RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
PERMITS SECTION
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

PUBLIC NOTICE OF PROPOSED PERMIT ACTIONS UNDER THE RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PROGRAM WHICH REGULATES DISCHARGES INTO THE WATERS OF THE STATE UNDER CHAPTER 46-12 OF THE RHODE ISLAND GENERAL LAWS OF 1956, AS AMENDED.

DATE OF NOTICE: Friday, June 26, 2026

PUBLIC NOTICE NUMBER: PN-26-03

DRAFT RIPDES PERMITS
RIPDES PERMIT NUMBER: **RI0021814**

NAME AND MAILING ADDRESS OF APPLICANT:
Ashaway Line and Twine Manufacturing Company
24 Laurel Street
Ashaway, Rhode Island 02804

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:
Ashaway Line and Twine Manufacturing Company
Upper and Lower Mill Building Boilers
Laurel Street
Ashaway, Rhode Island 02804

RECEIVING WATER: **Ashaway River & Tributaries [RI0008039R-02B]**

RECEIVING WATER CLASSIFICATION: **B**

The facility, located in Ashaway, manufactures cord and twine. The discharge consists of boiler blowdown from the facility's two steam boilers, including a chemical additive used to prevent corrosion to the steam boilers. The Lower Mill discharges to Outfall 001 through a 2-inch diameter pipe, and the Upper Mill discharges to Outfall 002 through a 2-inch diameter pipe. The boiler blowdowns from both mills are discharged to the Ashaway River (also known as the Ashawog River). This permit includes monitoring and effluent limits to ensure that the discharge will not cause a water quality violation. It requires that the facility monitor the discharge and report the results to the DEM on a regular schedule.

RIPDES PERMIT NUMBER: **RI0023973**

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Tiverton
343 Highland Road
Tiverton RI, 02878

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Tiverton Landfill #2
3524 Main Road
Tiverton, RI 02878

RECEIVING WATERS: **Quaker Creek [RI0010031R-04]**
Borden Brook & Tributaries [RI0010031R-01]

RECEIVING WATER CLASSIFICATION: **Quaker Creek: AA,**
Borden Brook & Tributaries: AA

The facility, which is the source of the discharge, is a capped, unlined, inactive landfill located in Tiverton, RI. The discharge consists of runoff from the capped landfill. The runoff passes through on-site stormwater BMPs such as detention basins, bioretention areas, sediment forebays, erosion control, check dams, and rip rap prior to discharge to the designated receiving waters through Outfalls 001, 002, 004, 0005, and 006. As per the Total Maximum Daily Loads (TMDL) for Phosphorus for the City of Newport Drinking Water Reservoirs, approved by EPA in November 2021, the Town of Tiverton was required to obtain a RIPDES permit to mitigate the observed water quality impacts from the facility. The permit reflects the current state of the facility, regulating the discharge from the inactive, capped, landfill. The permit includes effluent benchmarks for pollutants of concern and a regular monitoring and reporting schedule.

FURTHER INFORMATION:
A statement of basis (describing the type of facility and significant factual, legal and policy questions considered in these permit actions) for each permit may be obtained at no cost by writing or calling DEM as noted below:

Ekaterini Papazekos, EIT, Environmental Engineer I
Rhode Island Department of Environmental Management
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908-5767
(401) 537-4036
Email: ekaterini.papazekos@dem.ri.gov

The administrative record containing all documents relating to these permit actions is on file and may be inspected, by appointment, at the DEM's Providence office mentioned above between 8:30AM and 4:00 PM, Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:
Pursuant to Chapter 42-17.4 of the Rhode Island General Laws a public hearing has been scheduled to consider these permits if requested. Requests for a Public Hearing must be submitted in writing to the attention of Ekaterini Papazekos at the address above. Notice should be taken that if DEM receives a request from twenty-five (25) people, a governmental agency or subdivision, or an association having no less than twenty-five (25) members on or before 4:00 PM on Monday, July 27, 2026, a public hearing will be held at the following time and place:

5:00 PM Monday, August 4, 2026
Room 280
235 Promenade Street
Providence, Rhode Island 02908

Interested persons should contact DEM to confirm if a hearing will be held at the time and location noted above.

235 Promenade Street is accessible to individuals who are handicapped. If communication assistance (readers/interpreters/captioners) is needed, or any other accommodation to ensure equal participation, please call Ekaterini Papazekos or RI Relay 711 by 4 PM on Friday, July 31, 2026, so arrangements can be made to provide such assistance at no cost to the person requesting.

Interested parties may submit comments on the permit actions and the administrative record to the address above no later than 4:00 PM on Wednesday, August 5, 2026.

If, during the public comment period, significant new questions are raised concerning any of the permits, DEM may require a new draft permit or statement of basis or may reopen the public comment period. A public notice will be issued for any of these actions.

Any person, including the permittee/applicant, who believes these permit actions are inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period under 250-RICR-150-10-1.42 of the Regulations for the Rhode Island Pollutant Discharge Elimination System. The public comment period is from Friday June 26, 2026 to Wednesday August 5, 2026. Commenters may request a longer comment period if necessary to provide a reasonable opportunity to comply with these requirements. Comments should be directed to DEM as noted above.

FINAL DECISION AND APPEALS:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final decision and forward a copy of the final decision to the permittee and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final decision, any interested person may submit a request for a formal hearing in accordance with the requirements of 250-RICR-150-10-1.50 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

25 June 2026
Date

Heidi Travers
Heidi Travers, P.E.
Environmental Engineer IV
RIPDES, Office of Water Resources
Department of Environmental Management

AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended, the

TOWN OF TIVERTON
343 HIGHLAND ROAD
TIVERTON, RI 02878

is authorized to discharge from a facility located at

TIVERTON LANDFILL #2
3524 MAIN ROAD
TIVERTON, RI 02878

to receiving waters named

QUAKER CREEK [RI0010031R-04]
BORDEN BROOK [RI0010031R-01]

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on _____.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit consists of nineteen (19) pages in Part I including effluent limitations, monitoring requirements, etc., and nine (9) pages in Part II including General Conditions.

Signed this _____day of _____, 2026.

DRAFT

_____
Joseph B. Haberek, P.E.
Administrator of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

PART I
I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I.A.1 During the period beginning on the effective date of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial numbers: 001A (at the north-northwest landfill edge, also identified as "OF-1), 005A (at the southwest corner of the landfill, also identified as "OF-5"), 006A (at the west-southwest end of site across the landfill access road from OF-5, also identified as "OF-6"). The sampling locations shall be at the discharge points of the outfalls before the wastewater enters the surrounding wetlands / receiving waterbody. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Minimum	Maximum	Measurement Frequency	Sample Type
Flow	--- GPD	--- GPD				See Footnote 1	Calculated[1]
TSS				--- mg/L	---mg/L	2 Samples/6-Months[3]	Grab[2]
Enterococcus[4, 5]				--- #/100 mL	--- #/100 mL	2 Samples/6-Months[3]	Grab[2]
Total Phosphorus				--- mg/L	---mg/L	2 Samples/6-Months[3]	Grab[2]
Total Iron[4]				--- mg/L	---mg/L	2 Samples/6-Months[3]	Grab[2]
Total Copper[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Lead[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Nickel[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Zinc[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Arsenic[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Cadmium[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]
Total Silver[4]				--- mg/L	--- mg/L	2 Samples/6-Months[3]	Grab[2]

--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1]Flow shall be calculated using the drainage area, runoff coefficient, and the amount of rainfall for each storm event.
[2]The Grab or "First Flush" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected during the first sixty (60) minutes of a discharge.
[3]Monitoring is required twice per each 6-month interval (January 1 through June 30 and July 1 through December 31). Each monitoring event must be conducted during a representative and measurable storm event that follows the preceding monitoring event by at least thirty (30) days. Samples must be obtained from a discharge which is the result of a representative storm event that occurs at least forty-eight (48) hours after the previously measurable (greater than 0.1 inches in magnitude) storm event. A representative storm event should be within 50% of the average Rhode Island storm event (0.7 inches in depth and 12 hours in duration) for both depth and duration, but in no case less than 0.1 inches per twenty-four (24) hours.
[4]If the pollutant is not detected in the discharge (i.e., non-detect using sufficiency sensitive detection limits) in at least four (4) samples over twelve (12) consecutive months, after notifying the Department and receiving written approval from the Department, the permittee may discontinue monitoring.
[5]Facility may use either a colony forming unit (CFU) or most probable number (MPN) test method that is 40 CFR Part 136 approved.

I.A.2 During the period beginning on the effective date of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial numbers: 002A (at the north-northeast landfill edge, also identified as “OF-2”), and 004A (at the east-northeast landfill edge, also identified as “OF-4”) The sampling locations shall be at the discharge points of the outfalls before the wastewater enters the surrounding wetlands / receiving waterbody. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Minimum	Maximum	Measurement Frequency	Sample Type
Flow	--- GPD	--- GPD				1/Day	Calculated[1]
TSS				--- mg/L	---mg/L	2 Samples/6-Months[3]	Grab[2]
Enterococcus[4, 5]				--- #/100 mL	--- #/100 mL	2 Samples/6-Months[3]	Grab[2]
Total Phosphorus				--- mg/L	---mg/L	2 Samples/6-Months[3]	Grab[2]

--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1]Flow shall be calculated using the drainage area, runoff coefficient, and the amount of rainfall for each storm event.

[2]The Grab or "First Flush" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected during the first sixty (60) minutes of a discharge.

[3]Monitoring is required twice per each 6-month interval (January 1 through June 30 and July 1 through December 31). Each monitoring event must be conducted during a representative and measurable storm event that follows the preceding monitoring event by at least thirty (30) days. Samples must be obtained from a discharge which is the result of a representative storm event that occurs at least forty-eight (48) hours after the previously measurable (greater than 0.1 inches in magnitude) storm event. A representative storm event should be within 50% of the average Rhode Island storm event (0.7 inches in depth and 12 hours in duration) for both depth and duration, but in no case less than 0.1 inches per twenty-four (24) hours.

[4] If the pollutant is not detected in the discharge (i.e., non-detect using sufficiency sensitive detection limits) in at least four (4) samples over twelve (12) consecutive months, after notifying the Department and receiving written approval from the Department, the permittee may discontinue monitoring.

[5]Facility may use either a colony forming unit (CFU) or most probably number (MPN) test method that is 40 CFR Part 136 approved.

I.A.3 During the period beginning on the effective date of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial numbers: 001A (at the north-northwest landfill edge, also identified as “OF-1), 002A (at the north-northeast landfill edge, also identified as “OF-2”), and 004A (at the east-northeast landfill edge, also identified as “OF-4”), 005A (at the southwest corner of the landfill, also identified as “OF-5”), 006A (at the west-southwest end of site across the landfill access road from OF-5, also identified as “OF-6”) The sampling locations shall be at the discharge points of the outfalls before the wastewater enters the surrounding wetlands / receiving waterbody. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity – lbs./day		Concentration – Specify Units				
	Average Monthly	Maximum Daily	Average Monthly	Minimum	Maximum	Measurement Frequency	Sample Type
PFAS Analytes[1]					--- ng/L	1/Year	Grab [1]

--- signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1]Sampling for the listed PFAS parameters listed in Appendix 2. PFAS shall be analyzed using Clean Water Act wastewater draft analytical method 1633 until a 40 CFR Part 136 approved test method for wastewater is approved. Report the results of all PFAS analytes required to be tested as part of the method in NetDMR.

I.A.4 The permittee shall ensure the following conditions are met:

a. The pH of the effluent shall not be less than 6.5 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment process.

I.A.5 All existing manufacturing, commercial, mining, silvicultural dischargers, and research facilities must notify the Director as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 µg/L);

(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/L) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 CFR 122.44(f) and Rhode Island Regulations.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:

(1) Five hundred micrograms per liter (500 µg/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40CFR122.21(g)(7);.

(4) Any other notification level established by the Director in accordance with 40CFR122.44(f) and Rhode Island Code of Regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant, which was not reported in the permit application.

I.A.6 The RIPDES program must be notified in writing if there has been a change in the status of any outfall or if the discharge from any permitted outfall has been eliminated, no later than thirty (30) days following the elimination of discharge.

a. If the permittee will be constructing new outfalls, a RIPDES application for a permit modification must be submitted no later than 180 days prior to commencement of a discharge. No new outfalls may be created which discharge to surface waters without being permitted by RIPDES.

b. Changes to existing outfalls must be approved by RIPDES prior to any modification. This includes but is not limited to: any modifications to the site that would result in changes to

drainage areas; the flow, detention, and/or pathway of landfill stormwater to outfalls; any other significant change that may result in changes to the nature or magnitude of pollutants being discharged from the site.

I.A.7 This permit authorizes the discharge of stormwater runoff and the following allowable non-stormwater discharges only:

a. firefighting activities;

b. fire hydrant flushings;

c. routine external building washdowns that do not use detergents or hazardous cleaning products (such as those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols) and do employ appropriate control measures to minimize discharges of mobilized solids and other pollutants;

d. lawn watering;

e. uncontaminated ground water, springs;

f. air conditioning condensate;

g. potable waterline flushings;

h. irrigation drainage;

i. foundation or footing drains where flows are not contaminated with process materials, such as solvents, or contaminated by contact with soils, where spills or leaks of toxic or hazardous materials has occurred.

j. Water sprayed for dust control;

k. Uncontaminated utility vault dewatering; dechlorinated waterline testing water; hydrostatic test water that does not contain any treatment chemicals and is not contaminated with process chemicals;

l. Pavement wash waters, provided that detergents or hazardous cleaning products are not used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols), and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities, or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags), and for which appropriate control measures are in place to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention, settlement);

m. Discharges from washing of vehicles provided: chemicals, soaps, detergents, hazardous cleaning products (such as those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols), steam, or heated water are not used; cleaning is restricted to the outside of the vehicle (e.g., no engines, transmissions, undercarriages, or truckbeds); or washing is not used to remove accumulated industrial materials, paint residues, heavy metals or any other potentially hazardous materials from surfaces; and

If any of these allowable non-stormwater discharges may reasonably be expected to be present, they must be specifically identified and addressed in the facility's stormwater Pollution Prevention Plan (SWPPP) required under Part I.B.

I.A.8 The discharge of contaminated groundwater is not authorized by this permit.

I.A.9 The permittee shall analyze its effluent at outfalls 001, 002, 004, 005, and 006 for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Tables II and III and submit the results to the Department of Environmental Management at the start of the fourth year of the permit (XXXX). All sampling and analysis shall be done in accordance with EPA Regulations, including 40 CFR Part 136.

I.A.10 This permit serves as the State's Water Quality Certificate for the discharges described herein. A copy of the active permit shall be retained by the permitee. If no permanent structure exists on site, the Town Hall or associated Public Works offices shall retain a copy of the active permit.

I.B. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

I.B.1 A Stormwater Pollution Prevention Plan (SWPPP) shall be implemented and maintained by the permittee. **A SWPPP shall be submitted to address the requirements from Part I.B to the Rhode Island Department of Environmental Management (DEM) within ninety (90) days (XXX XX, 202X) of the effective date of this permit.** The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of stormwater discharges associated with the facility. In addition, the SWPPP shall describe and ensure the implementation of Best Management Practices (BMPs) that are to be used to reduce or eliminate the amount of pollutants in stormwater discharges associated with the facility and to assure compliance with the terms and conditions of this permit. Some of the specific BMPs that must be evaluated in the SWPPP are the reduction of peak runoff flows and volumes, reduction of impervious surfaces, restoration of natural buffers and drainage systems (e.g., overland flow and grassy swales), infiltration of rooftop runoff, vacuum-assisted sweeping, and the use of permeable parking surfaces.

I.B.2 The SWPPP shall be signed by the permittee in accordance with the RIPDES Regulations (RI Code of Regulations: 250-RICR-150-10-1.12) and retained on-site. Upon request, the SWPPP shall also be made available to the Department of Environmental Management at any time.

I.B.3 If the SWPPP is reviewed by the Department of Environmental Management, the permittee may be notified at any time that the SWPPP does not meet one or more of the minimum requirements of this Part. After such notification, the permittee shall make changes to the SWPPP and shall submit a written certification that the requested changes have been made. Unless otherwise provided by the Department of Environmental Management, the permittee shall have thirty (30) days after such notification to make the necessary changes.

I.B.4 The permittee shall immediately amend the SWPPP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges (based upon exceedances of any effluent limitations in Part I.A, exceedances of benchmark concentrations in Part I.E, or the results of the inspections required in Part I.C of this permit). If the amendments include changes to the structural controls, the revised SWPPP must include a schedule for the implementation of the proposed structural modifications. The permitee shall promptly, and in no case later than thirty (30) calendar days from the date that the SWPPP is amended, implement any changes to non-structural pollution prevention measures. Proposed changes to structural stormwater controls must be approved by the DEM prior to implementation. Upon DEM approval of the changes to the structural controls, the permitee shall implement the changes in accordance with the approved schedule. Changes must be noted and then submitted to the DEM within fourteen (14) days. Amendments to the Plan may be reviewed in the same manner as Part I.B.3 of this permit.

I.B.5 The SWPPP shall include, at a minimum, the following items:

a. Description of Potential Pollutant Sources. The SWPPP must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to stormwater discharges, or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. It must identify all activities and significant materials, which may potentially be significant pollutant sources. The SWPPP shall include:

b. A site map with a suitable scale (no smaller than 1"=100') that supports easy identification of the following items indicating:

(1) property boundaries and the overall size of the property in acres;

(2) a delineation of the drainage area of each stormwater outfall including the directions of stormwater flow;

(3) a delineation of all surface waterbodies in the vicinity of the facility, including wetlands, with an indication of any impairments or established TMDLs;

(4) a delineation of all impervious surfaces, and the location of all significant structures;

(5) location of each existing stormwater control measures and stormwater conveyances including diches, pipes, and swales;

(6) locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall 001), identify if the outfall will be used as a stormwater monitoring point, and an approximate outline of the area draining to each outfall;

(7) locations where significant materials are exposed to stormwater, and locations of potential pollutant sources;

(8) locations where significant leaks or spills have occurred;

(9) all separate storm sewers;

(10) location and description of non-stormwater discharges;

(11) the locations of the following activities where such areas are exposed to stormwater: scrap and waste material storage, outdoor scrap and waste processing equipment, containment areas for turnings exposed to cutting fluids, fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, access roads and rail lines, material handling areas, material storage areas, process areas, liquid storage tanks, waste disposal areas, and machinery;

c. Location and source of runoff from adjacent property containing significant quantities of pollutants of concern to the facility and an evaluation of how the quality of the stormwater running onto the facility impacts the stormwater discharges may be included. Provide a topographic map extending one-quarter of a mile beyond the property boundaries of the facility;

d. An estimate of the overall runoff coefficient for the site, determined by an acceptable method, such as, but not limited to, area weighting;

e. Receiving Waters and Wetlands: The name of the nearest receiving water(s) with waterbody identification number (if one is assigned), including intermittent streams, the areal extent and description of wetland that may receive discharges from the facility, impairments and a list of

pollutants causing impairments if applicable.

f. Summary of Potential Pollutant Sources: Identify each area of the facility that generates stormwater discharges with a description of the industrial activities and materials in each area, a prediction of the direction of flow, and an estimate of the types of pollutants which are likely to be present in stormwater. List significant spills and leaks, including releases of oil or hazardous substances in excess of quantities that are reportable under CWA §311 (see 40 CFR 110.10 and 40 CFR 117.21) or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Significant spills may also include releases of oil and hazardous materials that are not in excess of reporting requirements.

   Industrial materials or activities include, but are not limited to, material handling equipment or activities; industrial machinery; storage, cleaning, fueling and maintenance of vehicles and equipment storage; and raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, or waste product.

g. A narrative description of significant materials that have been treated, stored, or disposed of in a manner to allow exposure to stormwater in the past five (5) years; method of on-site storage or disposal; materials management practices employed to minimize contact of these materials with stormwater runoff in the past five (5) years; materials loading and access areas; the location and description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff; and description of any treatment the stormwater receives;

h. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at the facility in the past five (5) years; The permitee must clearly identify areas where potential spills and leaks, which can contribute pollutants to the stormwater discharges, can occur, and their accompanying drainage points.

i. A list of any pollutants limited in effluent guidelines to which a facility is subject under 40 CFR Subchapter N, any pollutants listed on a RIPDES permit to discharge process water, and any information required under the RIPDES Regulations (RI Code of Regulations: 250-RICR-150-10-1.11.D).

j. A summary of existing sampling data describing pollutants in stormwater discharges from the facility;

k. A summary of the mitigating factors for pollutants with a TMDL.

I.B.6 Stormwater Management Controls. The SWPPP must include a description of stormwater management controls appropriate for the facility and implement such controls. The appropriateness for implementing controls listed in the SWPPP must reflect identified potential sources of pollutants at the facility. The description of stormwater management controls must address the following minimum components, including a schedule for implementing such controls:

a. *Pollution Prevention Team.* The SWPPP must identify a specific individual(s) within the facility organization as members of a team that are responsible for developing the SWPPP and assisting in its implementation, maintenance, and revision. The SWPPP must clearly identify the responsibilities of each team member. The activities and responsibilities of the team must address all aspects of facility's SWPPP.

b. *Risk Identification and Assessment/Material Inventory.* The SWPPP must assess the potential of various sources that contribute pollutants to stormwater. The SWPPP must also include an inventory of the types of materials handled. Each of the following must be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations,

outdoor manufacturing or processing activities, significant dust or particulate generating processes, and on-site waste disposal practices. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater, and the history of significant leaks or spills of toxic or hazardous pollutants.

c. *Preventative Maintenance.* A preventative maintenance program must involve inspection and maintenance of stormwater management devices (i.e., oil/water separators, catch basins) as well as inspecting and testing equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters. The SWPPP must include a preventative maintenance schedule for all components of the collection system. This schedule must include all of the minimum requirements from Part I.C of this permit.

d. *Minimizing Exposure.* Where practicable, industrial materials and activities should be protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff.

e. *Good Housekeeping.* Good housekeeping requires the maintenance of a clean, orderly facility. The SWPPP must include a schedule for parking lot sweeping that addresses both floatables control and TSS removal. This schedule must comply with the minimum requirements of Part I.C.

(1) Keep all exposed areas free of solid waste, garbage, and floatable debris. Solid waste, garbage and floatable debris must be stored and disposed of in such way that prevents exposure;

(2) Use all known, available and reasonable methods to prevent rodents, birds, and other animals from feeding/nesting/roosting at the facility;

(3) Install structural source control BMPs to address on-site activities and sources that could cause bacterial/pathogen contamination (e.g., dumpsters, compost piles, food waste and animal products).

f. *Spill Prevention and Response Procedure.* Areas where potential spills can occur, and their accompanying drainage points, must be identified clearly in the SWPPP. The potential for spills to enter the stormwater drainage system must be eliminated wherever feasible. Where appropriate, specific material handling procedures, storage requirements, and procedures for cleaning up spills must be identified in the SWPPP and be made available to the appropriate personnel. The necessary equipment to implement a clean-up must also be made available to personnel. The permittee shall immediately notify the Department of Environmental Management of any chemical releases in excess of reportable quantities.

g. *Stormwater Management.* The SWPPP must contain a narrative consideration of the appropriateness of traditional stormwater management practices. Based on an assessment of the potential of various sources to contribute pollutants to stormwater discharges (see Part I.B.5.a of this permit), the SWPPP must also provide those measures, determined to be reasonable and appropriate, must be implemented and maintained.

h. *Sediment Transport.* The SWPPP must identify the sanding/salting procedures and/or practices that will be used to minimize the discharge of pollutants from sanding/salting practices. Items to include are; sand/salt storage, application methods, application rates, and clean-up procedures.

i. *Sediment and Erosion Prevention.* The SWPPP must identify areas which; due to topography, activities, or other factors; have a high potential for significant soil erosion and identify measures to limit erosion.

j. *Employee Training.* Employee training programs must inform personnel responsible for

implementing activities identified in the SWPPP, or otherwise responsible for stormwater management at all levels, of the components and goals of the SWPPP. Training should address topics such as spill response, good housekeeping, and material management practices. The SWPPP must identify and record periodic dates for such training.

k. *Visual Inspections.* Qualified plant personnel must be identified to inspect designated equipment and site areas. Material handling areas must be inspected for evidence of, or the potential for, pollutants entering the drainage system. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records of inspections must be maintained on site for at least five (5) years.

l. *Record keeping and Internal Reporting Procedures.* Incidents such as spills, or other discharges, along with other information describing the quality and quantity of stormwater discharges must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

m. *Other Controls.* Offsite tracking of raw, final, or waste materials or sediments, and the generation of dust must be minimized. Tracking or blowing or raw, final, or waste materials from areas of no exposure to exposed areas must be minimized. Velocity dissipation devices must be placed at discharge locations and along the length of any outfall channel if they are necessary to provide a non-erosive flow velocity from the structure to a watercourse.

I.B.7 Industry Specific Stormwater Control Measures

a. *Drainage Area Site Map.* Document in the SWPPP the following may be exposed to precipitation or surface runoff: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred, locations of any known leachate springs or other areas where uncontrolled leachate may comingle with runoff, and leachate collection handling systems.

b. *Summary of Potential Pollutant Sources.* Document in the SWPPP the following sources and activities that have potential pollutants associated with them: fertilizer, herbicide, and pesticide application; earth and soil moving; waste hauling and loading or unloading; outdoor storage of significant materials, including daily, interim, and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; and failure or leaks from leachate collection and treatment systems.

I.B.8 Post-Construction Stormwater Management in New Development and Redevelopment. The permittee shall develop and implement a conceptual redevelopment plan that contains standards and criteria to address stormwater runoff from new development and redevelopment projects, as defined by the DEM Stormwater Management, Design, and Installation Rules (250-RICR-150-10-8). The plan must address direct discharges of stormwater to waters of the State in addition to the discharges to the storm drainage system. All new and redevelopment projects are required to meet the eleven minimum standards and comply with the specific performance criteria of the DEM Stormwater Management, Design, and Installation Rules (250-RICR-150-10-8). The post-construction program must include:

a. Development and implementation of preferred strategies, which are to be incorporated into new projects. These strategies shall include a combination of Low Impact Development (LID) and, structural methods such as infiltration practices, sand filters, bioretention practices, vegetated swales and/or vegetated filter strips.

b. Requirements that all controls to address post-construction runoff are consistent with the March 2015 State of Rhode Island Stormwater Design and Installation Manual (as amended).

c. Development of an Operation and Maintenance Plan to ensure the stormwater conveyance

systems and management practices continue to function as designed.

d. Strategies to provide groundwater recharge, water quality treatment, and where appropriate, preserving, enhancing, or establishing buffers along surface waterbodies and tributaries.

e. Strategies to reduce runoff volume which may include minimizing impervious areas such as roads, parking, paving or other surfaces; encouraging infiltration of non-contaminated runoff; preventing channelization; encouraging sheet flow; and where appropriate, preserving, enhancing or establishing buffers along surface waterbodies and tributaries.

I.B.9 Allowable Non-Storm Water Discharges: Certain sources of non-storm water are allowable under this permit (see Part I.A.7). In order for these discharges to be allowed, the SWPPP must include:

a. identification of each allowable non-storm water source;

b. the location where it is likely to be discharged; and

c. descriptions of appropriate BMPs for each source.

d. Except for flows from firefighting activities, the permittee must identify in the SWPPP all sources of allowable non-storm water that are discharged under the authority of this permit.

e. If the permittee includes mist blown from cooling towers amongst the allowable non-storm water discharges, the permittee must specifically evaluate the potential for the discharges to be contaminated by chemicals used in the cooling tower and determine that the levels of such chemicals in the discharges would not cause or contribute to a violation of an applicable water quality standard after implementation of the BMPs the permittee has selected to control such discharges.

I.B.10 Site Inspection. An annual site inspection must be conducted by appropriate personnel named in the SWPPP to verify that the description of potential pollutant sources required under Part I.B.5.a is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in stormwater discharges identified in the SWPPP are being implemented and are adequate. The inspections must include an evaluation of existing stormwater BMPs. A tracking or follow-up procedure must be used to ensure that the appropriate action has been taken in response to the inspections. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for a minimum of five (5) years from the date of inspection.

I.B.11 Consistency with Other Plans. Stormwater management controls may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the CWA or Best Management Practices (BMP) Programs otherwise required by a RIPDES permit and may incorporate any part of such plans into the SWPPP by reference.

I.C. INSPECTION AND MAINTENANCE

I.C.1 Inspections of the BMPs are to be conducted in a manner consistent with the permittee's SWPPP as amended and approved by DEM. This includes inspection and maintenance of the following major Stormwater infrastructure and best management practices. The SWPPP must also identify any applicable maintenance schedule and the procedures. If site inspections required by Part I.B and Part I.C identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished within fourteen (14) calendar

days. Results of all inspections must be documented, and records retained on-site for a period of five (5) years.

I.C.2 At a minimum, the following activities must be conducted at the specified frequency:

- **a.** Perform monthly inspections of any erodible surfaces for evidence of erosion and, if present, reseed and ensure that seed and mulch remain in place and are not washed from the soil surface until the area has been stabilized.
- **b.** Perform monthly inspection of outfalls for evidence of a failure in the stormwater controls to remove sediment, floatables, color, odor, foam, and/or oil from the discharge.
- **c.** Perform monthly inspections of any hazardous waste storage areas for evidence of leaks. All leaks must be repaired, and the spilled material cleaned out immediately.
- **d.** Perform monthly inspections of the facility for evidence of any spills of oil and/or gasoline. Any spills must be cleaned up immediately and notification shall be provided in accordance with the SPCC Plan.
- **e.** Perform monthly inspections of the facility to ensure that the good housekeeping measures identified in the SWPPP are being followed.
- **f.** Inspect and monitor sediment accumulation in all catch basins and solids removal systems a minimum of monthly.
- **g.** Remove sediment accumulation from all catch basins and solids removal systems when the sediment volume reaches the manufacturer's recommended "clean out" level and/or if there is a failure in the solids removal system. At a minimum, sediment must be removed from all catch basins and solids removal systems quarterly.
- **h.** Perform monthly inspections of solid waste storage areas for evidence of leaks and/or spills. All leaks and spills must be repaired, and the spilled material cleaned out immediately.
- **i.** The permittee is required to sweep all streets, roads, and parking areas within its regulated area a minimum of monthly. If it is determined that monthly sweeping is not adequate to control the amount of sediment and/or floatables being discharged from the facility, the permittee shall increase the frequency of sweeping. Any changes to the sweeping program and all documentation and supporting rationale should be reported to the DEM as Part of the annual report required under Part I.D of this permit. Any requests to decrease the sweeping frequency must be approved by DEM in writing.
- **j.** Sediment removal and erosion control maintenance must be performed in a manner consistent with the SWPPP. Any sediment removal and/or maintenance performed must be documented and records retained on-site for a period of five (5) years.

I.C.3 Visual Assessment Procedures: Twice within the January 1-June 30 monitoring period and twice within the July 1-December 31 monitoring period for the entire permit term, (except as noted in Part I.F.), a stormwater sample from each outfall must be collected and a visual assessment of each of these samples must be conducted. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but should be collected in such a manner that the samples are representative of the stormwater discharge.

- **a.** The visual assessment must be made:

  - **(1)** Of a sample in a clean, clear glass, or plastic container, and examined in a well-lit area;

  - **(2)** On samples collected within the first 60 minutes of an actual discharge from a storm event. In the case of snowmelt, samples must be taken during a period with a measurable discharge from the site; and

  - **(3)** For storm events, on discharges that occur at least 48 hours (2 days) from the previous discharge. The 48-hour (2-day) storm interval does not apply if it is documented that less than a 48-hour (2-day) interval is representative for local storm events during the sampling period.

b. The sample must be visually inspected for the following water quality characteristics:

(1) Color;
(2) Odor;
(3) Clarity;
(4) Floating solids;
(5) Settled solids;
(6) Suspended solids;
(7) Foam;
(8) Oil sheen; and
(9) Other obvious indicators of stormwater pollution.

Whenever the visual assessment shows evidence of pollution, the permittee must amend the SWPPP to prevent such pollution as described in Part I.B.4 of this permit.

I.D. ANNUAL REPORT

I.D.1 In accordance with Part I.B.10, an annual report must be submitted to DEM by January 31st of each year for the previous year's results (with the first report being due January 31st, 20XX for the year 20XX). The annual report must include:

a. The results and relevant documentation of inspections required under Part I.B.;

b. A description of corrective action(s) taken to address issues related to the discharges covered under this permit including any results of those actions;

c. Descriptions and dates of any incidences of significant spills, leaks, or other releases that resulted in discharges of pollutants to waters of the State, through stormwater, wastewater, or otherwise; the circumstances leading to the release, and actions taken in response to the release; and measures taken to prevent the recurrence of such releases;

d. Description of any deviations from the schedule for inspections and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event (See Part I.A)

e. Documentation to support the claim that the facility has changed its status from active to inactive and unstaffed with respect to the requirements to conduct routine facility inspections.

f. The Annual Report shall be submitted to the RIPDES Program according to the requirements listed in Part I.H.4.

I.E. BENCHMARK MONITORING

I.E.1 The permittee shall compare TSS and Total Phosphorous sampling results for outfalls 001, 002, 004, 005, and 006 to the following benchmark monitoring concentrations. The following benchmark concentrations are only to be used to evaluate the overall effectiveness of the SWPP and are not to be used as effluent limits. Benchmark monitoring concentrations may be subject to change by permit modification to be consistent with future revisions to EPA and / or State benchmarks:

Parameter	Benchmark Concentration (mg/L)
TSS	100
Total Phosphorus	0.015[1]

[1]The minimum detection limit for this parameter is greater than the benchmark value, therefore sampling results at

which an exceedance determination will be based is the Minimum Detection Limit found in Part I.G. These values may be reduced by permit modification as more sensitive test methods are approved by the EPA and the State.

I.E.2 On a yearly basis, the permittee shall calculate the annual average of all sampling data for each pollutant for the previous calendar year (January 1 – December 31). When calculating the annual average concentrations, pollutant concentrations that were reported as less than the minimum detection limit from Part I.G shall be replaced with zeros. If the annual average exceeds the applicable benchmark concentration and the permittee determines that the exceedance of the benchmark is not attributable solely to the presence of that pollutant in natural background, then the permittee must complete Corrective Actions as detailed in Appendix 1. The first year of a benchmark exceedance will result in Level One Corrective Actions with subsequent years of benchmark exceedances resulting in Level Two Corrective Actions and then Level Three Corrective Actions. Corrective Actions must be summarized and submitted to DEM with the Annual Report required under Part I.D. with any amendments to the SWPPP. If the amendments will include changes to structural controls, the report must include a schedule for the implementation of the proposed structural modifications. Proposed changes to structural stormwater controls must be approved by the DEM prior to implementation. Upon DEM approval of the structural changes, the permittee shall implement them in accordance with the approved schedule.

I.F. SAMPLING WAIVER

If the permittee is unable to collect samples, due to adverse climactic conditions, which create dangerous conditions for personnel or otherwise makes the collection of a sample impractical, the permittee may submit in lieu of sampling data a description of why samples could not be collected. The Permittee is prohibited from exercising this waiver more than once during a two (2) year period. A waiver is not required when there is no discharge, due to a lack of sufficient precipitation, during a given monitoring period.

I.G. DETECTION LIMITS

All analyses of parameters under this permit must comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* Rule. Only sufficiently sensitive test methods may be used for analyses of parameters under this permit. The permittee shall assure that all testing required by this permit is performed in conformance with the methods listed in 40 CFR Part 136. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures, and quality control procedures shall be followed for all reports required to be submitted under the Rhode Island Pollutant Discharge Elimination System (RIPDES) program. These procedures are described in “Methods for the Determination of Metals in Environmental Samples” (EPA/600/4-91/010) and “Methods for Chemical Analysis of Water and Wastes” (EPA/600/4-79/020).

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be maintained onsite. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;

2. results reported as less than the MDL shall be reported as zero in accordance with the DEM’s DMR Instructions, provided that all appropriate EPA approved methods were followed.

Therefore, all sample results shall be reported as: an actual value, “could not be analyzed”, or zero. The

effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) listed below represent the required Rhode Island DEM MDLs for sampling and reporting purposes.

Volatiles - EPA Method 624.1		**MDL µg/L (ppb)**
1V	acrolein	10.0
2V	acrylonitrile	5.0
3V	benzene	1.0
5V	bromoform	1.0
6V	carbon tetrachloride	1.0
7V	chlorobenzene	1.0
8V	chlorodibromomethane	1.0
9V	chloroethane	1.0
10V	2-chloroethylvinyl ether	5.0
11V	chloroform	1.0
12V	dichlorobromomethane	1.0
14V	1,1-dichloroethane	1.0
15V	1,2-dichloroethane	1.0
16V	1,1-dichloroethylene	1.0
17V	1,2-dichloropropane	1.0
18V	1,3-dichloropropylene	1.0
19V	ethylbenzene	1.0
20V	methyl bromide	1.0
21V	methyl chloride	1.0
22V	methylene chloride	1.0
23V	1,1,2,2-tetrachloroethane	1.0
24V	tetrachloroethylene	1.0
25V	toluene	1.0
26V	1,2-trans-dichloroethylene	1.0
27V	1,1,1-trichloroethane	1.0
28V	1,1,2-trichloroethane	1.0
29V	trichloroethylene	1.0
31V	vinyl chloride	1.0

Acid Compounds - EPA Method 625.1		**MDL µg/L (ppb)**
1A	2-chlorophenol	1.0
2A	2,4-dichlorophenol	1.0
3A	2,4-dimethylphenol	1.0
4A	4,6-dinitro-o-cresol	1.0
5A	2,4-dinitrophenol	2.0
6A	2-nitrophenol	1.0
7A	4-nitrophenol	1.0
8A	p-chloro-m-cresol	2.0
9A	pentachlorophenol	1.0
10A	phenol	1.0
11A	2,4,6-trichlorophenol	1.0

Pesticides - EPA Method 608.3		**MDL µg/L (ppb)**
1P	aldrin	0.059
2P	alpha-BHC	0.058
3P	beta-BHC	0.043
4P	gamma-BHC	0.048
5P	delta-BHC	0.034
6P	chlordane	0.211
7P	4,4'-DDT	0.251
8P	4,4'-DDE	0.049
9P	4,4'-DDD	0.139
10P	dieldrin	0.082
11P	alpha-endosulfan	0.031
12P	beta-endosulfan	0.036
13P	endosulfan sulfate	0.109
14P	endrin	0.050
15P	endrin aldehyde	0.062
16P	heptachlor	0.0029
17P	heptachlor epoxide	0.040

Pesticides - EPA Method 608.3		**MDL µg/L (ppb)**
18P	PCB-1242	0.289
19P	PCB-1254	0.289
20P	PCB-1221	0.723
21P	PCB-1232	0.387
22P	PCB-1248	0.283
23P	PCB-1260	0.222
24P	PCB-1016	0.494
25P	toxaphene	1.670

Base/Neutral - EPA Method 625.1		**MDL µg/L (ppb)**
1B	acenaphthene *	1.0
2B	acenaphthylene *	1.0
3B	anthracene *	1.0
4B	benzidine	4.0
5B	benzo(a)anthracene *	2.0
6B	benzo(a)pyrene *	2.0
7B	3,4-benzofluoranthene *	1.0
8B	benzo(ghi)perylene *	2.0
9B	benzo(k)fluoranthene *	2.0
10B	bis(2-chloroethoxy)methane	2.0
11B	bis(2-chloroethyl)ether	1.0
12B	bis(2-chloroisopropyl)ether	1.0
13B	bis(2-ethylhexyl)phthalate	1.0
14B	4-bromophenyl phenyl ether	1.0
15B	butylbenzyl phthalate	1.0
16B	2-chloronaphthalene	1.0
17B	4-chlorophenyl phenyl ether	1.0
18B	chrysene *	1.0
19B	dibenzo (a,h)anthracene *	2.0
20B	1,2-dichlorobenzene	1.0
21B	1,3-dichlorobenzene	1.0
22B	1,4-dichlorobenzene	1.0
23B	3,3'-dichlorobenzidine	2.0
24B	diethyl phthalate	1.0
25B	dimethyl phthalate	1.0
26B	di-n-butyl phthalate	1.0
27B	2,4-dinitrotoluene	2.0
28B	2,6-dinitrotoluene	2.0
29B	di-n-octyl phthalate	1.0
30B	1,2-diphenylhydrazine (as azobenzene)	1.0
31B	fluoranthene *	1.0
32B	fluorene *	1.0
33B	hexachlorobenzene	1.0
34B	hexachlorobutadiene	1.0
35B	hexachlorocyclopentadiene	2.0
36B	hexachloroethane	1.0
37B	indeno(1,2,3-cd)pyrene *	2.0
38B	isophorone	1.0
39B	naphthalene *	1.0
40B	nitrobenzene	1.0
41B	N-nitrosodimethylamine	1.0
42B	N-nitrosodi-n-propylamine	1.0
43B	N-nitrosodiphenylamine	1.0
44B	phenanthrene *	1.0
45B	pyrene *	1.0
46B	1,2,4-trichlorobenzene	1.0

OTHER TOXIC POLLUTANTS
MDL µg/L (ppb)

Antimony, Total	3.0
Arsenic, Total	1.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, Total	1.0
Chromium, Hexavalent	0.4
Copper, Total	1.0
Lead, Total	1.0
Mercury, Total	0.2
Nickel, Total	1.0
Selenium, Total	2.0
Silver, Total	0.5
Thallium, Total	1.0
Zinc, Total	2.0
Asbestos	**
Cyanide, Total	5.0
Cyanide, Available	0.5
Phenols, Total***	50.0
Aluminum, Total	5.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0
Phosphorus, Total	20.0

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL

NOTE:
The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

I.H. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to the DEM within the time specified within the permit. Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

I.H.1 Submittal of DMRs Using NetDMR

a. The permittee shall submit its time period monitoring data in discharge monitoring reports (DMRs) to DEM electronically using NetDMR per the following schedule:

Time Period Testing to be Performed	Report Due No Later Than	Results Submitted on DMR for
January 1 – June 30	July 15	January 1 – June 30
July 1 – December 31	January 15	July 1 – December 31

b. When the permittee submits DMRs using NetDMR, the permitee is not required to submit hard copies of DMRs to DEM.

I.H.2 Submittal of Reports as NetDMR Attachments

a. Unless otherwise specified in this permit, the permittee must submit electronic copies of

documents in NetDMR that are directly related to the DMR. These include the following:
(1) DMR Cover Letters
(2) Below Detection Limit summary tables
(3) Benchmark Comparison

I.H.3 Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to DEM.
(1) Transfer of Permit Notice
(2) Annual Report per Part 1.D (January 15 each year)
(3) Written notifications required under Part II (as needed)
(4) Notice of unauthorized discharges (as needed)
(5) SWPPP per Part 1.B (90 days after the effective date of this permit and as needed according to Part 1.C.1, Part I.B.4, and Appendix 1)
(6) Priority Pollutant Scan Results per Part I.A.9 (Fourth Year of Permit)
(7) Request to discontinue monitoring (as needed)

This information shall be submitted to DEM at the following address:

Rhode Island Department of Environmental Management
RIPDES Program
253 Promenade Street
Providence, Rhode Island 02908

I.H.4 Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to the DEM. This includes verbal reports and notifications which require reporting within 24 hours. (See Part II.(I)(5) General Requirements for 24-hour reporting) Verbal reports and verbal notifications shall be made to DEM at (401) 222-4700 or (401) 222-3070 at night.

PART II
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GENERAL REQUIREMENTS

(a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment of not more than 1 year, or both.

(3) Chapter 46-12-13 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than $25,000 per day of such violation. Chapter 46-12-14(a) of the Rhode Island General Laws provides that any person who willfully or with criminal negligence violates a permit condition is subject to a criminal penalty of not more than $25,000 per day of such violation or imprisonment for not more than five (5) years, or both. Chapter 46-12-14(b) of the Rhode Island General Laws provides that any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than $5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

(b) Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

(c) Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. Page 3 of 10

(e) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility

Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(g) Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

(4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.

(j) Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.

(3) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;
(iii) The date(s) analyses were performed;
(iv) The individual(s) who performed the analyses;
(v) The analytical techniques or methods used; and
(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.

(5) The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall upon conviction, be punished by a fine of not more than $10,000 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12-14(b) of the Rhode Island General Laws also provides that such acts are subject to a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with 250-RICR-150-10-1.12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12-14(b) provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report (including monitoring reports or reports of compliance or noncompliance), plan, or other document filed or required to be maintained under this permit, shall, upon conviction, be punished by a fine of not more than $5,000 for each instance of violation, or by imprisonment for not more than 30 days per violation, or by both.

(l) Reporting Requirements

(1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the permit requirements.

(3) Transfers. This permit is not transferable to any person except after written notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under State and Federal law.

(4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) Twenty-four hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-4700 or (401) 222-3070 at night.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following information must be reported immediately:

(i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or

(ii) Any upset which causes a violation of any effluent limitation in the permit; or

(iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (l)(5) of the section.

(7) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.

(m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(1) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (2) and (3) of this section.

(2) Notice.

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in 250-RICR-150-10-1.14(R) of the RIPDES Regulations.

(3) Prohibition of bypass.

(i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, where "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or

maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(C) The permittee submitted notices as required under paragraph (2) of this section.

(ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (3)(i) of this section.

(n) Upset

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(1) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (2) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(2) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(a) An upset occurred and that the permittee can identify the cause(s) of the upset;

(b) The permitted facility was at the time being properly operated;

(c) The permittee submitted notice of the upset as required in 250-RICR-150-10-1.14(R) of the RIPDES Regulations; and

(d) The permittee complied with any remedial measures required under 250-RICR-150-10-1.14(E) of the RIPDES Regulations.

(3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal

and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

(q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

> In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

> Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 235 Promenade Street, Providence, Rhode Island 02908. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

(s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

(t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

(u) Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

(v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with 250-RICR-150-10-1.16 and 250-RICR-150-10-1.24 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

(w) Confidentiality of Information

(1) Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, DEM may make the information available to the pubic without further notice.

(2) Claims of confidentiality for the following information will be denied:
- (i) The name and address of any permit applicant or permittee;
- (ii) Permit applications, permits and any attachments thereto; and
- (iii) NPDES effluent data.

(x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

(y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of 250-RICR-150-10-1.50 of the RIPDES Regulations.

DEFINITIONS

1. For purposes of this permit, those definitions contained in the RIPDES Regulations, and the Rhode Island Pretreatment Regulations shall apply.

2. The following abbreviations, when used, are defined below.

cu. M/day or M^3/day	cubic meters per day
mg/l	milligrams per liter
µg/l	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. °C	temperature in degrees Centigrade
Temp. °F	temperature in degrees Fahrenheit
Turb.	turbidity measured by the Nephelometric Method (NTU)
TNFR or TSS	total nonfilterable residue or total suspended solids
DO	dissolved oxygen
BOD	five-day biochemical oxygen demand unless otherwise specified
TKN	total Kjeldahl nitrogen as nitrogen
Total N	total nitrogen
NH_3-N	ammonia nitrogen as nitrogen
Total P	total phosphorus
COD	chemical oxygen demand
TOC	total organic carbon
Surfactant	surface-active agent
pH	a measure of the hydrogen ion concentration
PCB	polychlorinated biphenyl
CFS	cubic feet per second
MGD	million gallons per day
Oil & Grease	Freon extractable material
Total Coliform	total coliform bacteria
Fecal Coliform	total fecal coliform bacteria
ml/l	milliliter(s) per liter
NO_3-N	nitrate nitrogen as nitrogen
NO_2-N	nitrite nitrogen as nitrogen
NO_3-NO_2	combined nitrate and nitrite nitrogen as nitrogen
$C1_2$	total residual chlorine

APPENDIX 1: CORRECTIVE ACTIONS

1. Corrective Actions Based on Exceedance of Benchmark(s)

a. Level One Corrective Actions - Operational Source Control BMPs. Following the completion of the first full calendar year of monitoring (January through December) with the average of the required benchmark monitoring results exceeding an applicable benchmark value, and the permittee determines that exceedance of the benchmark is not attributable solely to the presence of that pollutant in the natural background, the permittee must complete Level One Corrective Actions.

(1) For each parameter exceeded, the facility must complete the following corrective actions within fourteen (14) calendar days of receipt of the monitoring results. If it is infeasible to complete the corrective action within 14 calendar days, the permittee must document why it is infeasible to complete the corrective action within the 14-day timeframe. The permittee must also identify the schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 30 calendar days after discovery:

a) Review the SWPPP and ensure that it fully complies with Part I.B of this permit.

b) Conduct an inspection to investigate the cause of the exceedance and to evaluate industrial pollutant sources at the facility that are or may be related to the benchmark exceedance(s).

c) Make appropriate revisions to the SWPPP and implement additional Operational Source Control BMPs with the goal of achieving the applicable benchmark value(s) in future discharges.

(2) Summarize the Level One Corrective Actions in the Annual Comprehensive Site Evaluation Report. Include a detailed description of the SWPPP revisions, any alterations or modifications to the existing BMPs, and any additional BMPs **for each benchmark exceedance.**

(3) Examples of Operational Source Control BMPs include, but are not limited to, increasing sweeping, conducting employee training, increasing inspection frequency, modifying the storage location of the pollutant source away from drainage path to the storm water drain network, limiting the amount of time potential pollutant sources are stored to prevent degradation and leachate, etc.

b. Level Two Corrective Actions – Structural Source Control BMPs. Following the completion of the second year of monitoring with the average of the required 4 benchmark(s) monitoring results exceeding an applicable benchmark, the permittee must complete Level 2 Corrective Actions for each parameter exceeded in accordance with the following:

(1) Review the SWPPP and ensure that it fully complies with Part I.B of this permit.

(2) Make appropriate revisions to the SWPPP to include additional Structural Source Control BMPs with the goal of achieving the applicable benchmark value(s) in future discharges.

(3) Fully implement the SWPPP and Structural Source Control BMPs as soon as possible but no later than six months following the second benchmark monitoring year.

a) If installation of Structural Source Control BMPs within six months is not feasible, the permittee may request an extension for the construction of the Structural Source Control BMPs.

b) If the permittee determines that installation of Structural Source Control BMPs is not necessary to prevent future benchmark exceedance(s), the permittee may request a waiver from this requirement by submitting to the Director a detailed explanation and technical basis for the request, no later than 30 days following the end of the second monitoring year that exceeds benchmarks. The waiver is subject to DEM's approval.

(4) For benchmark monitoring conducted prior to the full implementation and construction of Structural Source Control BMPs associated with Level 2 corrective actions, benchmark exceedances (for the same parameter) do not count towards additional Level 2 Corrective Actions.

(5) Summarize the Level 2 Corrective Actions in the Annual Comprehensive Site Evaluation Report. Include a detailed description of the SWPPP revisions, any alterations or modifications to the existing BMPs, and any additional BMPs for each benchmark exceedance.

(6) Examples of Structural Source Control BMPs include, but are not limited to, modifying processes, storage, or handling of the pollutant, using recirculating wash systems, using roofs, canopies, and shed to cover piles, paving spill areas to facilitate cleaning, elevating storage areas, diverting runoff, building secondary containment, etc.

c. Level Three Corrective Actions – Treatment BMPs. If the average of the 4 benchmark(s) monitoring results, conducted after level 2 corrective actions have been fully implemented and completed, exceeds an applicable benchmark, the permittee must complete Level Three Corrective Actions for each parameter exceeded in accordance with the following:

(1) Review the SWPPP and ensure that it fully complies with Part I.B of this permit.

(2) Make appropriate revisions to the SWPPP to include modifications/alterations to the existing treatment BMPs and/or installation of additional Treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges. Fully implement the SWPPP and modifications/enhancements of existing BMPs and/or construction of additional Treatment BMPs as necessary, as soon as possible but no later than six months following the Level 3 benchmark monitoring year, unless:

a) Installation of Treatment BMPs within six months is not feasible, in which case the permittee may request an extension for the construction of the Treatment BMPs.

b) The permittee determines that modifications and/or alterations of existing Treatment BMPs or installation of Treatment BMPs are not feasible or necessary to prevent future benchmark exceedance(s), in which case the permittee may request a waiver from this requirement by submitting to the Director a detailed explanation and technical basis for the request, no later than 30 days following the end of the Level 3 benchmark monitoring year.

c) The waiver is subject to DEM's approval. If the waiver is approved, the permittee will not be required to submit a Level Three Corrective Action Report.

(3) Summarize the Level Three Corrective Actions in the Annual Report (Part 1.D). Include information on how monitoring, assessment or evaluation information was (or will be) used to determine whether existing Treatment BMPs will be modified/enhanced, or if new/additional Treatment BMPs will be installed.

(4) Examples of Treatment BMPs include, but are not limited to, constructing vegetative buffer strips to capture sediment particles, constructing wet vegetative treatment systems (i.e., bioretention with underdrain), installing of filtering media, etc.

2. Corrective Actions Requiring SWPPP Review

a. The permittee must review and revise the SWPPP to ensure benchmarks are met, when any of the following conditions occur or are detected during an inspection, monitoring or other means, or the Department, EPA or the operator of the MS4 through which the permittee discharges informs the permittee that any of the following conditions have occurred, the permittee must review and revise, as appropriate, the SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of your control measures) so that this permit's effluent limits are met and pollutant discharges are minimized:

(1) The permittee becomes aware, or the Director determines, that the control measures are not stringent enough for the discharge to meet applicable water quality standards or the non-numeric effluent limits in this permit;

(2) A required control measure was never installed, was installed incorrectly, or not in accordance with Part I.B.6., or is not being properly operated or maintained;

(3) Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam); or

(4) Whenever Indicator Parameter monitoring shows evidence of ineffective control of stormwater pollution.

b. The permittee must review the SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation, and implementation of the control measures) to determine if modifications are necessary to meet the effluent limits in this permit. If construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged, the SWPPP must be revised.

c. Deadlines

(1) Immediate Actions. The permittee must document the discovery of any of the conditions listed in Parts 2.a. and 2.b. within 24 hours of making such discovery. If corrective action is needed, the permittee must immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term "immediately" requires you to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action, the initiation of corrective action must begin no later than the following work day.

(2) Subsequent Actions. If the permittee determines that additional actions are necessary beyond those implemented pursuant to Part 2.c.(1) of this appendix, the permittee must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the corrective action condition. If it is infeasible to complete the corrective action within 14 calendar days, the permittee must document why it is infeasible to complete the corrective action within the 14-day timeframe. The permittee must also identify the schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe

but no longer than 45 days after discovery.

Where the corrective actions result in changes to any of the controls or procedures documented in the SWPPP, the permittee must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

These time intervals are not grace periods, but are schedules considered reasonable for documenting the findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

d. The permittee must document the existence of any of the conditions listed in Parts 2.a. and 2.b. of this appendix within 24 hours of becoming aware of such condition. Include the following information in your documentation:

- Description of the condition triggering the need for corrective action review. For any spills or leaks, the following information must be included: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of the State;

- Date the problem was identified; and

- Description of immediate actions taken pursuant to Part 2.c.(1). of this permit to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases (see Part I.B.6.f)

Within 14 days of discovery of any condition listed in Part 2 of this Appendix., the permittee must document the following information:

- The corrective actions taken or to be taken as a result of the conditions listed in Part 2.a. or 2.b of this appendix. (or, for triggering events in Part 2.b. where you determine that corrective action is not necessary, the basis for this determination);

- Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

- Date when corrective action was initiated; and

- Date corrective action was completed (or is expected to be completed). If applicable, document why it is infeasible to complete the necessary installations or repairs within the 14-day timeframe and document your schedule for installing the controls and making them operational as soon as practicable after the 14- day timeframe but not longer than 45 days after discovery.

The permittee must submit this documentation in an annual report as required in Part I.D. and retain a copy onsite with the SWPPP as required in Part I.B.2.

3. Substantially Identical Outfalls

If the event triggering corrective action is linked to an outfall that represents other substantially identical outfalls, the permittee's review must assess the need for corrective action for each outfall represented by the outfall that triggered the review or corrective action. Any necessary changes to control measures that affect these other outfalls must also be made before the next storm event if possible, or as soon

as practicable following that storm event.

4. Compliance with Other Ordinances, Laws and Permits

The requirement to implement Corrective Actions does not remove the permittee's obligation to obtain any local, state, or federal approvals or permits required by ordinance or law and does not relieve the permittee from any duties owed to adjacent landowners with specific reference to any changes in drainage.

Appendix 2
PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentansulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2H,2H,3H,3H-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

STATEMENT OF BASIS

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. RI0023973

NAME AND ADDRESS OF APPLICANT:
Town of Tiverton
343 Highland Road

Tiverton, RI 02878

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:
Tiverton Landfill #2
3524 Main Road
Tiverton, RI 02878

RECEIVING WATERS AND WBIDS: Quaker Creek [RI0010031R-04]
Borden Brook & Tributaries [RI0010031R-01]

CLASSIFICATIONs: Quaker Creek – AA
Borden Brook – AA

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I. Proposed Action, Type of Facility, and Discharge Location

The above-named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for the issuance of a RIPDES Permit for the discharge of stormwater runoff from the facility, Tiverton Landfill #2, into the designated receiving waters. The discharge consists of stormwater from the facility associated with the capped landfill, which enters the stormwater treatment systems, and is ultimately discharged from multiple outfalls to the Quaker Creek and Borden Brook.

I. Description of Discharge

This facility discharges stormwater runoff from a capped inactive landfill. The landfill is almost completely capped with impervious material, excepting a nearly vertical portion on the west/southwest edge as seen in the site plan in Attachment A.

II. Permit Benchmarks and Conditions

The final effluent limitations, benchmark values, monitoring requirements, and any implementation schedules may be found in the permit and the following appendices.

III. Permit Basis and Explanation of Effluent Benchmark Derivation

Facility Description

The Town of Tiverton owns and operates the Tiverton Landfill #2 located at 3524 Main Road in Tiverton Rhode Island. The facility discharges stormwater runoff from the capped inactive landfill to Quaker Creek and Borden Brook. As per the *Total Maximum Daily Loads (TMDL) for Phosphorus for the City of Newport Drinking Water Reservoirs*, approved by EPA in November 2021, the Town of Tiverton is required to obtain a RIPDES permit to mitigate the observed water quality impacts from the facility.

Stormwater management at the facility consists of best management practices including detention basins, sediment forebays, bioretention areas, erosion control, rip rap and check dams. The landfill runoff discharges to Borden Brook from Outfall 002A (at the north-northeast landfill edge, also identified as “OF-2”) and Outfall 004A (at the east-northeast landfill edge, also identified as “OF-4”). The landfill runoff discharges to Quaker Creek from Outfall 001A (at the north-northwest landfill edge, also identified as “OF-1”), Outfall 005A (at the southwest corner of the landfill, also identified as “OF-5”), and Outfall 006A (at the west-southwest end of the site across the landfill access road from OF-5, also identified as “OF-6”). Drainage from the areas designated as OF-3 and OF-7 in site plans drain to Quaker Creek through Outfall 005A. The sampling locations shall be before the effluent water enters the receiving waterbody or wetland. A detailed site plan is attached as Attachment A.

The facility submitted an application for permit coverage to the DEM on February 11, 2019. On February 8, 2022, the DEM sent a draft permit to the Town of Tiverton for review and comment. The facility responded, commenting that the permit was inaccurate as the landfill was no longer active and was in the process of being capped. The Tiverton Landfill #2 closure project was completed by November 2022. The DEM has adjusted this permit to reflect the current state of the facility and regulate discharge from the inactive, capped, landfill.

Receiving Water Description

The facility discharges into Quaker Creek and Borden Brook in Tiverton, Rhode Island. The waterbody ID for Quaker Creek is RI0010031R-04, while the waterbody ID for Borden Brook and tributaries is RI0010031R-01. Both waterbodies are included on DEM’s 2024 303d List of Impaired Waters (dated April 2024). Quaker Creek is impaired for impaired for iron, total phosphorus, and enterococcus and Borden Brook is impaired for total phosphorus and enterococcus. A TMDL for the enterococcus impairments on both waterbodies was

approved by EPA on September 27, 2023. While DEM has not completed a TMDL for the phosphorus impairments to these streams, as mentioned previously, DEM has completed a TMDL for phosphorus impairments to the downstream receiving water, Nonquit Pond. Specifically, EPA approved DEM's Newport Water Supply Reservoirs TMDL on November 15, 2021. This TMDL identified the Tiverton Landfill as a contributor of nutrients to Nonquit Pond. The sampling for the TMDL was conducted while the landfill was active, prior to being capped. The capped landfill's current nutrient contribution is not known.

Quaker Creek and Borden Brook are classified as freshwater Class AA waterbodies according to Rhode Island Water Quality Regulations. Class AA waterbodies are designated public drinking water sources or tributaries to public drinking water sources. They shall be suitable for primary and secondary contact recreation and for fish and wildlife habitat. The waters should have excellent aesthetic value.

Permit Limit Development and Benchmark Monitoring Requirements

The requirements set forth in this permit are from the State's Water Quality Regulations and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System, both filed pursuant to RIGL Chapter 46-12, as amended. RIDEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal Clean Water Act (CWA).

This permit requires that Tiverton Landfill develop and comply with a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include, but is not limited to, a description of the pollution controls as well as maintenance activities necessary to properly control stormwater runoff. All required inspections and maintenance must also be conducted.

When developing effluent limits for RIPDES Permits, DEM is required to consider limits based on the technology available to treat the pollutants (technology-based limits) and limits that are protective of the designated uses of the receiving water (water quality-based limits or WQBELs). EPA and DEM regulations require RIPDES permits to contain effluent limits that are more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve Federal or State water quality standards. The permit must also limit any pollutants that are or may be discharged at levels that caused, have the reasonable potential to cause, or contribute to an excursion above any water quality criterion. An excursion occurs if the projected or actual in stream concentrations exceed the applicable criterion.

The EPA's Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits states that it is appropriate for stormwater discharge permits to "use best management practices (BMPs) in first-round stormwater permits and expanded or better-tailored BMPs in subsequent permits, where necessary". The EPA supports the use of BMP-based permits since "numeric limitations for stormwater permits can be very difficult to develop at this time because of the existing state of knowledge about the intermittent and variable nature of these types of discharges and their effects on receiving waters" and since the current methodologies for developing WQBELs "were designed primarily for process wastewater discharges which occur at predictable rates with predictable pollutant loadings under low flow conditions in receiving waters".

The RIPDES Regulations (RI Code of Regulations: RIPDES 250-RICR-150-10-1-16.A) state that each permit shall contain conditions, when applicable, to adopt BMPs to control or abate the discharge of pollutants when: authorized under Section 402(p) of CWA for the control of stormwater discharges. Therefore, this permit contains terms and conditions to ensure that the permittee implements appropriate BMPs and a SWPPP as the key strategies to assure compliance with water quality standards.

This permit authorizes the discharge of stormwater and certain allowable non-stormwater discharges. Non-stormwater discharges that are authorized under this permit are limited to those described in Part I.A.7 of the permit document. The list of allowable non-stormwater discharges aligns with the allowable non-stormwater discharges in DEM's 2024 Multi-Sector General Permit (MSGP) for industrial stormwater as they reflect the operation of this facility. If any of those listed discharges may reasonably be expected to be present and to be mixed with stormwater discharges, they must be specifically identified and addressed in the facility's

Stormwater Pollution Prevention Plan.

Monitoring and Reporting Protocol

Consistent with 250-RICR-150-10-1.14.K, the required monitoring protocols are described in the permit document in Part I.A and Part I.H.1. The monitoring protocol is consistent with the 2024 MSGP, requiring semiannual monitoring and reporting. The permittee must collect two (2) samples per six (6) months separated by at least thirty (30) days with an antecedent dry period requirement of 48 hours (2 days). The reporting period is twice per year (once every six (6) months) with the first reporting period covering January through June and the second reporting period covering July through December. Electronic reporting via NetDMR is required.

Selection of Pollutants of Concern

As indicated above, RIPDES permits may contain narrative conditions and BMPs to ensure that water quality standards will be met. These BMPs may include operating procedures and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage. However, it is necessary to identify the specific pollutants that will be used to monitor the permittee's effectiveness in implementing the BMPs. When determining the specific pollutants of concern, DEM considered the receiving waterbody impairments and related TMDLs, data from nearby surface water samples submitted to the DEM, and the MSGP Sector L pollutants. While there is no historical discharge data or previous permit evaluations for this facility, DEM reviewed surface water and groundwater data submitted by the facility as part of its permit with the DEM Office of Land Revitalization and Sustainable Materials Management (LRSMM). Based on the data considered, DEM determined that sampling for flow, total suspended solids (TSS), enterococci, and total phosphorus is required at all outfalls. Additionally, sampling for iron, copper, lead, nickel, zinc, arsenic, cadmium and silver are required for Outfalls 001, 005, and 006.

TSS monitoring is required at all outfalls consistent with the 2024 MSGP. Sector L (Landfills, Land Application Sites, and Open Dumps) of the MSGP requires monitoring for total suspended solids (TSS). Enterococcus and total phosphorus monitoring are required at all outfalls due to the receiving water impairments for these pollutants, and iron monitoring is required at outfalls that discharge to Quaker Creek (Outfalls 001, 005, and 006) due to the iron impairments to Quaker Creek.

An analysis of the surface water data submitted to LRSMM that was collected by the facility from Quaker Creek sampling points SW-1, SW-2, and SW-3, shows the concentrations of phosphorus, iron, copper, lead, nickel, zinc, arsenic, cadmium and silver can exceed the human health criteria and/or the freshwater chronic exposure criteria. As such, these are pollutants of concern for this facility. The locations of the surface water sampling points can be found on the facility site plan in Attachment B. A summary of the data can be found in Attachment C.

Impaired Waters Monitoring

The receiving water for Outfalls 002 and 004 is Borden Brook, which is impaired for enterococcus and total phosphorus. Therefore, monitoring is required for both pollutants at outfalls discharging to Borden Brook. The receiving water for Outfalls 001, 005, and 006 is Quaker Creek, which is impaired for enterococcus, total phosphorus, and iron. Therefore, monitoring is required for these pollutants at outfalls discharging to Quaker Creek. A benchmark was developed for total phosphorus due to the Newport Drinking Water TMDL. The benchmark is explained in the following sections. A permit condition has been added to Parts 1.A.1 and I.A.2 that allows the permittee to discontinue enterococci monitoring if after two (2) consecutive monitoring periods (i.e., 12 consecutive months), all sample results are non-detect and the EPA approved test method (40 CFR 136) is sufficiently sensitive. The permittee must notify DEM in writing (i.e., cover letter and analytic reports). Sampling can only be eliminated after DEM provides written approval.

Technology-Based Permit Requirements

The facility is not subject to any federal effluent guidelines because it is not an active landfill.

The Clean Water Act requires that discharges from existing facilities, at a minimum, must meet technology-based effluent limitations reflecting, among other things, the technological capability of permittees to control pollutants in their discharges. Both technology-based and water quality-based effluent limitations and benchmark values are implemented through NPDES permits. The technology-based conditions listed in Part I.B of the permit are based on and consistent with the 2024 RIPDES MSGP. This section of the permit consists of control measures which can be actions (including processes, procedures, schedules of activities, prohibitions on practices and other management practices) or structural or installed devices to prevent or reduce water pollution. In this permit, the permittee may be required to select, design, install, implement, and maintain site-specific control measures to meet these benchmarks in accordance with Appendix 1 of the permit.

Water Quality Based Permit Requirements

Due to the intermittent nature of stormwater discharges and the absence of historical discharge data from the facility, it is difficult to determine which pollutants may have reasonable potential to cause a water quality violation. Therefore, the DEM does not typically establish numeric water quality-based effluent limits for stormwater discharges. Instead, the DEM uses benchmark monitoring to monitor the quality of the stormwater discharges. Benchmark monitoring concentrations are not permit limits and may not be directly correlated to water quality standards. Instead, they are pollutant levels that EPA developed to be protective of water quality under nearly all scenarios. The DEM applies these benchmarks across stormwater discharges covered by both individual and general permits.

The permit requires monitoring for total phosphorus, total iron, total copper, total lead, total nickel, total zinc, total arsenic, total cadmium, and total silver at outfalls 001, 005, and 006. As mentioned previously, these pollutants have been identified as pollutants of concern based on surface water data submitted to LRSMM. The data is shown in Attachment C. A permit condition has been added to Parts 1.A.1 and I.A.2 that allows the permittee to discontinue monitoring for total iron, total copper, total lead, total nickel, total zinc, total arsenic, total cadmium, and total silver if after two (2) consecutive monitoring periods (i.e., 12 consecutive months), all sample results are non-detect and the EPA approved test method (40 CFR 136) is sufficiently sensitive. The permittee must notify DEM in writing (i.e., cover letter and analytic reports). Sampling can only be eliminated after DEM provides written approval.

BPJ-Based Permit Requirements

The average daily and maximum monthly flow monitoring requirements in the permit were based on Best Professional Judgement (BPJ). Also, based on BPJ, the DEM has assigned a requirement that the facility develop and implement a Stormwater Pollution Prevention Plan (SWPPP).

Benchmark Monitoring

As described in the Fact Sheet for the 2024 MSGP, benchmarks are target concentrations that are intended to assist facilities in determining whether their pollution control measures are adequate to protect water quality. A benchmark exceedance does not necessarily indicate that a discharge is causing or contributing to a violation of an instream water quality standard, but it does require that the facility evaluate control measures and follow-up corrective actions by triggering a review of the facility's stormwater controls by modifying such controls as necessary. Benchmark monitoring and required corrective actions are described in Part I.E and Appendix 1 of the permit.

Monitoring for TSS is required at all outfalls. Consistent with the 2024 MSGP Sector L (Landfills, Land Application Sites, and Open Dumps), the benchmark for TSS is set at 100 mg/L.

Additionally, a benchmark for phosphorus was established to be protective of the TMDL. The Rhode Island Water Quality Regulations at 250-RICR-150-10 §1.10(D) state that the average total phosphorus shall not exceed 0.025 mg/L in any lake, pond, kettlehole or reservoir, and that the average total phosphorus in tributaries at the point where they enter such bodies of water shall not cause exceedance of this phosphorous criteria, except as naturally occurs, unless the Director determines, on a site-specific basis, that a different

value for phosphorous is necessary to prevent cultural eutrophication. The Newport Drinking Water Supply TMDL that addressed total phosphorus impairments to all nine Newport Water Supply Reservoirs, including Nonquit Pond, demonstrated that all nine water supply source reservoirs exhibited degraded water quality, showing moderate to severe nutrient enriched conditions that included elevated levels of total phosphorus. The findings from the TMDL study indicated that a seasonal mean total phosphorus concentration of 18 µg/L would be protective of Newport's drinking water reservoirs. Since the Tiverton Landfall has a reasonable potential to cause or contribute to elevated phosphorus concentrations, DEM calculated a benchmark for total phosphorus using the TMDL endpoint of 18 µg/L.

DEM calculated a benchmark of 15 µg/L using the USGS application *StreamStats*, the Rational Method, and the DEM policy to assign 80% of the allowable water quality allocation to a RIDPES permittee in cased where sufficient background data does not exist. *StreamStats* was used to determine a 7Q10 flow (lowest 7-day average flow that occurs on average once every 10 years) of 0.0405 cubic feet per second (cfs) at the point where Borden Brook (Borden Brook downstream of the landfill contains Quaker Creek) enters Nonquit Pond. The Rational Method was used to calculate a runoff volume from the landfill (5.75 cfs) and obtain a dilution factor (1.007). The total phosphorus benchmark for all outfalls was calculated to be 0.015 mg/L (i.e., benchmark = 0.8 * 0.018 mg/L * 1.012). A summary of the total phosphorus limit calculations, as well as the USGS StreamStats report and Rational Method calculations used to determine the dilution factor for those limit calculations, are included in Attachment D and Attachment E.

Any exceedances of the benchmark values shall trigger a review of the facility's SWPPP by the permittee and modification as necessary to reduce the pollutant concentrations in the discharge to levels below the benchmark concentrations. A list of corrective actions and best practices has been added to this permit as Appendix 1. The minimum detection limit set for total phosphorus in Part I.G of the permit is greater than the calculated benchmark value. Therefore, when calculating the need for corrective actions, sample results must be compared to the minimum detection limit (20 µg/L) versus the calculated benchmark (15 µg/L). The minimum detection limit may be reduced by permit modification if more sensitive test methods are approved by the EPA and the State.

Antibacksliding and Antidegredation

Provided below is a brief introduction to Antibacksliding and Antidegradation; as well as a discussion on how the two policies were used to calculate water quality-based limits.

Antibacksliding

Antibacksliding restricts the level of relaxation of water quality-based limits from the previous permit. Section 303(d)(4) of the Clean Water Act addresses antibacksliding as the following:

Section 303(d)(4)

1. Standards not attained – For receiving waters that have not attained the applicable water quality standards, limits based on a TMDL or WLA can only be revised if the water quality standards will be met. This may be done by (i) determining that the cumulative effect of all such revised limits would assure the attainment of such water quality standards; or (ii) removing the designated use which is not being attained in accordance with regulations under Section 303.

2. Standards attained – For receiving waters achieving or exceeding applicable water quality standards, limits can be relaxed if the revision is consistent with the State's Antidegradation Policy.

Therefore, in order to determine whether backsliding is permissible, the first question that must be asked is whether or not the receiving water is attaining the water quality standard. DEM has determined the most appropriate evaluation of existing water quality is by calculating pollutant levels, which would result after the consideration of all currently valid RIPDES permit limits or historic discharge data (whichever is greater), background data (when available), and any new information (i.e., dilution factors).

Antidegradation

The DEM's "*Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations July 2006*" (the Policy) established four tiers of water quality protection:

Tier 1. In all surface waters, existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

Tier 2. In waters where the existing water quality criteria exceeds the levels necessary to support the propagation of fish and wildlife and recreation in and on the water, that quality shall be maintained and protected except for insignificant changes in water quality as determined by the Director and in accordance with the Antidegradation Implementation Policy, as amended. In addition, the Director may allow significant degradation, which is determined to be necessary to achieve important economic or social benefits to the State in accordance with the Antidegradation Policy.

Tier 2½. Where high quality waters constitute Special Resource Protection Waters SRPWs[1], there shall be no measurable degradation of the existing water quality necessary to protect the characteristics which cause the waterbody to be designated a SRPW. Notwithstanding that all public drinking water supplies are SRPWs, public drinking water suppliers may undertake temporary and short-term activities within the boundary perimeter of a public drinking water supply impoundment for essential maintenance or to address emergency conditions in order to prevent adverse effect on public health or safety. These activities must comply with the requirements set forth in Tier 1 and Tier 2.

Tier 3. Where high quality waters constitute an Outstanding Natural Resource ONRWs[2], that water quality shall be maintained and protected. The State may allow some limited activities that result in temporary or short-term changes in the water quality of an ONRW. Such activities must not permanently degrade water quality or result in water quality lower than necessary to protect the existing uses in the ONRW.

The formulas presented ensure that permit limitations are based upon water quality criteria and methodologies established to ensure that all designated uses will be met.

In terms of the applicability of Tier 2 of the Policy, a waterbody is assessed as being high quality on a parameter-by-parameter basis. In accordance with Part II of the Policy, "Antidegradation applies to all new or increased projects or activities which may lower water quality or affect existing water uses, including but not limited to all 401 Water Quality Certification reviews and any new, reissued, or modified RIPDES permits." Part VI.A of the Policy indicates that it is not applicable to activities which result in insignificant (i.e., short-term minor) changes in water quality and that significant changes in water quality will only be allowed if it is necessary to accommodate important economic and social development in the area in which the receiving waters are located (important benefits demonstration). Part VI.B.4 of the Policy states that: "Theoretically, any new or increased discharge or activity could lower existing water quality and thus require the important benefits demonstration. However, DEM will: 1) evaluate applications on a case-by-case basis, using BPJ and all pertinent and available facts, including scientific and technical data and calculations as provided by the applicant; and 2) determine whether the incremental loss is significant enough to require the important benefits demonstration described below. [If not then as a general rule DEM will allocate no more than 20%.] Some of the considerations which will be made to determine if an impact is significant in each site specific decision are: 1) percent change in water quality parameter value and their temporal distribution; 2) quality and value of the resource; 3) cumulative impact of discharges and activities on water quality to date; 4) measurability of the change; 5) visibility of the change; 6) impact on fish and wildlife habitat; and 7) impact on potential and existing uses. As a general guide, any discharge or activity which consumes greater than 20% of the remaining assimilative capacity may be deemed significant and invoke full requirements to demonstrate important economic or social benefits."

[1] SRPWs are surface waters identified by the Director as having significant recreational or ecological uses.
[2] ONRWs are a special subset of high-quality waterbodies, identified by the State as having significant recreational or ecological water uses.

In terms of a RIPDES permit, an increased discharge is defined as an increase in any limitation, which would result in an increased mass loading to a receiving water. The baseline for this comparison would be the monthly average mass loading established in the previous permit. It would be inappropriate to use the daily maximum mass loading since the Policy is not applicable to short-term changes in water quality.

For the purposes of ensuring that the revised limit is consistent with the requirements of antidegradation, existing water quality must be defined. As explained earlier, DEM evaluates existing water quality by determining the pollutant levels which would result under the design conditions appropriate for the particular criteria (i.e., background water quality, when available and/or appropriate, non-point source inputs; and existing RIPDES permit limitations or recent historical discharge data, whichever is higher). In general, available data would be used to make this determination.

Use the above-mentioned criteria, the present instream water quality, C_p, is defined as:

$$C_p = \frac{(DF - 1) \cdot C_B + (1 \cdot C_d)}{DF}$$

where: C_b = background concentration[3]
C_d = discharge data[4]
DF = dilution factor

Although this permit sets forth benchmark values as opposed to numerical limits, the antibacksliding and antidegradation policies still apply. In this permit, all benchmark values are newly derived as this is the initial permit issuance. Therefore, the limits contained in this permit are consistent with the Department's anti-degradation policy.

Emerging Contaminants

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that have been in use since the 1940s. They are found in a wide array of consumer and industrial products. Landfills can be sources of PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects[5]. DEM is collecting information to evaluate the potential impacts that discharges of PFAS from various dischargers may have on downstream uses, which can include drinking water, recreational and aquatic life uses depending on the receiving water.

In 2022, Rhode Island passed a law concerning PFAS in drinking water, groundwater, and surface waters. The Rhode Island law establishes monitoring requirements for public water supplies as well as treatment requirements if the sum of the concentrations of the following six species of PFAS exceed 20 parts per trillion (ppt):

Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptanoic acid (PFHpA)
Perfluorononanoic acid (PFNA)	Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)	Perfluorodecanoic acid (PFDA)

The 2022 Rhode Island law is consistent with the MassDEP public drinking water standard regarding allowable concentrations and PFAS species. In addition to drinking water requirements, the 2022 Rhode Island law also compelled DEM to adopt a groundwater quality standard and a surface water action level by December 31, 2023.

[3] Data collected at a location that is unimpacted by significant point source discharges.
[4] Discharge data refers to the maximum of the permit limit or the historic discharge level. The historic discharge level is determined by calculating the upper 95th confidence interval for the monthly average reported data for the past five (5) years. For specific cases, changes in treatment efficiency or pretreatment limitations may support the use of an alternative period of time.
[5] 5 EPA, EPA's Per- and Polyfluoroalkyl Substances (PFAS) Strategic Roadmap: EPA's Commitments to Action 2021-2024, EPA-100-K-21-002, October 2021. https://www.epa.gov/system/files/documents/2021- 10/pfas-roadmap_final-508.pdf

Although the Rhode Island Water Quality Regulations (250-RICR-150-05-1) do not include numeric criteria for PFAS, the RI Water Quality Regulations § 1.10(D)(1) under Chemical Constituents have narrative requirements that prohibits the discharge of pollutants in concentration or combinations that could be harmful to humans or fish and wildlife for the most sensitive and governing water class use.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Permit requires that the facility conduct annual sampling at the major outfalls (Outfalls 001A, 002A, 004A, 005A, and 006A) for PFAS chemicals.

The purpose of this monitoring and reporting requirement is to quantify potential discharges of PFAS from this facility and to inform future permitting decisions. DEM is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—(A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require…"

Since an EPA method for sampling and analyzing PFAS in wastewater is not currently available, the permit requires that PFAS be analyzed using draft EPA method 1633 until a 40 CFR Part 136 approved test method for wastewater is made available to the public. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

As detailed in Part I.A.3 of the permit, DEM requires annual PFAS sampling to determine the potential PFAS contamination from the facility. The facility shall test for all forty PFAS parameters listed in Appendix 2 of the permit.

Additional Permit Requirements

The permit requires that inspections of the stormwater controls be conducted in a manner consistent with the SWPPP requirements found in Part I.B. The SWPPP requirements are consistent with RIPDES policy and the 2024 MSGP permit. Key site and effluent inspections, their minimum frequencies, and required follow up deliverables are indicated in the reissuance in Part I.C. An annual report is required, submitted to the DEM by January 15th of each year, for the previous calendar year as described in Part 1.D of the permit. These reports must summarize the results of the site inspections required under the permit. With the authorization of this permit, the facility must submit a SWPPP to comply with the requirements described in Part I.B of the permit within 90 days.

Following any condition which triggers corrective actions, such as benchmark exceedances (Part I.E.2 of the permit), the facility must implement corrective actions as described in Appendix 1 of the permit. These corrective actions are consistent with the 2024 MSGP. The facility is to follow the corrective action framework to prevent repeated benchmark exceedances. Additional corrective actions shall be implemented as necessary and as described in Appendix 1. Years without annual average benchmark

exceedances do not require corrective actions. Corrective Actions must be summarized and submitted to DEM with the annual Comprehensive Site Evaluation Report. Should the required corrective actions require SWPPP amendments, the facility shall resubmit the updated SWPPP to the DEM.

The permit requires that the facility conduct one priority pollutant scan on each outfall during the fourth year of permit coverage. This one-time test will be used to determine reasonable potential for each pollutant during permit reissuance.

The remaining general and specific conditions of the permit are based on the RIPDES Regulations (RI Code of Regulations: 250-RICR-150-10) as well as 40 CFR Parts 122 through 125 and consist primarily of requirements common to all stormwater permits.

Permit Monitoring Summary

Presented in Table 1 is a summary of the permit sampling frequencies.

Table 1: Final Permit Monitoring Requirements[1]

Parameter	Average Monthly	Maximum Daily	Minimum	Maximum
Outfalls 001, 002, 004, 005, 006				
Flow	--- GPD	--- GDP		
TSS			--- mg/L	
Enterococcus			--- #/100 mL	--- #/100 mL
Total Phosphorus			--- mg/L	--- mg/L
PFAS Analytes				--- ng/L
Outfalls 001, 005, 006				
Total Iron			--- mg/L	--- mg/L
Total Copper			--- mg/L	--- mg/L
Total Lead			--- mg/L	--- mg/L
Total Nickel			--- mg/L	--- mg/L
Total Zinc			--- mg/L	--- mg/L
Total Arsenic			--- mg/L	--- mg/L
Total Cadmium			--- mg/L	--- mg/L
Total Silver			--- mg/L	--- mg/L

--- Signifies a parameter which must be monitored, and data must be reported; no limit has been established at this time.

[1]Monitoring frequencies for all pollutants except the PFAS analytes is twice per six months. PFAS analytes are to be sampled once per year. See Appendix 2 of the permit for a list of all PFAS analytes.

IV. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In

reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of the RIPDES Regulations (RI Code of Regulations: 250-RICR-150-10-1.50).

V. DEM CONTACT

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Ekaterini Papazekos, E.I.T.,
Environmental Engineer I
Department of Environmental Management / Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908
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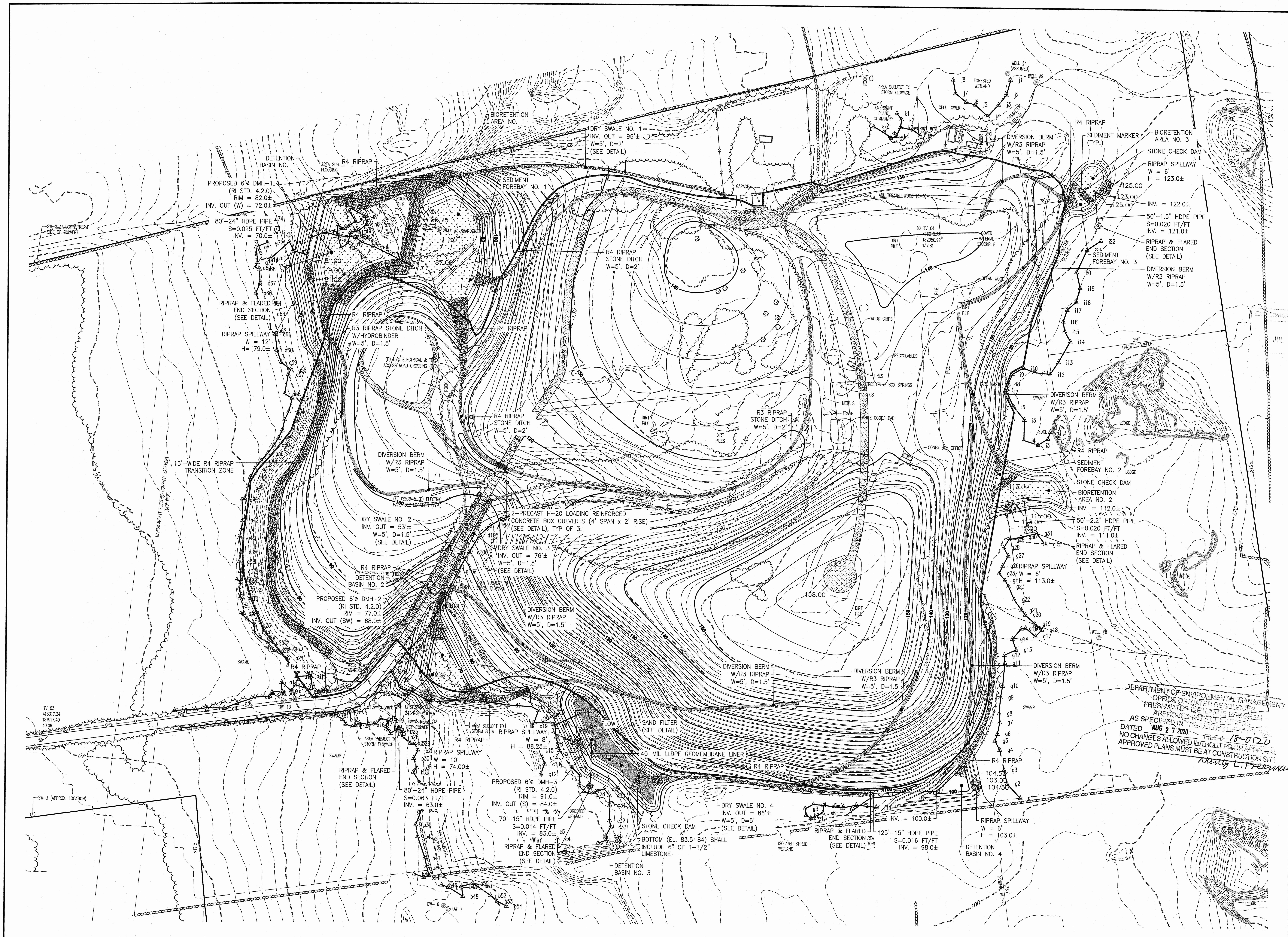
25 June 2026
Date

Heidi Travers
Heidi Travers, P.E.
Environmental Engineer IV
RIPDES Program
Office of Water Resources
Department of Environmental Management

VI. ATTACHMENTS

Attachment A
Site Map with Utilities and Drainage



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH ...
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED AUG 2 7 2020 FILE # 18-0120
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management JUL 1 5 2020

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

N

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

Tiverton Landfill Closure

AP 707 / Lots 101 & 106
Town of Tiverton
50 Industrial Way, Tiverton, RI

TIMOTHY P. THIES
No. 9054
REGISTERED PROFESSIONAL ENGINEER
7-14-20 (CIVIL)

REVISIONS:

PROJECT NO.:	94139.01
DATE:	JULY 2020
SCALE:	1"=80'
DESIGNED BY:	TCJ
CHECKED BY:	SPD
DRAWN BY:	TCJ
APPROVED BY:	TPT

DRAWING TITLE:

DRAINAGE & UTILITY PLAN

DRAWING NO.: C6.0

SHEET NO. 8 OF 14

Attachment B
Site Map with Surface Water Sampling Points

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

N

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

Tiverton Landfill Closure

AP 707 / Lots 101 & 106
Town of Tiverton
50 Industrial Way, Tiverton, RI

TIMOTHY P. THIES
No. 9054
REGISTERED PROFESSIONAL ENGINEER
9/9/21 (CIVIL)

REVISIONS:

PROJECT NO.:	94139.01
DATE:	SEPTEMBER 2021
SCALE:	1"=80'
DESIGNED BY:	TCJ
CHECKED BY:	SPD
DRAWN BY:	TCJ
APPROVED BY:	TPT

DRAWING TITLE:

DRAINAGE & UTILITY PLAN

DRAWING NO.: C6.0

SHEET NO. 11 OF 17

Attachment C
Surface Water Sampling Results 2024

TABLE 5H
ANNUAL SUMMARY OF SURFACE WATER MONITORING RESULTS
SURFACE WATER SAMPLING LOCATION SW-1
2024 MONITORING YEAR

Concentration (expressed in same units as Human Health Threshold)

Criteria / Parameter	Units	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Dec '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Sep '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Jun '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Mar '24
Antimony	mg/L[1]	0.0056	0.45000	0.01000	0.0028	0.0056	0.45000	0.01000	ND	0.0056	0.45000	0.01000	ND	0.0056	0.45000	0.01000	ND
Arsenic	mg/L[1]	0.00018	0.34000	0.15000	**0.0196**	0.00018	0.34000	0.15000	**0.0009**	0.00018	0.34000	0.15000	**0.0005**	0.00018	0.34000	0.15000	**0.0002**
Barium	mg/L[1]	2	--	--	0.061	2	--	--	0.012	2	--	--	0.01	2	--	--	0.008
Beryllium	mg/L[1]	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND
Cadmium	mg/L[1]	0.005	*0.00058*	*0.00010*	**0.0005**	0.005	*0.00059*	*0.00010*	ND	0.005	*0.00053*	*0.00009*	ND	0.005	*0.00044*	*0.00008*	ND
Calcium	mg/L	--	--	--	6.65	--	--	--	7.26	--	--	--	6.3	--	--	--	5.35
Chromium	mg/L[1]	0.1	0.01600	0.01100	0.0035	0.1	0.01600	0.01100	0.0006	0.1	0.01600	0.01100	0.0004	0.1	0.01600	0.01100	0.0004
Cobalt	mg/L[5]	0.044	--	--	0.0069	0.044	--	--	0.0028	0.044	--	--	0.0016	0.044	--	--	0.0007
Copper	mg/L[1]	1.3	*0.00402*	*0.00300*	**0.012**	1.3	*0.00412*	*0.00306*	ND	1.3	*0.00367*	*0.00276*	ND	1.3	*0.00310*	*0.00237*	ND
Iron	mg/L[3]	0.3	--	1.00000	**5.03**	0.3	--	1.00000	**5.32**	0.3	--	1.00000	**2.91**	0.3	--	1.00000	**0.721**
Lead	mg/L[1]	0.015	*0.01564*	*0.00061*	**0.0071**	0.015	*0.01609*	*0.00063*	**0.001**	0.015	*0.01401*	*0.00055*	**0.0007**	0.015	*0.01146*	*0.00045*	**0.0005**
Magnesium	mg/L	--	--	--	2.73	--	--	--	2.52	--	--	--	2.31	--	--	--	1.88
Mercury	mg/L[1]	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND
Nickel	mg/L[2]	0.61	*0.15854*	*0.01761*	**0.02**	0.61	*0.16191*	*0.01798*	0.003	0.61	*0.14590*	*0.01620*	0.002	0.61	*0.12555*	*0.01394*	0.002
Selenium	mg/L[7]	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND
Silver	mg/L[2]	0.1	*0.00036*	--	**0.0011**	0.1	*0.00037*	--	0.0002	0.1	*0.00030*	--	ND	0.1	*0.00022*	--	ND
Thallium	mg/L[1]	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND
Tin	mg/L[5]	12	--	--	ND	12	--	--	ND	12	--	--	ND	12	--	--	ND
Vanadium	mg/L[5]	0.086	--	--	0.0118	0.086	--	--	0.0026	0.086	--	--	0.0009	0.086	--	--	0.0006
Zinc	mg/L[3]	2	*0.03961*	*0.03993*	**0.173**	2	*0.04045*	*0.04078*	**0.142**	2	*0.03645*	*0.03675*	0.009	2	*0.03136*	*0.03161*	0.021
Hardness (CaCO3)	mg/L	--	--	< 20	27.8	--	--	< 20	28.5	--	--	< 20	25.2	--	--	< 20	21.1
Ammonia	mg/L[2]	30	18.4	5.20	ND	30	18.4	5.20	0.2	30	18.4	5.20	0.5	30	18.4	5.20	ND
TKN	mg/L	--	--	--	ND	--	--	--	0.8	--	--	--	1.5	--	--	--	0.5
Total Phosphorus	mg/L[6]	0.025	--	--	**0.128**	0.025	--	--	**0.356**	0.025	--	--	**0.159**	0.025	--	--	**0.041**
Total Nitrogen	mg/L[6]	10	--	--	ND	10	--	--	0.8	10	--	--	1.5	10	--	--	0.5

1. Threshold value given in the EPA's National Recommended Water Quality Criteria for Human Health Thresholds for the Consumption of Water and Organisms, amended 2019. Where applicable, the RIDEM equivalent (250-RICR-150-05-1)
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Screening Level for residential tap water with a target hazard quotient (THQ) of 1, as provided in the November 2024 revision of the EPA's Regional Screening Level (RSL) Tables created for assistance in performing Human Health Risk Assessments, except where a more stringent standard from prior Screening Level updates was maintained. The revised standard for cobalt was accepted despite being higher than the November 2021 screening level due to the revised concentration's similarity with prior guidelines.
6. Ambient water quality standard.
7. Ambient water quality standard for selenium was selected from the EPA's 2016 Final Guidance for Aquatic Life Ambient Water Quality Criterion for Selenium. This guidance provides four chronic values that are dependent on site conditions, and the Lotic Water Chronic Criterion has been selected as it appears to be most applicable to site conditions.

###	Concentration exceeds the applicable Human Health Criteria
###	Concentration exceeds the applicable Freshwater Acute Exposure Criteria
###	Concentration exceeds the applicable Freshwater Chronic Exposure Criteria
###	Concentration exceeds more than one applicable criteria

No threshold value has been provided for parameters not identified in the sources listed above
Aquatic Life criteria provided above from RIDEM Water Quality Regulations or the EPA's National Recommended Water Quality Criteria, Human Health Criteria for Consumption of water and organisms. "--" represents parameters for which no aquatic life criteria has been established.
"O.R." - Threshold value is temperature and/or pH dependent. Temperature and/ or pH was outside of the range for which a threshold value is established.

TABLE 5I
ANNUAL SUMMARY OF SURFACE WATER MONITORING RESULTS
SURFACE WATER SAMPLING LOCATION SW-2
2024 MONITORING YEAR

Concentration (expressed in same units as Human Health Threshold)

Criteria / Parameter	Units	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Dec '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Sep '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Jun '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Mar '24
Antimony	mg/L[1]	0.0056	0.45000	0.01000	0.0031	0.0056	0.45000	0.01000	0.0001	0.0056	0.45000	0.01000	ND	0.0056	0.45000	0.01000	ND
Arsenic	mg/L[1]	0.00018	0.34000	0.15000	**0.018**	0.00018	0.34000	0.15000	**0.0007**	0.00018	0.34000	0.15000	**0.0005**	0.00018	0.34000	0.15000	**0.0002**
Barium	mg/L[1]	2	--	--	0.059	2	--	--	0.01	2	--	--	0.01	2	--	--	0.009
Beryllium	mg/L[1]	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND
Cadmium	mg/L[1]	0.005	*0.00042*	*8.05E-05*	ND	0.005	*0.00035*	*7.10E-05*	ND	0.005	*0.00040*	*7.71E-05*	ND	0.005	*0.00037*	*7.39E-05*	ND
Calcium	mg/L	--	--	--	4.34	--	--	--	4.05	--	--	--	4.64	--	--	--	4.46
Chromium	mg/L[1]	0.1	0.01600	0.01100	0.0037	0.1	0.01600	0.01100	0.0006	0.1	0.01600	0.01100	0.0005	0.1	0.01600	0.01100	0.0004
Cobalt	mg/L[5]	0.044	--	--	0.0048	0.044	--	--	0.0014	0.044	--	--	0.0014	0.044	--	--	0.0003
Copper	mg/L[1]	1.3	*0.00296*	*0.00227*	**0.017**	1.3	*0.00250*	*0.00195*	0.001	1.3	*0.00280*	*0.00216*	ND	1.3	*0.00264*	*0.00205*	ND
Iron	mg/L[3]	0.3	--	1.00000	**4.87**	0.3	--	1.00000	**1.89**	0.3	--	1.00000	**2.16**	0.3	--	1.00000	**0.592**
Lead	mg/L[1]	0.015	*0.01085*	*4.23E-04*	**0.0111**	0.015	*0.00886*	*3.45E-04*	**0.0015**	0.015	*0.01012*	*3.94E-04*	**0.0008**	0.015	*0.00946*	*3.69E-04*	**0.0005**
Magnesium	mg/L	--	--	--	2.26	--	--	--	1.63	--	--	--	1.78	--	--	--	1.63
Mercury	mg/L[1]	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND
Nickel	mg/L[2]	0.61	*0.12049*	*0.01338*	0.008	0.61	*0.10353*	*0.01150*	0.002	0.61	*0.11438*	*0.01270*	0.002	0.61	*0.10872*	*0.01208*	0.001
Selenium	mg/L[7]	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND
Silver	mg/L[2]	0.1	*2.04E-04*	--	**0.0015**	0.1	*1.50E-04*	--	**0.0002**	0.1	*1.83E-04*	--	ND	0.1	*1.65E-04*	--	ND
Thallium	mg/L[1]	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND
Tin	mg/L[5]	12	--	--	ND	12	--	--	ND	12	--	--	ND	12	--	--	ND
Vanadium	mg/L[5]	0.086	--	--	0.0133	0.086	--	--	0.0018	0.086	--	--	0.001	0.086	--	--	0.0006
Zinc	mg/L[3]	2	*0.03009*	*0.03034*	**0.083**	2	*0.02585*	*0.02606*	**0.054**	2	*0.02856*	*0.02880*	0.012	2	*0.02715*	*0.02737*	0.019
Hardness (CaCO3)	mg/L	--	--	< 20	20.1	--	--	< 20	***16.8***	--	--	< 20	***18.9***	--	--	< 20	***17.8***
Ammonia	mg/L[2]	30	18.4	5.20	ND	30	18.4	5.20	ND	30	18.4	5.20	0.5	30	18.4	5.20	ND
TKN	mg/L	--	--	--	ND	--	--	--	0.7	--	--	--	2.3	--	--	--	0.4
Total Phosphorus	mg/L[6]	0.025	--	--	**0.352**	0.025	--	--	**2.08**	0.025	--	--	**0.194**	0.025	--	--	**0.031**
Total Nitrogen	mg/L[6]	10	--	--	ND	10	--	--	0.7	10	--	--	2.3	10	--	--	0.4

1. Threshold value given in the EPA's National Recommended Water Quality Criteria for Human Health Thresholds for the Consumption of Water and Organisms, amended 2019. Where applicable, the RIDEM equivalent (250-RICR-150-05-1)
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Screening Level for residential tap water with a target hazard quotient (THQ) of 1, as provided in the November 2024 revision of the EPA's Regional Screening Level (RSL) Tables created for assistance in performing Human Health Risk Assessments, except where a more stringent standard from prior Screening Level updates was maintained. The revised standard for cobalt was accepted despite being higher than the November 2021 screening level due to the revised concentration's similarity with prior guidelines.
6. Ambient water quality standard.
7. Ambient water quality standard for selenium was selected from the EPA's 2016 Final Guidance for Aquatic Life Ambient Water Quality Criterion for Selenium. This guidance provides four chronic values that are dependent on site conditions, and the Lotic Water Chronic Criterion has been selected as it appears to be most applicable to site conditions.

###	Concentration exceeds the applicable Human Health Criteria
###	Concentration exceeds the applicable Freshwater Acute Exposure Criteria
###	Concentration exceeds the applicable Freshwater Chronic Exposure Criteria
###	Concentration exceeds more than one applicable criteria

No threshold value has been provided for parameters not identified in the sources listed above
Aquatic Life criteria provided above from RIDEM Water Quality Regulations or the EPA's National Recommended Water Quality Criteria, Human Health Criteria for Consumption of water and organisms. "--" represents parameters for which no aquatic life criteria has been established.
"O.R." - Threshold value is temperature and/or pH dependent. Temperature and/ or pH was outside of the range for which a threshold value is established.

TABLE 5J
ANNUAL SUMMARY OF SURFACE WATER MONITORING RESULTS
SURFACE WATER SAMPLING LOCATION SW-3
2024 MONITORING YEAR
Concentration (expressed in same units as Human Health Threshold)

Criteria / Parameter	Units	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Dec '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Sep '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Jun '24	Human Health Threshold	Freshwater Aquatic Life Threshold (Acute)	Freshwater Aquatic Life Threshold (Chronic)	Mar '24
Antimony	mg/L[1]	0.0056	0.45000	0.01000	0.0019	0.0056	0.45000	0.01000	ND	0.0056	0.45000	0.01000	ND	0.0056	0.45000	0.01000	ND
Arsenic	mg/L[1]	0.00018	0.34000	0.15000	**0.0137**	0.00018	0.34000	0.15000	**0.0008**	0.00018	0.34000	0.15000	**0.0006**	0.00018	0.34000	0.15000	**0.0002**
Barium	mg/L[1]	2	--	--	0.045	2	--	--	0.013	2	--	--	0.01	2	--	--	0.009
Beryllium	mg/L[1]	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND	0.004	0.00750	0.00017	ND
Cadmium	mg/L[1]	0.005	*0.00048*	*0.00009*	ND	0.005	*0.00063*	*0.00011*	ND	0.005	*0.00051*	*0.00009*	ND	0.005	*0.00047*	*0.00009*	ND
Calcium	mg/L	--	--	--	5.58	--	--	--	7.86	--	--	--	6.23	--	--	--	5.86
Chromium	mg/L[1]	0.1	0.01600	0.01100	0.0026	0.1	0.01600	0.01100	0.0006	0.1	0.01600	0.01100	0.0005	0.1	0.01600	0.01100	0.0004
Cobalt	mg/L[5]	0.044	--	--	0.0023	0.044	--	--	0.0019	0.044	--	--	0.0012	0.044	--	--	0.0002
Copper	mg/L[1]	1.3	*0.00335*	*0.00254*	**0.006**	1.3	*0.00436*	*0.00323*	ND	1.3	*0.00357*	*0.00269*	ND	1.3	*0.00328*	*0.00249*	ND
Iron	mg/L[3]	0.3	--	1.00000	**4.37**	0.3	--	1.00000	**4.74**	0.3	--	1.00000	**2.38**	0.3	--	1.00000	**0.562**
Lead	mg/L[1]	0.015	*0.01257*	*4.90E-04*	**0.004**	0.015	*0.01723*	*6.71E-04*	**0.001**	0.015	*0.01357*	*5.29E-04*	**0.0007**	0.015	*0.01227*	*4.78E-04*	0.0003
Magnesium	mg/L	--	--	--	2.19	--	--	--	2.6	--	--	--	2.18	--	--	--	1.89
Mercury	mg/L[1]	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND	0.00014	0.00140	0.00077	ND
Nickel	mg/L[2]	0.61	*0.13455*	*0.01494*	0.008	0.61	*0.17052*	*0.01894*	0.002	0.61	*0.14246*	*0.01582*	0.002	0.61	*0.13206*	*0.01467*	0.001
Selenium	mg/L[7]	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND	0.05	0.02000	0.00310	ND
Silver	mg/L[2]	0.1	*0.00025*	--	ND	0.1	*0.00041*	--	ND	0.1	*0.00029*	--	ND	0.1	*0.00025*	--	ND
Thallium	mg/L[1]	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND	0.00024	0.04600	0.00100	ND
Tin	mg/L[5]	12	--	--	ND	12	--	--	ND	12	--	--	ND	12	--	--	ND
Vanadium	mg/L[5]	0.086	--	--	0.0089	0.086	--	--	0.0022	0.086	--	--	0.0008	0.086	--	--	ND
Zinc	mg/L[3]	2	*0.03361*	*0.03388*	0.033	2	*0.04261*	*0.04296*	**0.055**	2	*0.03559*	*0.03588*	0.021	2	*0.03299*	*0.03326*	0.027
Hardness (CaCO3)	mg/L	--	--	< 20	22.9	--	--	< 20	30.3	--	--	< 20	24.5	--	--	< 20	22.4
Ammonia	mg/L[2]	30	18.4	5.20	ND	30	18.4	5.20	0.1	30	18.4	5.20	0.4	30	18.4	5.20	ND
TKN	mg/L	--	--	--	ND	--	--	--	0.4	--	--	--	0.9	--	--	--	0.4
Total Phosphorus	mg/L[6]	0.025	--	--	**0.064**	0.025	--	--	**0.195**	0.025	--	--	**0.099**	0.025	--	--	0.022
Total Nitrogen	mg/L[6]	10	--	--	ND	10	--	--	0.4	10	--	--	0.9	10	--	--	0.4

1. Threshold value given in the EPA's National Recommended Water Quality Criteria for Human Health Thresholds for the Consumption of Water and Organisms, amended 2019. Where applicable, the RIDEM equivalent (250-RICR-150-05-1)
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
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5. Threshold value given is the Screening Level for residential tap water with a target hazard quotient (THQ) of 1, as provided in the November 2024 revision of the EPA's Regional Screening Level (RSL) Tables created for assistance in performing Human Health Risk Assessments, except where a more stringent standard from prior Screening Level updates was maintained. The revised standard for cobalt was accepted despite being higher than the November 2021 screening level due to the revised concentration's similarity with prior guidelines.
6. Ambient water quality standard.
7. Ambient water quality standard for selenium was selected from the EPA's 2016 Final Guidance for Aquatic Life Ambient Water Quality Criterion for Selenium. This guidance provides four chronic values that are dependent on site conditions, and the Lotic Water Chronic Criterion has been selected as it appears to be most applicable to site conditions.

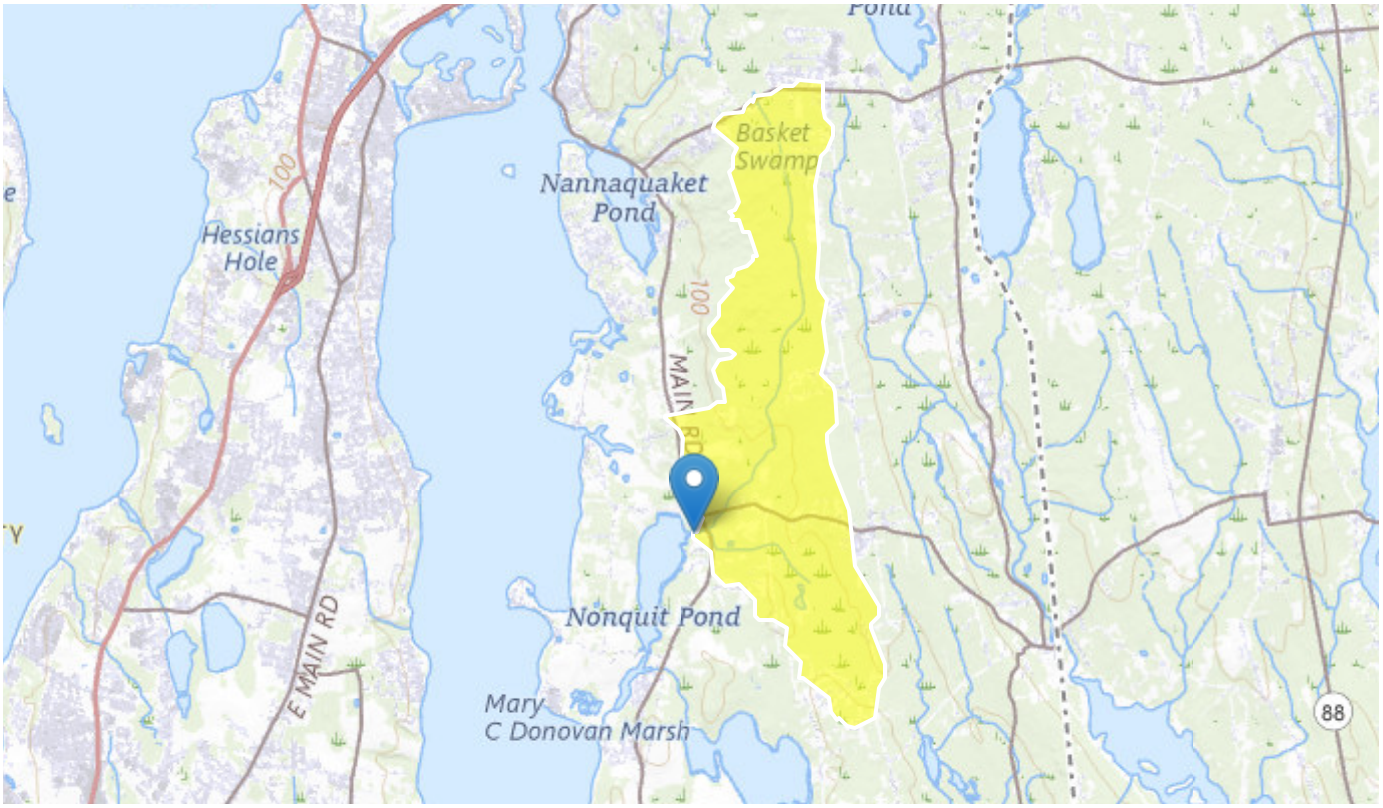
###	Concentration exceeds the applicable Human Health Criteria
###	Concentration exceeds the applicable Freshwater Acute Exposure Criteria
###	Concentration exceeds the applicable Freshwater Chronic Exposure Criteria
###	Concentration exceeds more than one applicable criteria

No threshold value has been provided for parameters not identified in the sources listed above
Aquatic Life criteria provided above from RIDEM Water Quality Regulations or the EPA's National Recommended Water Quality Criteria, Human Health Criteria for Consumption of water and organisms. "--" represents parameters for which no aquatic life criteria has been established.
"O.R." - Threshold value is temperature and/or pH dependent. Temperature and/ or pH was outside of the range for which a threshold value is established.

Attachment D
StreamStats Report – Nonquit Pond

StreamStats Report - Nonquit Pond

Region ID: RI
Clicked Point (Latitude, Longitude): 41.56871, -71.18932
Time: 2026-03-05 10:13:19 -0500



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5.38	square miles
STRDENED	Stream Density -- total length of streams divided by drainage area, edited from NHD	2.81	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Statewide Low Flow 2014 5010]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.38	square miles	0.52	294
STRDENED	Stream Density Edited	2.81	miles per square mile	0.94	3.49

Low-Flow Statistics Flow Report [Statewide Low Flow 2014 5010]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	PIL	PIU
7 Day 2 Year Low Flow	0.185	ft^3/s	0.0404	0.848
7 Day 10 Year Low Flow	0.0405	ft^3/s	0.00524	0.313

Low-Flow Statistics Citations

Bent, G.C., Steeves, P.A., and Waite, A.M.,2014, Equations for estimating selected streamflow statistics in Rhode Island: U.S. Geological Survey Scientific Investigations Report 2014–5010, 65 p. (http://dx.doi.org/10.3133/sir20145010)

Application Version: 4.31.1
SSHydro Services Version: 1.1.1
SSDelineate Services Version: 1.0.1
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1

ATTACHMENT E:
Phosphorous Limit Calculations, Site Hydrology Map, and USGS StreamStats Reports

DEM's Office of Water Resources initiated a Total Maximum Daily Load (TMDL) study to address drinking water and aquatic life use impairments on all nine Newport Water Supply Reservoirs, which includes Nonquit Pond (*Development of Numeric Phosphorous and Chlorophyll-a Targets for the Newport Water Supply Reservoirs*). According to the TMDL study, all nine water supply source reservoirs exhibit degraded water quality, showing moderate to severe nutrient enriched conditions that include elevated levels of Total Phosphorous. The findings from the TMDL study indicated that a seasonal mean total phosphorous concentration of 18 µg/L would be protective of Newport's drinking water reservoirs. Therefore, the **18 µg/L criteria for Total Phosphorous** was used in the benchmark development, rather than 25 ug/L (0.025 mg/L) in a lake, pond, kettlehole, or reservoir (250-RICR-150-05 §1.10(D)) that would be used outside of the TMDL study area.

Since the criteria for Total Phosphorous is applicable to be protective of the drinking water reservoir, the benchmark must be calculated. It is important to note that the benchmark for Total Phosphorous is based on a Total Phosphorous concentration at the point where the stream enters Nonquit Pond. This is different than most permit limit calculations, which are based on pollutant concentrations at the point where the outfall discharges into the receiving water.

To determine the amount of dilution between where the landfill discharges and where the influent to Nonquit Pond is, the United States Geological Survey (USGS) "StreamStats" application was used to determine the 7Q10 flow at the influent to Nonquit Pond. Using StreamStats, the 7Q10 at this point was found to be **0.0405 cubic feet per second (cfs).** This StreamStats report is included in the following pages to this Attachment.

For the landfill discharge, the site's proposed hydrology map (included in this Attachment) was used to calculate a weighted curve number. The proposed hydrology was for the capped landfill, which has been completed. DEM used the Rational Method with a 10-year, 24-hour (Type III) design storm event, as a conservative approach that is protective of water-quality, similar to the use of the 7Q10. The 10-year, 24-hour (Type III) rainfall amount for Newport County (where the City of Tiverton is located) is **4.9 inches,** and can be found in the Stormwater Management, Design, and Installation Rules (250-RICR-150-10-8-6.E). The flow at the facility, calculated using the Rational Method, was found to be **5.75 cfs**. These calculations are also included in this Attachment. A background concentration of 0 mg/L Total Phosphorous is assumed, and an **80% allocation** is used to calculate the benchmark at the point of discharge.

$$Dilution\ Factor = \frac{Flow\ at\ Reservoir\ Inlet\ (StreamStats) + \ Flow\ at\ Facility\ (Rational\ Method)}{Flow\ at\ Facility\ (Rational\ Method)}$$

$$Dilution\ Factor = \frac{0.0405\ cfs + \ 5.75\ cfs}{5.75\ cfs} = 1.007$$

$$Benchmark = Phosphorus\ TMDL\ \times Allocation\ Percentage\ \times Dilution\ Factor$$

$$Benchmark = 18\ {}^{\mu g}/_{L} \times 80\% \times 1.008 = 15\ {}^{\mu g}/_{L}$$

Landfill Runoff Calculation Using the Rational Method

Runoff Equation

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

$$S = \frac{1000}{Curve\ Number} - 10$$

Proposed Site Hydrology Plan

	Area (Acres)	Curve Number
EDA 1	18.1	88
EDA 2	6.39	90
EDA 3	5.93	87
EDA 4	5.7	90
EDA 5	1.55	91
TOTAL AREA	37.67 Acres	
	1,640,905 Square Feet	

Area-Weighted Curve Number	89	unitless	Calculated from Table Above
S	1.29	unitless	Calculated from S equation using Curve Number of 89
P	4.9	inches / day	10-year, 24-hour (Type III) storm for Newport County, RI
Q	3.636	inches /day	Calculated
Runoff Volume	497,195	cubic feet / day	Calculated
	5.75	cubic feet / second	Calculated

PDA-5
Area = 1.46± Ac
CN = 91
Tc = 6.1 MIN

PDA-4A
Area = 1.07± Ac
CN = 87
Tc = 6.8 MIN

PDA-4B
Area = 1.10± Ac
CN = 89
Tc = 5.8 MIN

PDA-1A
Area = 4.02± Ac
CN = 73
Tc = 3.7 MIN

PDA-1
Area = 13.89± Ac
CN = 89
Tc = 12.8 MIN

PDA-4
Area = 1.56± Ac
CN = 88
Tc = 8.7 MIN

PDA-1C
Area = 2.03± Ac
CN = 89
Tc = 4.5 MIN

PDA-2
Area = 5.23± Ac
CN = 91
Tc = 8.1 MIN

PDA-3A
Area = 2.89± Ac
CN = 91
Tc = 7.7 MIN

PDA-1B
Area = 1.26± Ac
CN = 92
Tc = 3.9 MIN

PDA-3
Area = 3.96± Ac
CN = 88
Tc = 20.6 MIN

DETENTION BASIN NO. 1
BIORETENTION AREA NO. 1
SEDIMENT FOREBAY NO. 1
BIORETENTION AREA NO. 3
SEDIMENT FOREBAY NO. 3
SEDIMENT FOREBAY NO. 2
BIORETENTION AREA NO. 2
DETENTION BASIN NO. 2
DETENTION BASIN NO. 3
DETENTION BASIN NO. 4

WETLAND NORTH
WETLAND NORTHWEST
WETLAND SOUTHWEST
WETLAND SOUTH
WETLAND EAST

LEGEND

SOIL BOUNDARY
WATERSHED AREA
TIME OF CONCENTRATION

NOTE:

SITE SOILS WITHIN LANDFILL CAP BOUNDARY MODELED AS HYDROLOGIC SOIL GROUP "D".

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

N

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

Tiverton Landfill Closure

Tiverton, RI

TIMOTHY P. THIES
No. 9054
REGISTERED PROFESSIONAL ENGINEER
7-25-19 (CIVIL)

REVISIONS:

PROJECT NO.:	94139.01
DATE:	JULY 2019
SCALE:	1"=80'
DESIGNED BY:	TCJ
CHECKED BY:	SPD
DRAWN BY:	TCJ
APPROVED BY:	TPT

DRAWING TITLE:

PROPOSED HYDROLOGY

DRAWING NO.: H2.0

SHEET NO. 3 OF 4