw	Store outside. Exterior secondary containment area is exposed, but any collected precipitation or leakage is subject to inspection prior to pumping.	64,000-gallon tank with secondary containment, stored outside.	Leachate Facility (see map)	Stored: 1 tank (64,000-gallons)
Leachate – Treated	Stored inside Leachate Pre-treatment building which is curbed to contain spills/leaks	Two tanks, stored inside ( 1- 500 gallon tank & 1- 5,000 gallon tank)	Leachate Pre-Treatment Building (see map)	Stored: 2 tanks (1- 500gallon tank & 1- 5,000 gallon tank)
Paint	Stored inside	Cans	Maintenance Building and Shed	Used: 20 gallons Stored: 5-gallons
Propane Fuel	Any spills/leaks would escape as gas	2 – 100-gallon tanks	Landfill Gas Flare	Stored : 2 tank (100-gallons)
Soil Material Stockpiles	Likely contact due to exposed stockpiles	Stockpile	Interior portions of inactive (not capped) landfill Cells 1 through 4	Varies
Tires	Likely exposure due to storage outside in open containers	Roll-off Containers	Used tire container at Maintenance Building	Produced: 20 tires Stored: 20 tires
Torque Fluid	Stored inside. Possible exposure due to leakage from vehicles stored and/or operated outside	55-gallon drums, stored inside	Maintenance Building and Shed adjacent to the Shop	Stored: 1 to 2 drums (55-gallons each)
Woody Materials	Likely exposure due to exposed stockpiles	Stockpile	Interior portions of inactive (not capped) landfill Cells 1 through 4	Varies

MATERIAL	DISCHARGE POTENTIAL	METHOD OF STORAGE/ DISPOSAL	LOCATION OF STORAGE /DISPOSAL	QUANTITY
Waste Oil – Mixed	Stored inside with contact not likely	Tanks with secondary containment	Shed adjacent to Maintenance Building	Produced: 3,600-gallons/year Stored: 450-gallons

# INVENTORY OF SPILLS AND LEAKS

## WORKSHEET 5

Directions: Record below all spills and leaks of industrial materials that have occurred at the facility in three years prior to the effective date of this permit.

For the purpose of this record, a spill or leak is defined as: Significant spill or discharge of materials that could impact the quality of storm water leaving the site.

1. Date of Violation: 05/24/2018

Issuing Agency: DNREC

Type of Action: Notice of Violation

Nature of Violation: It is alleged that the site allowed leachate laden stormwater to be released offsite

Disposition: Corrective action taken. No further regulatory action.

Fine or penalty: \$0.

# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6

The SWP shall describe storm water management controls that the facility will implement and maintain. The appropriateness for implementing controls listed in the SWP must reflect identified potential sources of pollutants at the facility. The SWP must describe the location of existing non-structural and structural Best Management Practices (BMPs) selected for the areas where industrial materials or activities are exposed to storm water. For areas where BMPs are not currently in place, the SWP shall describe appropriate BMPs that will be used to control pollutants in storm water discharges.

Best Management Practices are schedules of activities, prohibition of practices, maintenance procedures and other management practices or measures to prevent or reduce the discharge of pollutants.

The description of industrial material management controls must, at a minimum, address the following and provide a reasonable schedule for implementing such controls:

- Good Housekeeping Practices
- Preventative Maintenance Program
- Spill Prevention and Response
- Minimizing Exposure
- Erosion Control Practices
- Best Management Practices
- Additional Requirements for Salt Storage
- Management of Runoff
- Off-Site Vehicle Tracking

The following worksheets shall address each of the aforementioned controls.

# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6A

## *GOOD HOUSEKEEPING PRACTICES*

The SWP shall identify the practices/programs used to define the ongoing maintenance and clean up of areas, which may contribute pollutants to storm water discharges. The SWP shall include a schedule indicating the frequency for completing each housekeeping task.

GOOD HOUSEKEEPING PRACTICES	
PRACTICE/PROGRAM	SCHEDULE or FREQUENCY
Store materials in appropriate sealed containers with secondary containment (if applicable, see Worksheet 4) and store under roof where practical.	As required
Clean (e.g., sweep) sediment track-out from unimproved construction roads onto paved roads.	Weekly and as required
Contain and clean spills and properly dispose of the used spill clean-up equipment.	Upon spills and as required
Control dust by applying water and/or sweeping. Note: if water becomes an impractical dust control measure, the use of chemical dust suppressants (e.g., Road Guar) will be considered. Waste oil as a dust suppressant will <i>not</i> be allowed.	Daily or as required
Maintain material storage areas to keep clear and keep organized.	Weekly
Clean up wind blown debris and/or waste from the facility.	Weekly
Install portable litter screens to trap wind-blown litter.	As required
Clean accumulated storm water and/or debris from secondary containment.	Weekly and as required
Remove liquids from sumps, drains, manholes and witness boxes.	As required
Vehicle and equipment wash water shall not be discharged to the storm drain system.	During vehicle and equipment cleaning, and as required

# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6B

## *PREVENTATIVE MAINTENANCE PROGRAM*

The SWP shall include a program that identifies qualified facility personnel to conduct inspections and maintenance of storm water management devices as well as inspections, testing, maintaining and repairing facility equipment and systems to avoid breakdowns and failures that may result in the exposure of industrial materials to storm water. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. The SWP shall include the schedule/frequency for completing each maintenance task.

PREVENTATIVE MAINTENANCE SCHEDULE		
LOCATION OR EQUIPMENT	SCHEDULE OR FREQUENCY	NAME OR TITLE OF RESPONSIBLE PERSONNEL
Leachate Collection System (LCS)		
LCS pumps, valves, manholes, etc.	Routinely	District Manager
Perimeter LCS force main	Routinely	District Manager
Test low and high level alarms and shut-offs	Routinely	District Manager
Leachate storage tanks	Routinely	District Manager
Vehicle and Equipment Preventative Maintenance	Per manufacturer recommendations and as required	Maintenance Manager
Maintain the landfill topsoil cover and vegetation	Annually and as required	District Manager
Clean and maintain storm water drainage conveyances	Semi-annual and as required	District Manager
Conduct analytical monitoring of the groundwater control system discharge	Semi-annually	District Manager

Place cover material over active portions of the facility to prevent wind blown litter and/or debris

As required

District Manager

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# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6C

## *SPILL PREVENTION AND CLEAN-UP BMPS*

Please describe the procedures that will be followed for cleaning up spills or leaks. The procedures and necessary spill response equipment must be available to those employees who may cause or detect a spill or leak. Where appropriate, the plan must include an explanation of existing or planned material handling procedures, storage requirements, secondary containment and equipment that are intended to minimize spills or leaks at the facility. If applicable, the spill response plan shall address prevention and minimization of releases of oil and hazardous material into the storm water system. When required, the management of oil and hazardous material shall be performed in accordance with 40 CFR Part 117 and 7 Del. C Chapters 60, 62, and 63.

The SWP shall identify a team of individuals responsible for implementing spill response procedures. Personnel identified as the spill response team are responsible for follow-up inspections to ensure that spills have been properly handled to meet environmental and safety standards.

You may reference other Plans or manuals (Spill Prevention Control and Countermeasure Plans) if such documents address all requirements.

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### SPILL PREVENTION AND CLEAN-UP BMPS

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Spill procedures for handling a release of hazardous or toxic material, including leachate and fuel oils, are detailed in the facility Contingency Plan. The areas for which the possibility of spills or leaks is the greatest are the leachate transmission system and the leachate storage area.

Spill Prevention and Response BMPs include:

- Employee Training on Spill Response measures;
  - Post spill clean-up procedures and reporting requirements;
  - A spill report from (included example or similar) to normalize reporting;
  - Equipment fueling procedures; and
  - Personnel present and monitoring procedures whenever equipment or tanks are being filled.
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**SPILL/DISCHARGE INCIDENT REPORT**

**Delaware Recyclable Products, Inc.  
New Castle, Delaware**

**Site:** DRPI Landfill

**Address:** 246 Marsh Lane, New Castle, DE 19720

**Date/Time of Incident:** \_\_\_\_\_

**Substance Spilled/Discharged:** \_\_\_\_\_

**Quantity Spilled/Discharged:** \_\_\_\_\_

**Location of Incident:** \_\_\_\_\_

**Description/Cause of Incident:** \_\_\_\_\_

\_\_\_\_\_

**Clean-up Action(s) Taken:** \_\_\_\_\_

**Clean-up Personnel:** \_\_\_\_\_

**Injuries (if any):** \_\_\_\_\_

**Equipment Damage (if any):** \_\_\_\_\_

**Prevention Recommendations:** \_\_\_\_\_

\_\_\_\_\_

**Incident Initially Reported By:** \_\_\_\_\_

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**Incident Report Prepared By:**

**Name/Title:** \_\_\_\_\_

**Signature/Date:** \_\_\_\_\_

**Facility Manager**

**Name/Title** \_\_\_\_\_

**Signature/Date:** \_\_\_\_\_

# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6D

## *MINIMIZING EROSION*

You must evaluate the facility's risk for soil erosion. At a minimum, the SWP must include a narrative description of whether there is reasonable potential for soil erosion (of a significant amount) to occur. Where reasonable potential exists, the permittee must include practices/programs to prevent or minimize the potential for soil erosion on-site.

EROSION AND SEDIMENT CONTROL BMPs	
BMPs	SCHEDULE OR FREQUENCY
Divert storm water run-off to sediment basins via landfill perimeter storm water channel wherever possible.	As required
Inspect sediment basins, spillways and outfall structures for evidence of erosion and accumulated sediment	Monthly and after each significant rainfall event.
Install structural controls per landfill design and construction plans	Prior to earth-disturbing activities and as required.
Maintain structural controls per landfill design and construction plans	As required
Remove accumulated sediment and renew filter materials (as appropriate) in structural controls	As required
Maintain perimeter controls around stockpiles, down gradient of disturbed areas and up gradient of the landfill perimeter drainage channel.	As required
Install and maintain perimeter controls along the site perimeter where overland flow is not collected and diverted by the landfill perimeter drainage channel. Perimeter controls should be removed after permanent drainage features are in place and/or all up gradient areas are stabilized with permanent vegetation.	Prior to earth disturbing activities and as required
Use filtered sumps for dewatering of excavations and discharge to sediment basins via perimeter drainage channel.	As required
Install and maintain rock check dams in drainage ditches and swales as required to reduce flow velocities and provide sedimentation.	As required
Establish vegetation and/or stone linings in drainage ditches and swales	As required
Stabilize completed and/or inactive areas with temporary and permanent seed and/or mulch.	Within 14 days of activity

EROSION AND SEDIMENT CONTROL BMPS	
BMPs	SCHEDULE OR FREQUENCY
Temporarily stabilize intermediate cover that will not be removed for additional waste placement within three months. Temporary stabilization should be completed in accordance with the most current version of the "Delaware Erosion and Sediment Control Handbook" (1989) and the "New Castle County Sediment Control and Storm Water Management Program Handbook" (1991)	Within 14 days o activity
Repair and stabilize rills, gullies and washouts and other areas of erosion.	As Required
ADDITIONAL INFORMATION (if any)	
Maintain (i.e., mow) vegetated landfill slopes to develop a dense and stable turf	Semi-annually
Contain storm water that has been in contact with waste by grading and berming active working surfaces such that storm water is forced to infiltrate the waste to be collected and managed as leachate.	As required
Apply operational cover soils over waste.	Bi-weekly
Minimize the area of exposed waste.	Ongoing
Chip and grind woody debris for disposal in the active areas of the landfill	As soon as practical

# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6E

## *MINIMIZING EXPOSURE*

Where practicable, industrial materials and activities should be protected by storm resistant shelters to prevent exposure to rain, snow, snowmelt or runoff.

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INDUSTRIAL MATERIAL/ACTIVITY	STORM RESISTANT SHELTER
Equipment and vehicle maintenance	Maintenance Building

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Additional Information (if any)

See Worksheet #4 for discussion of industrial materials used and/or stored on-site.

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# INDUSTRIAL MATERIAL MANAGEMENT WORKSHEET 6F

## *BEST MANAGEMENT PRACTICES (BMPs)*

Please describe the BMPs used to reduce the discharge and potential discharge of pollutants in storm water. Be sure to include all BMPs required by DNREC, as these BMPs are considered the minimum set of BMPs for a specific industrial activity.

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STRUCTURAL SOURCE CONTROL BMPS	
BMPs	SCHEDULE OR FREQUENCY
Construct and maintain storm water management system per landfill design and construction plans	As required
Divert storm water run-off to sediment basins via landfill perimeter drainage ditch to the maximum extent practical	As required
Divert storm run-on away from active landfill area	As required

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# INSPECTION PROGRAMS

## WORKSHEET 7

The SWP shall include documentation of procedures to assure compliance with the inspection program requirements as outlined in the regulations. Facility personnel are required to conduct: routine inspections; comprehensive site evaluations; and secondary containment inspections.

### *ROUTINE INSPECTIONS*

The facility shall conduct monthly inspections and areas of the facility designated in the SWP. The SWP shall identify the frequency for which these inspections are conducted. These inspections shall ensure the proper operation of plant equipment and storm water controls. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records shall be maintained for problems observed. Corrective actions shall be implemented within 14 days of the inspection.

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#### ROUTINE INSPECTIONS

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Name or Title of Inspector:	District Manager or designee
Frequency of Inspection:	Weekly
Areas Inspected:	Active landfill areas and equipment maintenance areas.

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Name or Title of Inspector:	District Manager or designee
Frequency of Inspection:	Monthly
Areas Inspected:	Entire facility including active areas, equipment maintenance areas, and storm water management system.

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The following is an example Site Inspection Checklist. This form or similar to be utilized by the DRPI District Manager on their Weekly/Monthly Site Inspections.

## LANDFILL OPERATIONS INSPECTION REPORT

### Delaware Recyclable Products, Inc. New Castle, Delaware

**Site:** DRPI Landfill  
**Address:** 246 Marsh Lane, New Castle, DE 19720  
**Date/Time:** \_\_\_\_\_

**Time since Last Rain:** (circle one) >72 Hours < 72 Hours  
**Quantity of Last Rain:** (circle one) > 0.5 inch < 0.5 inch

**Conditions** (circle response and provide comments below):

Landfill Cover:	Good	Needs Repair	N/A
Benches:	Good	Needs Repair	N/A
Downchutes:	Good	Needs Repair	N/A
Perimeter Channels:	Good	Needs Repair	N/A
Ponds:	Good	Needs Repair	N/A
Maintenance/Fuel Area:	Good	Needs Repair	N/A
Parking Area:	Good	Needs Repair	N/A
E&S Control (silt fence, etc):	Good	Needs Repair	N/A
Litter Control:	Good	Needs Repair	N/A
Leachate Outbreaks:	Good	Needs Repair	N/A

**Comments:** \_\_\_\_\_

**Observations:** (circle response and provide comments below):

Storm Water Odor:	None	Odor Present	N/A
Storm Water Clarity:	Clear	Cloudy	N/A
Sheen:	None	Sheen Present	N/A

**Comments:** \_\_\_\_\_

**Printed Name and Title:** \_\_\_\_\_

**Inspector's Signature:** \_\_\_\_\_

# INSPECTION PROGRAMS WORKSHEET 7A

## *COMPREHENSIVE SITE EVALUATIONS*

Permittees shall conduct comprehensive site evaluations semi annually specified in the regulations. The evaluation(s) are in addition to the routine inspections required in Worksheet 7. The evaluation(s) may substitute for a routine inspection if it is conducted during the regularly scheduled routine inspection. The evaluation must be conducted by one or more qualified employees or contractor personnel who are familiar with the industrial activity(ies) performed at the facility and the elements of the SWP. The inspections shall evaluate:

- Areas identified in the Inventory of Industrial Materials of the SWP;
- Structural controls, including good housekeeping measures and spill prevention;
- Storm water outfalls and reasonably accessible areas immediately downstream
- of each storm water outfall that is authorized under the regulations; and
- Records required by the regulations

The following is an example Comprehensive Site Evaluation Checklist. This form or similar to be utilized by the DRPI District Manager.

SEMI ANNUAL COMPREHENSIVE SITE EVALUATION INSPECTION

FACILITY: DRPI Landfill DATE: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_ WEATHER: \_\_\_\_\_

INSPECTION ITEMS	YES/NO OR N/A	RECOMMENDED ACTIONS	FOLLOW-UP DATE
<b><i>Records Review</i></b>			
Copy of SWP On-Site	_____	_____	_____
Copy of Permit	_____	_____	_____
Training Records	_____	_____	_____
Inspection Records	_____	_____	_____
Monitoring Data (Quarterly Visuals and Analytical)	_____	_____	_____
Spill Records	_____	_____	_____
<b><i>Effectiveness of Spill Prevention and Response Measures</i></b>			
Outdoor Areas Free of Spilled Material	_____	_____	_____
Spill Kits Available and Stocked	_____	_____	_____
Storage Containers Clearly Labeled	_____	_____	_____
Other	_____	_____	_____
<b><i>Inventory of Exposed Materials Inspection</i></b>			
Material Storage Areas Protective of Storm Water	_____	_____	_____
Storage Containers Leaking	_____	_____	_____
Waste Storage Areas Protective of Storm Water	_____	_____	_____
New Materials Stored On-Site With Potential Exposure To Storm Water	_____	_____	_____
Other	_____	_____	_____

SEMI ANNUAL COMPREHENSIVE SITE EVALUATION INSPECTION

FACILITY: DRPI Landfill DATE: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_ WEATHER: \_\_\_\_\_

INSPECTION ITEMS	YES/NO OR N/A	RECOMMENDED ACTIONS	FOLLOW-UP DATE
<b><i>Structural Controls And Maintenance Programs Inspections</i></b>			
Evidence of Flooding or Other Drainage Problems	_____	_____	_____
Structural Controls Operating	_____	_____	_____
Maintenance Being Performed on Structural Controls	_____	_____	_____
Records Available Documenting Maintenance	_____	_____	_____
Other	_____	_____	_____
<b><i>Inspection of BMPs and Housekeeping Effectiveness</i></b>			
Areas Free of Trash and Debris	_____	_____	_____
Waste Receptacles Available and Intact	_____	_____	_____
Dumpsters Closed and Free of Leaks	_____	_____	_____
BMP's Being Implemented and Maintained as Required – see BMP list	_____	_____	_____
Other	_____	_____	_____
<b><i>Outfalls</i></b>			
Outfalls Clean and Free of Debris	_____	_____	_____
Staining or Signs of Contaminant Release	_____	_____	_____
Other	_____	_____	_____

# INSPECTION PROGRAMS WORKSHEET 7B

## *SECONDARY CONTAINMENT INSPECTIONS*

A visual inspection by a facility employee shall be conducted before accumulated storm water is released from a secondary containment structure. The secondary containment structure shall be visually observed for color, foam, visible sheen and dry weather flow prior to release. Accumulated storm water shall be released if found to be uncontaminated by the material stored within the containment area. Records documenting the individual making the observation, the description of the accumulated storm water and the date and time of the release shall be maintained.

Visual inspections shall be performed before accumulated storm water is discharged from the secondary containment structures for the 64,000-gallon leachate storage tank. Should contamination of accumulated storm water be detected (e.g. discoloration), the water shall be managed as leachate (i.e., pumped into pretreatment system and discharged to the municipal sanitary sewer).

The following is an example Secondary Containment checklist. This or a similar checklist may be used to record visual inspections.

DATE	CONTAMINANT PRESENT (Yes/No) <sup>1</sup>	OTHER OBSERVATIONS	WATER RELEASED (Yes/No)	EMPLOYEE INITIALS

If yes, the (1) label contaminant type (e.g., leachate); (2) do not discharge accumulated storm water that appears to be contaminated to surround area (contaminated storm water shall be pumped into an appropriate container for proper disposal).

## MONITORING WORKSHEET 8

Storm water must be sampled semi annually according to the instructions outlined in the regulations. Permittees are not required to sample outside of regular business hours or during unsafe conditions. There are three individual and separate categories of monitoring requirements [Visual Monitoring, Benchmark Monitoring and Effluent Limitations] that a facility may be subject to (**NOTE: As a landfill facility, DRPI is not subject to these categories of monitoring requirements**). The monitoring requirements applicable to a facility depend on the types of industrial activities conducted at the facility.

Monitoring requirements and limitations are applied to discharge from facilities with co-located activities. Where storm water from the co-located activities are commingled, the monitoring requirements and limitations are additive. Where more than one numeric limitation for a specified parameter applies to a discharge, compliance with the more restrictive limitation is required.

Permittees who believe that two or more outfalls discharge storm water substantially identical may test the discharge of one such outfall and report that the quantitative data also applies to the substantially identical outfalls.

Per section 9.1.01.4 of the Multi-Sector General Permit, landfill facilities are subject to monitoring requirements under Delaware's *Regulations Governing Solid Waste* in place of the MSGP monitoring requirements. The DRGSW does not specifically address surface water monitoring. However, the DRPI facility operations permit (SW-15/02, issued December 30, 2015) does specify surface water monitoring requirements. Monitoring procedures, including sampling and analytical methods, shall conform to the following guidelines.

## MONITORING SCHEDULE AND PARAMETERS

Semi-annually, during April and October, water quality samples shall be collected from Outfall 001 and Outfall 002. These samples shall be analyzed in the field for:

- pH
- Specific Conductance
- Temperature
- Turbidity

In addition, these samples shall be analyzed in the laboratory for the following indicator parameters:

- pH
- Total Suspended Solids
- Chemical Oxygen Demand
- Iron
- Copper
- Arsenic
- Barium
- Selenium
- Ammonia
- Total Petroleum Hydrocarbons
- Biological Oxygen Demand
- Lead
- Zinc
- Manganese
- Vanadium

Monitoring parameters may be removed from the monitoring list at the Department's discretion if detectable parameters are below the levels of concern.

## SAMPLE COLLECTION METHODS

Samples for field testing and analytical analysis shall be collected from Outfalls 001 and 002, following the specified sampling schedule.

- Each sample shall be a grab sample, collected within the first 30 minutes of a rainfall of 0.1 inches or greater.
- The sampled run-off event must be preceded by at least 72 hours without measurable rainfall (i.e. total rainfall accumulation shall not be greater than 0.1 inches).
- The following information shall be documented as part of the sampling collection procedures:
  - o Sampling location (outfall number)
  - o Date and time of sample collection
  - o Date and time of start of rainfall
  - o Name and title of person collecting samples and performing field testing
  - o Total rainfall volume (in inches) and duration
  - o Date of previous rainfall event (must be at least 72 hours prior to sampled rainfall event)
- Sampling results shall be reported to DNREC within 60 days of the sampling date.

## **ANALYTICAL METHODS**

Test methods for analytical analysis of surface water samples shall conform to the most recent legal edition of EPA Publication SW-846, or EPA Publication “Methods of Chemical Analysis for Water and Wastes” or Standard Methods for Examination of Water and Waste Water if a parameter is not included in SW-846.

Sampling results shall be reported to DNREC within 60 days of the sampling date.

# MONITORING WORKSHEET 8A

## *QUARTERLY VISUAL MONITORING*

Permittees are required to perform and document quarterly visual examinations of storm water discharges associated with industrial activities from each storm water outfall. The examinations must be made at least one in each of the following three month periods: January through March; April through June, July through September; and October through December. The examination must document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen and other obvious indicators of storm water pollution. The examination must be performed during daylight hours and must be made of samples collected within the first thirty (30) minutes of when runoff or snowmelt begins discharging from the facility. If no storm event resulted in runoff from the facility during a monitoring quarter, the permitted is excused from visual monitoring for that quarter provided that documentation is included with the monitoring records indicating that no runoff occurred.

**As noted under Worksheet #8, quarterly visual monitoring requirements are not applicable to the DRPI facility.**

# MONITORING WORKSHEET 8B

## *ANALYTICAL MONITORING: BENCHMARK MONITORING AND EFFLUENT LIMITATIONS*

Storm water shall be sampled for the parameters listed in the following table. Storm water shall be sampled twice a year, and results shall be compared to Benchmark Monitoring Concentration Values. The Benchmark Monitoring Concentration Values represent target pollutant concentrations for a facility to achieve through implementation of its Storm Water Plan. Analytical results that exceed a Benchmark Monitoring Concentration value are not a violation of the Permit as these values are not Numeric Effluent Limitations. However, results that exceed a Benchmark Monitoring Concentration Value are indications that the storm water discharge could potentially cause or contribute to causing, water quality impairment in the receiving waterbody. The Benchmark Monitoring Values are also viewed as a level, that if below, the discharge presents little potential for water quality concern. In the event that analytical results exceed Benchmark Monitoring Concentration values, the facility shall investigate the cause for such exceedance and the results of this investigation shall be documented. The results shall identify potential sources of pollution, additional BMPS necessary, or revisions to the SWP that are necessary in order to meet the goal of the Benchmark Monitoring Values.

**As noted under Worksheet #8, benchmark monitoring requirements are not applicable to the DRPI facility.**

## EMPLOYEE TRAINING WORKSHEET 9

Facility employees and contractor personnel that work in areas where Industrial Materials are used or stored shall be appropriately trained to meet the requirements of the SWP. Employee training shall be conducted and documented not less than once per year. Training shall include such topics as spill response, good housekeeping practices, material management practices, etc.

<b>Training Topics</b>	<b>Description of Training Program</b>	<b>Schedule for Training</b>	<b>Required Attendees</b>
Spill Prevention and Response	Training on spill response and cleanup procedures, equipment safety, and reporting will be conducted by the District Manager	Annual	All site workers
Good Housekeeping	Training on proper material storage and disposal and site drainage will be conducted by the District Manager	Annual	All site workers
Material Management Practices	Training on material storage and disposal	Annual	All site workers
Erosion and Sediment Control	The Pollution Prevention Plan Team Leader or Region/District Engineer will conduct training on proper erosion and sediment control and control of particulate emissions	Annual	Operation Manager and all site workers
Storm Water Pollution Prevention Plan	Initial training on the complete contents and implementation of the facility SWPPP will be conducted by the District Manager	Within 30 days of hiring	New employees (excluding administrative/office personnel)

# NON-STORM WATER CERTIFICATION WORKSHEET 10

The SWP shall include measures to identify and eliminate the discharge of process wastewater, domestic wastewater, non-contact cooling water and other illicit discharges to storm water drainage systems or to surface waters of the State.

The DRPI facility groundwater control system discharges non-storm water to the storm water management system, as approved under the facility solid waste permit (SW-15/02, issued December 30, 2015). Groundwater is collected from underneath the liner of Cells 4 and 5 (lined cells) and pumped to the perimeter channels that convey surface runoff from the landfill to one of the two sediment basins. An interceptor trench was installed to divert potentially contaminated groundwater from underneath Cells 1-3 (unlined cells) to the leachate treatment system.

Measures are in place to prevent discharge to the storm water management system of leachate and waters associated with equipment and vehicle maintenance and cleaning. These constitute the only other sources of non-storm water generation at the site. The following table details the location of these sources and measures in place to prevent their discharge to the storm water management system.

<b>Source</b>	<b>Location</b>	<b>Storm Water Discharge Prevention</b>
Leachate	Generation: Landfill Storage: Leachate storage tank (see Site Plan) Discharge: Municipal sanitary sewer, via pretreatment system	A liner system under Cells 4 and 5 prevents migration of leachate into groundwater pumped to the storm water management system. Groundwater from underneath Cells 1-3 is segregated from the groundwater control system.  The leachate collection and storage system is equipped with measures to prevent discharges to the storm water management system.
Equipment/Vehicle maintenance and wash water	Generation: Maintenance Building Discharge: Municipal sanitary sewer	All equipment and vehicle maintenance and washing is performed in the Maintenance Building. Used water discharges to floor drains, routed to an oil-water separator and ultimately to the municipal sanitary sewer.

# FACILITY SECURITY WORKSHEET 11

Please describe security systems in place to prevent an accidental or intentional discharge of materials through vandalism.

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## FACILITY SECURITY DESCRIPTION

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As described in the DRPI facility O&M Manual, the DRPI facility is secured by a combination of fencing, locking gates and natural and man-made barriers (e.g. inundated wetlands). Access to the stie is continuously controlled, and only DRPI personnel have keys to the facility. DRPI is responsible for opening the gates at the beginning of each workday and locking and securing the site at the conclusion of each workday.

All visitors or customers must use the main access road to gain access to the site. Operators are required to stop at the scale house station to have their vehicles weighed and checked in. Other visitors must register at the DRPI administrative office.

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