RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street, Providence, Rhode Island 02908

July 23, 2021

CERTIFIED MAIL

Mr. Douglas Vigneau, CEP, Env-SP
Environmental Compliance Manager
P.J. Keating Company
998 Reservoir Road
Lunenburg, MA 01462

RE: Final Permit for PJ Keating 875 Phenix Ave. Cranston facility
RIPDES Permit No. RI0023761

Dear Mr. Vigneau:

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified in the attached permit. Also enclosed is the "Response to Public Comments" received on the draft permit and information relative to hearing requests and stays of RIPDES Permits.

In addition, as indicated in the permit Statement of Basis, the DEM is aware that PJ Keating may not be able to immediately comply with certain limitations/conditions in the new permit. Therefore, the DEM is willing to enter into a Consent Agreement with PJ Keating that will establish a compliance schedule for PJ Keating to come into compliance with these requirements. Specifically, the DEM is willing to enter into a Consent Agreement that will include a compliance schedule for PJ Keating to comply with its Total Iron limit for outfall 001 and with its Total Iron, Total Lead, Oil and Grease, and Total Suspended Solids limits for outfall 002. In order for the DEM to be able to enter into a Consent Agreement with PJ Keating, you must file an appeal of the above-mentioned permit requirements.

In order to appeal the permit, you must request an adjudicatory hearing pursuant to §1.50 of the RIPDES Regulations within thirty (30) days of permit issuance (see the attached sheet). Additionally, to obtain a stay of the contested limits for the duration of the appeal, you must also request a temporary stay for the duration of the adjudicatory hearing proceedings in accordance with §1.51 (see the attached sheet).

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Samuel Kaplan of the State Permits Staff at (401) 222-4700, extension 77046 or samuel.kaplan@dem.ri.gov.

Sincerely,

Joseph B. Haberek, PE
Environmental Engineer IV
RIPDES Program

JBH: sk

Enclosures

Ecc: Jonathan R. Olsen, PJ Keating
Michael Vacchi, PJ Keating Cranston
Traci Pena, RIDEM-OWR
Crystal Charbonneau, RIDEM-OWR

Response to Public Comments
PJ Keating Cranston Facility
RIPDES Permit No. RI0023761

The Rhode Island Department of Environmental Management (DEM) solicited public comments on the draft Rhode Island Pollutant Discharge Elimination System (RIPDES) permit for the PJ Keating Cranston facility from May 11, 2021 to June 18, 2021.

The following response addresses the comment that was made by PJ Keating in a letter to DEM dated June 16, 2021.

PJ Keating Comment
PJ Keating indicated its willingness to enter a Consent Agreement with DEM for Total Iron at outfall 001 and for Total Lead, Total Iron, Oil and Grease, and Total Suspended Solids for outfall 002.

DEM Response
In order to enter into a Consent Agreement for the above-referenced parameters, your facility must submit a request for a hearing and a stay request within 30 days of permit issuance, as noted in the cover letter, above, and per the instructions on pg. 4 of today's correspondence.

HEARING REQUESTS

If you wish to contest any of the provisions of this permit, you must request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Mary Dalton, Clerk
Department of Environmental Management
Office of Administrative Adjudication
235 Promenade Street
3rd Floor, Rm 350
Providence, RI 02908

Any request for a formal hearing must conform to the requirements of §1.50 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (RI Code of Regulations; 250-RICR-150-10-1.50).

STAYS OF RIPDES PERMITS

Should the Department receive and grant a request for a formal hearing, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with §1.51 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (RI Code of Regulations; 250-RICR-150-10-1.51), may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberti, P.E.
Administrator of Surface Water Protection
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of §1.50 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (RI Code of Regulations; 250-RICR-150-10-1.50).

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,

P. J. Keating Company
998 Reservoir Road
Lunenburg, MA 01462

is authorized to discharge from a facility located at

P.J. Keating Cranston Facility
875 Phenix Avenue
Cranston, RI 02921

to receiving waters named

an unnamed tributary flowing into Furnace Hill Brook

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

This permit shall become effective on October 1, 2021.

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

This permit supersedes the permit issued on September 23, 2014.

This permit consists of 18 pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 21 day of July, 2021.

Angelo S. Liberti

Angelo S. Liberti, P.E., Administrator for Surface Water
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 001 (Outfall connecting pond #3 and quarry pump to an unnamed stream flowing into Furnace Hill Brook).

   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)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	--- MGD	--- MGD				1/Quarter	Estimate[1]
TSS			25 mg/l		45 mg/l	1/Quarter	Grab[2]
pH			(6.5 S.U.)		(9.0 S.U.)	1/Quarter	Grab[2]
Oil and Grease			--- mg/l		15 mg/l	1/Quarter	Grab[2]
Sulfates			--- mg/l			1/Quarter	Grab[2]
Total Phosphorus			--- mg/l[3]		--- mg/l[3]	1/Quarter	Grab[2]
Nitrate + Nitrite			--- mg/l[3]		--- mg/l[3]	1/Quarter	Grab[2]
Total Nitrogen			--- mg/l		--- mg/l	1/Quarter	Grab[2]
Perchlorate			--- mg/l		--- mg/l	1/Quarter	Grab[2]
Total Iron			0.800 mg/l[3]			1/Quarter	Grab[2]

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

[1]Based on pump rates and pump run times. Average monthly flow should be reported on a quarterly basis as follows: sum the daily flows to outfall 001 and divide by the number of days in the quarter.

[2]The "Grab" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected during the first thirty (30) minutes of a discharge. Samples must be obtained from a discharge of which is the result of a representative storm event that occurs at least seventy-two (72) hours after the previously measurable 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, and shall be a minimum of 0.1 inches per twenty-four (24) hours in magnitude. If it is not practicable to collect the sample during the first 30 minutes, sample must be collected during the first hour of discharge and describe why a grab sample during the first 30 minutes was impracticable.

[3]See Part I.A.6 of the permit

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 002 (stormwater runoff from the eastern portion of the site connecting to Furnace Hill Brook, may also include overflow from pond #4 to Furnace Hill Brook during storms with greater intensity than a 10 year, 24 hour storm):

   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)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	--- MGD	--- MGD				1/Quarter	Estimate
TSS			15 mg/l		23 mg/l	1/Quarter	Grab[2]
pH			(6.5 S.U.)		(9.0 S.U.)	1/Quarter	Grab[2]
Oil and Grease			10 mg/l		15 mg/l	1/Quarter	Grab[2]
Sulfates			--- mg/l			1/Quarter	Grab[2]
Total Phosphorus			--- mg/l[1]		--- mg/l[1]	1/Quarter	Grab[2]
Nitrate + Nitrite			--- mg/l[1]		--- mg/l[1]	1/Quarter	Grab[2]
Total Nitrogen			--- mg/l		--- mg/l	1/Quarter	Grab[2]
Perchlorate			--- mg/l		--- mg/l	1/Quarter	Grab[2]
Total Iron			0.800 mg/l[1]			1/Quarter	Grab[2]
Lead			1.55 ug/l		39.9 ug/l	1/Quarter	Grab[2]

[1]See Part I.A.6 of the permit.

[2]The "Grab" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected during the first thirty (30) minutes of a discharge. Samples must be obtained from a discharge of which is the result of a representative storm event that occurs at least seventy-two (72) hours after the previously measurable 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, and shall be a minimum of 0.1 inches per twenty-four (24) hours in magnitude. If it is not practicable to collect the sample during the first 30 minutes, sample must be collected during the first hour of discharge and describe why a grab sample during the first 30 minutes was impracticable.

3. a. The discharge shall not cause visible discoloration of the receiving waters.

   b. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

4. The permittee shall conduct instream turbidity sampling of the streams at four locations: the first location (location 1) is in the unnamed stream flowing into the Furnace Hill Brook immediately upstream of Outfall 001; the second location (location 1A) is the unnamed stream flowing into Furnace Hill Brook immediately downstream of Outfall 001. The third location (location 2) is in the unnamed stream flowing into Furnace Hill Brook immediately upstream of Outfall 002; the fourth location (location 2A) is the unnamed stream flowing into Furnace Hill Brook immediately downstream of Outfall 002. Instream sampling will consist of turbidity monitoring, at the above-mentioned locations once per quarter when effluent is being discharged. Turbidity sampling shall be undertaken by an independent laboratory hired by the permittee and the results reported in the Annual Comprehensive Site Evaluation Report (Part I.B.5.c.(10)). Turbidity shall be based upon Nephelometric Turbidity Units (NTU's).

5. All existing manufacturing, commercial, mining, and silvicultural dischargers 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 routine or frequent 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 ug/l);

      (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/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 C.F.R. s122.21(g)(7); or

      (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.

   b. 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) Five hundred micrograms per liter (500 ug/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 40 C.F.R. s122.21(g)(7); or

      (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island 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.

6. The permittee shall compare all sampling results to the following benchmark monitoring concentrations. The benchmark concentrations are intended to be generic pollutant levels that, under nearly all scenarios, are protective of water quality standards and are only to be used to evaluate the overall effectiveness of the SWPPP (Storm Water Pollution Prevention Plan – see part I.B). 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)
Nitrate + Nitrite Nitrogen	0.68
Total Phosphorus	2.0

Any quarterly exceedances of the benchmark concentrations shall trigger a reevaluation of the implementation of the existing Storm Water Pollution Prevention Plan (SWPPP) and facility operations to determine if there are possible problems with non-structural BMPs or maintenance that can be corrected. The SWPPP shall be promptly revised in response to these reevaluations and in no case later than thirty (30) calendar days following the receipt of monitoring results that exceed the benchmark concentrations. A report of the permittee's comparison of monitoring results with the benchmark concentrations shall be submitted with each DMR. If the permittee exceeds any of the benchmark concentrations during the monitoring period the report shall include a detailed description of the possible causes of the exceedances or of any significant increases in parameter concentrations, the dates and scopes of inspections, a summary of monitoring results and visual inspections, and any modifications made to the SWPPP to reduce the pollutant levels.

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). If the annual average exceeds the applicable benchmark concentration, then the permittee shall perform a detailed review of all storm water controls, BMPs, SOP's, and maintenance schedules contained in the SWPPP and shall make reasonable amendments to reduce the pollutant levels in the discharge. These amendments shall be submitted to the Department of Environmental Management - Office of Water Resources with the annual Comprehensive Site Evaluation Report required under Part I.B.5.c.(10). 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 storm water 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.

7. There shall be no direct or indirect discharge of asphalt concrete process wastewater pollutants (e.g. effluent from the asphalt baghouse) to receiving water.

8. This permit serves as the State's Water Quality Certificate for the discharges described herein.

9. The discharge of effluent from pond 3 shall be minimized as much as possible.

10. This permit does not authorize the discharge of concrete truck bottle wash water to surface waters.

11. The washing of truck engine compartments and undercarriages is prohibited.

12. The direct or indirect discharge of detergents to surface waters is prohibited.

13. The facility shall maintain a written log of the day, time, duration, and volume of all discharges from pond 3 via outfall 001 and shall submit such information for each quarter in cover letters accompanying Discharge Monitoring Reports (DMR's).

B. STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. Within thirty (30) days from the date of issuance of this permit, P.J. Keating shall submit a revised Storm Water Pollution Prevention Plan (referred to herein as the "SWPPP" or the "Plan") that addresses all of the requirements of this permit, including but not limited to the requirements from Part I.B.5.d-f. This SWPPP shall be subject to DEM review and approval, in accordance with Part I.B.3.

2. The Plan shall be signed by the permittee in accordance with RIPDES Regulations (250-RICR-150-10.1.12) and retained on-site.

3. If the Plan is reviewed by the Director, he or she may notify the permittee at any time that the Plan does not meet one or more of the minimum requirements of this part. After such notification from the Director, the permittee shall make changes to the Plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have thirty (30) days after such notification to make the necessary changes.

4. The permittee shall promptly, and in no case later than thirty (30) calendar days, amend the Plan 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 storm water discharges (based upon exceedances of effluent limitations in Part I.A., exceedances of benchmark concentrations in Part I.A.6, or the results of inspections required in Part I.B.5.c of this permit). Changes must be noted and then submitted to this department. Amendments to the Plan may be reviewed by DEM in the same manner as Part I.B.3. of this permit.

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

   a. Description of Potential Pollutant Sources. The Plan must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water 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 Plan shall include:

      (1) A site map indicating: a delineation of the drainage area of outfalls 001 and 002, each existing structural control measure to reduce pollutants in storm water runoff, locations where significant materials are exposed to

storm water, locations where significant leaks or spills have occurred, a delineation of all impervious surfaces, all surface water bodies, all separate storm sewers, and the locations of the following activities where such areas are exposed to storm water: fueling stations, vehicle and equipment maintenance and/or cleaning areas, material handling areas, material storage areas, process areas, and waste disposal areas;

(2) A topographic map extending one-quarter of a mile beyond the property boundaries of the facility;

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

(4) A narrative description of significant materials that have been treated, stored, or disposed of in a manner to allow exposure to storm water between the time of three (3) years prior to the issuance of this permit to the present; method of on-site storage or disposal; materials management practices employed to minimize contact of these materials with storm water runoff between the time of three (3) years prior to the issuance of this permit and the present; materials loading and access areas; the location and description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and description of any treatment the storm water receives;

(5) A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at the facility three (3) years prior to the effective date of this permit to the present;

(6) 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 RIPDES Rule 11.02(a)(14)(iii)-(v) or 40 CFR 122.21(g)(iii)-(v);

(7) For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an estimate of the types of pollutants, which are likely to be present in storm water associated with industrial activity;

(8) A summary of existing sampling data describing pollutants in storm water discharges from the facility; and

b. Storm Water Management Controls. The permittee must develop a description of storm water management controls appropriate for the facility and implement such controls. The appropriateness for implementing controls listed in the Plan must reflect identified potential sources of pollutants at the facility. The description of storm water management controls must address the following minimum components, including a schedule for implementing such controls:

(1) *Pollution Prevention Team.* The Plan must identify a specific individual(s), by name or title, within the facility organization as members of a team that are responsible for developing the Plan and assisting the plant manager in its implementation, maintenance, and revision. The Plan must clearly

identify the responsibilities of each team member. The activities and responsibilities of the team must address all aspects of facility's Plan.

(2) *Risk Identification and Assessment/Material Inventory.* The Plan must assess the potential of various sources which contribute pollutants to storm water discharge associated with the industrial activity. The Plan must 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 produced, or discharged; the likelihood of contact with storm water, and the history of significant leaks or spills of toxic or hazardous pollutants.

(3) *Preventative Maintenance.* A preventative maintenance program must involve inspection and maintenance of storm water management devices (i.e., oil/water separators, catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.

(4) *Good Housekeeping.* Good housekeeping requires the maintenance of a clean, orderly facility. The permittee must keep all exposed areas of the facility in a clean, orderly manner where such exposed areas could contribute pollutants to storm water discharges. Common problem areas include: around trash containers, storage areas and loading docks. Measures must also include: a schedule for regular pickup and disposal of garbage and waste materials; routine inspections for leaks and conditions of drums, tanks and containers.

(5) *Spill Prevention and Response Procedure:* The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum the permittee must implement a) procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; b) preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling; c) procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the stormwater Pollution Prevention Team (see Part I.B.5.b.1); and d) procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil requires the activation of the facility's response plan, the permittee must notify the DEM and take appropriate action to stop or minimize a release of Hazardous Material posing an Imminent Hazard and/or any on-going spill of Hazardous Material at the time of discovery. Local requirements may necessitate reporting of spills

or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable RCRA regulations at 40 CFR Part 264 and 40 CFR Part 265.

(6) *Management of Runoff.* The permittee must describe the traditional stormwater management practices (permanent structural BMPs other than those which control the generation or source(s) of pollutants that currently exist or that are planned for the facility). These types of BMPs typically are used to divert, infiltrate, reuse, or otherwise reduce pollutants in storm water discharges from the site. All BMPs that the permittee determines are reasonable and appropriate, or are required by a State or local authority; must be implemented and maintained. Factors to consider when the permittee is selecting appropriate BMPs should include: 1) the industrial materials and activities that are exposed to storm water, and the associated pollutant potential of those materials and activities; and 2) the beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters.

Structural measures should be placed on upland soils, avoiding wetlands and floodplains, if possible. Structural BMPs may require a separate permit undersection 404 of the CWA before installation begins.

(7) *Sediment and Erosion Prevention.* The Plan 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.

(8) *Structural Practices.* A description of structural BMPs to divert flows from exposed soils, filter runoff, store flows, or otherwise limit runoff from coming into contact with exposed, unvegetated areas of the site and to prevent sediments and/or other pollutants from leaving the site. Such practices may include: staked hay bales, silt fence, earthen dikes, drainage swales, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rip-rap outlet protection, sediment traps and sediment basins.

(9) *Employee Training:* The permittee must describe the storm water employee training program for the facility. The description should include the topics covered, such as spill response, good housekeeping and material management practices, and must identify periodic dates (e.g., every 6 months during the months of July and January) for such training. The permittee must provide employee training for all employees that work in areas where industrial materials or activities are exposed to storm water, and for employees that are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance people). The employee training should inform them of the components and goals of the SWPPP.

(10) *Visual Inspections.* Qualified plant personnel must be identified to inspect designated equipment and plant 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.

(11) *Recordkeeping and Internal Reporting Procedures.* Incidents such as spills, or other discharges, along with other information describing the quality and quantity of storm water 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.

(12) *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.

(13) *Other Controls:* Off-site Vehicle Tracking of Sediments. Each site shall have graveled access entrance and exit drives and parking areas to reduce the tracking of sediment onto public or private roads.

c. Site Inspection.

(1) Visual inspections of sediment basins (i.e. ponds 1-4) monitoring of sediment basin turbidity must be conducted immediately (within 24 hours) after all rainstorms which produce more than 1" of rainfall, or a minimum of weekly. During periods of continuous rain and/or melting, erosion control measures shall be inspected daily.

(2) The following inspection must be conducted on at least a semi-annual basis: sediment accumulation in all silt ponds must be measured every six (6) months and/or whenever there is a failure of sediment controls. Sediment accumulation must be removed when the sediment depth in the basin reaches 2/3 of the available storage area.

(3) 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.b.2 is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in storm water discharges associated with industrial activity identified in the Plan are being implemented and are adequate. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWPPP for a minimum of five (5) years.

(4) Inspect any straw/hay bale barriers weekly to ensure that the integrity of the barriers have not been breached and to check sediment accumulation. Sediment must be removed from behind the barriers when its accumulation reaches 1/2 the height of the barriers.

(5) Inspect riprap after each major storm event, for the first year after the placement of the riprap, to ensure that stone has not been dislodged and that scouring of the support material has not occurred. If the first year inspections verify the integrity of the riprap placement, inspection frequency can be reduced to annually.

(6) Inspect earthen berms and sediment traps weekly to ensure that the structural integrity of the berms/traps has not been damaged.

(7) Inspect stockpiles of topsoil and earthen materials weekly to ensure that the slopes are no greater than thirty percent (30%), are seeded and stabilized, and are completely encircled by staked hay bales or silt fence.

(8) Inspect outfalls and discharge locations weekly for evidence of a release of sediment or other pollutants to ensure that their structural integrity has not been breached.

(9) Inspect locations where vehicles entrance and exit the site weekly for sediment that has been tracked off site. If there is evidence that sediment has been tracked off site, the permittee shall sweep the paved surfaces and determine if the controls require improvement.

(10) Comprehensive site evaluation: An annual comprehensive site evaluation report must be prepared which summarizes the results of the site inspections, required under Part I.B.5.c, and the turbidity monitoring, required under Part I.A.6. This report must include the names of the personnel who conducted the inspections, any major or recurring observations noted in the inspections, any maintenance preformed on the erosion and sedimentation control measures, a summary of the results of all sediment soundings, and a tabulated summary of all turbidity monitoring. The Annual Comprehensive Site Evaluation report must be submitted to the Department of Environmental Management by January 15 of the following year.

d. Additional Technology – Based Effluent Limits for the Concrete Plant Activities

(1) *Good Housekeeping Measures.* With good housekeeping, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, settled dust, or other significant material in stormwater from paved portions of the site that are exposed to stormwater. Sweep regularly or use other equivalent measures to minimize the presence of these materials. Indicate in the SWPPP the frequency of sweeping or equivalent measures. Determine the frequency based on the amount of industrial activity occurring in the area and the frequency of precipitation, but it must be performed at least once a week if cement, aggregate, kiln dust, fly ash, or settled dust are being handled or processed. The permittee must also prevent the exposure of fine granular solids (cement, fly ash, kiln dust, etc.) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, or buildings, or under other covering.

e. Technology-Based Effluent Limits for Clearing, Grading, and Excavation Activities

(1) *Management Practices for Clearing, Grading, and Excavation Activities.*

(a) *Selecting and installing control measures.* For all areas affected by clearing, grading, and excavation activities, the permittee must select, design, install, and implement control measures that meet applicable effluent limits.

(b) *Good Housekeeping.* Litter, debris, and chemicals must be prevented from becoming a pollutant source in stormwater discharges.

(c) *Retention and Detention of Stormwater Runoff.* For drainage locations serving more than one acre, sediment basins and/or temporary sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the development area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.

(2) *Inspection of Clearing, Grading, and Excavation Activities.*

(a) *Inspection Frequency.* Inspections must be conducted either at least once every 7 calendar days or at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. Inspection frequency may be reduced to at least once every month if the entire site is temporarily stabilized, if runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

(b) *Location of Inspections.* Inspections must include all areas of the site disturbed by clearing, grading, and/or excavation activities and areas used for storage of materials that are exposed to precipitation. Sedimentation and erosion control measures implemented must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of significant off-site sediment tracking.

(c) *Inspection Reports.* For each inspection required above, the permittee must complete an inspection report.

f. Additional Technology-Based Effluent Limits

(1) *Employee Training.* Conduct employee training at least annually.

(2) *Stormwater Controls.* Apart from the control measures the permittee implements to meet the effluent limits, where necessary to minimize pollutant discharges, implement the following control measures at the site. The potential pollutants identified in the SWPPP shall determine the priority and appropriateness of the control measures selected.

(a) *Stormwater Diversions.* Diverting stormwater away from potential pollutant sources. Following are some control measure options: interceptor or diversion controls (e.g., dikes, swales, curbs, or berms); pipe slope drains; subsurface drains; conveyance systems (e.g.,channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents.

(b) *Capping:* When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

(c) *Treatment:* If treatment of stormwater (e.g., chemical or physical systems, oil and water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used.

g. Consistency with Other Plans. Storm water management controls may reflect requirements for Spill Prevention Control and Counter-measure (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.

C. DETECTION LIMITS

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below (the EPA method is noted for reference, other EPA approved methods found in 40 CFR Part 136 may be utilized). 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 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).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

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 submitted along with the monitoring report. 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.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. 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.

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 zeros.

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) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL ug/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		MDL ug/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		MDL ug/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	0.029
17P	heptachlor epoxide	0.040

Pesticides - EPA Method 608		MDL ug/l (ppb)
18P	PCB-1242	0.289
19P	PCB-1254	0.298
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		MDL ug/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 ug/l (ppb)
Antimony, Total	3.0 - EPA Method 204.2[1]
Arsenic, Total	1.0 - EPA Method 206.2[1]
Beryllium, Total	0.2 - EPA Method 210.2[1]
Cadmium, Total	0.1 - EPA Method 213.2[1]
Chromium, Total	1.0 - EPA Method 218.2[1]
Chromium, Hexavalent***	20.0 - Standard Methods 16th Ed., 312.B
Copper, Total	1.0 - EPA Method 220.2[1]
Iron	50
Lead, Total	1.0 - EPA Method 239.2[1]
Mercury, Total	0.2 - EPA Method 245.1[1]
Nickel, Total	1.0 - EPA Method 249.2[1]
Selenium, Total	2.0 - EPA Method 270.2[1]
Silver, Total	0.5 - EPA Method 200.9[1]
Thallium, Total	1.0 - EPA Method 279.2[1]
Zinc, Total	5.0 - EPA Method 289.1[1]
Asbestos	**
Cyanide, Total	10.0 - EPA Method 335.3
Phenols, Total***	50.0 - EPA Method 420.2
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0 - EPA Method 524.2

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL
*** Not a priority pollutant as designated in the 1997 Water Quality Regulations (Table 5)

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.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

D. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in 40 CFR Part 136 unless other procedures are explicitly required in the permit.

2. Reporting

Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

A. Submittal of DMRs Using NetDMR

The permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to DEM electronically using NetDMR per the following schedule:

Quarter Testing to be Performed	Report Due No Later Than	Results Submitted on DMR for
January 1 - March 31	April 15	January 1 - March 31
April 1 - June 30	July 15	April 1 - June 30
July 1 - September 30	October 15	July 1 - September 30
October 1 - December 31	January 15	October 1- December 31

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

B. Submittal of Reports as NetDMR Attachments

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:

- DMR Cover Letters
- Below Detection Limit summary tables

C. Submittal of Reports in Hard Copy Form

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.

A. Annual Comprehensive Site Inspection Report
B. Written notifications required under Part II
C. Notice of unauthorized discharges

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

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

D. 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.

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. RI0023761

NAME AND ADDRESS OF APPLICANT:

P. J. Keating
998 Reservoir Road
Lunenburg, MA 01462

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

P.J. Keating Cranston Facility
875 Phenix Avenue
Cranston, RI 02921

RECEIVING WATER: **unnamed tributary to Furnace Hill Brook (Waterbody ID #: RI0006017R-01)**

CLASSIFICATION: **B**

Table of Contents

I. Proposed Action and Type of Facility

The above-named applicant has applied to the Rhode Island Department of Environmental Management for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is engaged in the mining of crushed stone and gravel, sand and gravel processing, trap rock quarrying, stone processing, and the production of hot-mix asphalt (i.e.bituminous concrete). In addition, the applicant leases a portion of its site for ready-mix concrete production.

The P.J. Keating Cranston facility's most recent RIPDES permit, authorizing discharges from the above-mentioned facility, was issued on September 23, 2014. This permit became effective on October 1, 2014 and expired on October 1, 2019. The facility submitted an application for permit reissuance to the DEM on January 2, 2019. On February 18, 2019 the DEM issued an application complete letter to the facility. In accordance with 250-RICR-150-10-1 §13 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (250-RICR-150-10-1.13), the facility's October 1, 2014 permit remains in effect since the DEM has determined that a timely and complete permit application was submitted. Once this permit is reissued, it will supersede the October 1, 2014 permit.

Depending on weather, full-scale processing operations typically extend from March 15th through December 31st 5 days per week, 12 hours per day. Occasionally, to accommodate short-term delivery schedules, the facility will operate 7 days per week, 24 hours per day. Although the facility continues to function as a supplier of earth products from available stockpiles and concrete during the winter, major processing operations are significantly curtailed due to freezing temperatures. Operations typically suspended include quarrying, stone processing, and processing operations at the asphalt plant.

The Site include the following areas:

Main Office & Quality Control Office - The Main Office and Quality Control (QC) Office are located in the southern portion of the site. The QC Office is used for quality testing and stores a variety of chemicals to perform testing. The office remains open year-round.

Quarry - The quarry is located in the north-central portion of the facility. Stone is separated from the quarry walls by drilling and blasting. The stone is transported from the quarry by truck to the crushers. The materials removed from the quarry are used onsite in the production of asphalt and concrete. The finished materials are also shipped to customers, sold to contractors, or used by P.J. Keating for off-site projects.

Crushers - Stone is crushed and sorted into various sized grades at the primary, secondary, and tertiary crushers on the southwestern edge of the quarry. The rock is first processed by the primary crusher to the south-west of the quarry. Further processing of the rock occurs at the secondary crusher located to the south of the primary crusher. Final processing of the rock takes place at the two tertiary crushers located southeast of the secondary crusher. Rock crushers are equipped with spray bars and spray nozzles for dust control.

Wash Plant - At the wash plant, crushed stone is transported by conveyors to the wash tower, where the stone is then dropped onto vibrating multiple deck wash screens. The screens are situated under wash water spray heads and are used to segregate stone aggregate. Water is supplied to the wash plant from Basin 3. Sand and fine sediments are washed from the screens to the lower level of the plant. Clean gravel/construction aggregate separated by the screens is transferred by an output conveyor to be stockpiled. The washed stone is stored onsite until sold or used at the on-site asphalt and/or concrete plants.

Asphalt Plant - P.J. Keating's bituminous concrete plant (also known as a "hot mix asphalt plant") is located in the central portion of the site. The plant has the capacity to produce 200 tons of bituminous concrete per hour. Bituminous concrete is a heated mixture of well graded aggregate (crushed stone and sand) and liquid asphalt. Liquid asphalt is delivered to the site via tank truck and stored in a vertical approximately 20,000

gallon Aboveground Storage Tank (AST). This tank is located in a concrete secondary containment structure on the north side of the asphalt plant. No. 2 on-spec used oil is stored in an AST that is located in the concrete secondary containment structure to the north of the asphalt plant. The used oil is supplied to heat the aggregate dryer burner via aboveground piping that connects the tanks to the asphalt plant. The burner is used to dry the aggregate materials prior to mixing with the liquid asphalt. Natural gas is also used as a fuel supply to the aggregate dryer burner. A hot oil reservoir (located in the compressor room) circulates the hot oil through coils in the asphalt tanks and pipes to maintain them at an elevated temperature. A biodegradable release agent is applied to asphalt delivery trucks before loading to reduce the adherence of product on the truck bed. The release agent station is located north of the oil storage tanks, and the release agent is stored in a tank. Overspray and storm water collected in the area of the release agent station ultimately drains to Basin 1 A.

Vehicle Rinsing Area - Vehicle rinsing takes place north of Basin 1 A. The rinsing area consists of a pump from one of the on-site basins and a hose connection that allows for a water spray used to remove dust and dirt from the vehicles. Vehicle rinse water drains by gravity into Basin 1 A or infiltrates into the ground. P.J. Keating does not allow for the washing of truck engine compartments and undercarriages or the direct or indirect discharge of detergents to surface waters.

Maintenance Garages (#1 and #2) - The Maintenance Garages are located to the north and south of the scales. The area is used for the storage of tanks, drums, and miscellaneous equipment and parts. The Garage includes a waste oil AST and various mobile equipment related oils.

Quarry Garage/Weld Shop - The Quarry Garage is located directly next to the QC Office. The garage stores several 55-gallon drums.

Vehicle Fueling Areas - P.J. Keating maintains one 4,000 gallon gasoline double-walled AST and one 12,000 gallon diesel AST in containment. The tanks are located to the north of the QC Office. The ASTs are equipped with fuel dispensers to provide fuel for P.J. Keating trucks and equipment.

Aggregate Storage Areas - Aggregate materials are stockpiled in various locations throughout the facility. The main stockpile area is generally located in the central portion of the site. From this location, materials are taken off-site by truck or loaded directly into bins for use in making hot-mix asphalt and/or concrete.

Silt and Recycled Asphalt Pavement Stockpile Area - Silt and Recycled Asphalt Pavement (RAP) are stockpiled in the northeastern portion of the site. RAP and shingle crushing is performed by an independent contractor in the area of the RAP stockpiles. Silt is also stockpiled along the western edge of the Quarry.

Transformers - Eight transformers are located at the Cranston facility. The transformers are located on concrete pads and each contain between 100-500 gallons of dielectric fluid.

Concrete Plant and Washout Area - P.J. Keating leases a portion of its land to, a ready-mix concrete batch processing facility. The ready-mix concrete plant is located north of Garage #1. Concrete is formed from the mixture of water, cement, and sand and stone aggregate. In addition, various concrete admixtures are combined in the tilter mixer according to job specifications. These admixtures are stored in outdoor tanks ranging from 500 - 1,000 gallons. Concrete trucks returning to the facility may not have used all of the concrete at the designated construction projects and, therefore, may be partially full. The excess material is poured into forms to create concrete blocks. The trucks are then rinsed with water and emptied into a wash-out pit in the northern corner of the facility.

A site plan of the facility and process diagrams for outfalls 001 and 002 and are shown in Attachments B, C, and D.

II. Description of Discharge

The discharges from the site consist of quarry dewatering water, stormwater, and stormwater commingled with process water. Process water includes wash plant spray water drainage, dust control water, biodegradable release agent overspray, and external vehicle wash water that does not contain detergents. The permit is written with provisions to ensure that stormwater commingled with process water is discharged at a frequency of less than the 10-year 24-hour storm.

A quantitative description of the discharge in terms of significant effluent parameters based on Discharge Monitoring Data (DMR) data from October 2014 to June 2020 is shown on Attachment A. Based upon a review of available effluent data submitted with the most recent permit application and historical DMR data, the facility may not be able to comply with final permit limits at Outfall 001 for Total Iron and may not be able to comply with final permit limits at Outfall 002 for Total Iron, Total Suspended Solids, and Total Lead. In addition, since Oil and Grease limits are new for Outfall 002, a compliance determination could not be made for this pollutant. It is anticipated that a Consent Agreement will be necessary in order to establish interim limits and a schedule that will provide time for the P.J. Keating Cranston facility to bring the discharge into compliance with these limitations.

Outfall 001

There are five (5) ponds (also referred to as basins) at the facility, numbered 1A, 1B, 2, 3, and 4. Water is pumped from pond #3 to the stone wash plant. The effluent stream from the stone wash rack flows into ponds 1A and 1B which overflow to pond 2, which then overflows back into pond 3. Stone Plant storm water flows into Pond 4, which is pumped during large storm events into Pond 3. (During smaller storm events, Pond 4 infiltrates and does not have a discharge). Pond 3 also receives overland stormwater flow from the quarry. Quarry dewatering water can be directed into pond 3 to maintain the water level or directed to outfall 001 directly if Pond 3 is full. Excess water from Pond 3 is discharged to outfall 001 by the use of a pump. A gate valve is used to control the direction of pumped water. Based on modeling performed by P.J. Keating, pond 3 will not overflow during a 10 year, 24 hour storm event. Therefore, based on the 10-year, 24-hour storm, outfall 001 will only contain stormwater from the quarry. Outfall 001 is pumped into an unnamed stream that eventually flows into Furnace Hill Brook. Some water from pond 3 is also used for dust control.

Outfall 002

Outfall 002 receives stormwater runoff and dust control runoff from the eastern portion of the site, including stormwater runoff from the vehicle maintenance / fuel area, stormwater from recycle material, stormwater from the concrete plant, and stormwater from the asphalt plant which flows into catch basins which discharges into a stone filter swale that flows to outfall 002. Some stormwater from the asphalt plant flows directly via sheet flow to the stone filter swale, as does stormwater from the stone processing plant.

Treatment of process water entering exiting outfall 001 consists of treating water discharged into pond 3 with silt curtains. In addition, ponds 1A, 1B, 2, 3, and 4 are dredged periodically. Quarry dewatering water discharged via outfall 1 is not treated.

The water body segment for the unnamed tributary flowing into Furnace Hill is Waterbody ID #: RI0006017R-01 and is located in western Cranston, Rhode Island. This segment is not listed on DEM's 2016 303(d) impaired waters list. This waterbody is designated as a coldwater habitat for fisheries and has a Waterbody Classification of B. Class B waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.

III. Permit Limitations and Conditions

The final effluent limitations and monitoring requirements may be found in the permit.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

Variances, Alternatives, and Justifications for Waivers of Application Requirements

No variances or alternatives to required standards were requested or granted.

Permit Limit Development

The requirements set forth in this permit are from the State's Water Quality Regulations (250-RICR-150-05-1) and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System (250-RICR-150-10-1), 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).

Development of RIPDES permit limitations is a multi-step process consisting of: determining if Federal effluent guidelines apply; calculation of allowable water quality-based discharge levels based on background data and available dilution; assigning appropriate Best Professional Judgement (BPJ) based limits; comparing existing and proposed limits; comparing discharge data to proposed limits; performing an antidegradation/antibacksliding analysis to determine the final permit limits; and developing interim limits as appropriate.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or the State for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

Stormwater and Process Water Separation

Since the P.J. Keating facility has both stormwater and intermittent discharges of process wastewater, an individual permit was developed which incorporated both effluent limitations and benchmarks for certain parameters. Previous permits for this facility, consisted of an effort to realize the following four goals:

1. eliminate the discharge of process water discharges
2. separate stormwater flow and process water flow as much as possible
3. minimize the impact of stormwater discharges through the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP)
4. minimize the magnitude and impact of the discharge of effluent containing process water

P.J. Keating took the following steps to address the above goals:

1. *Eliminate the discharge of process water discharges:* P.J. Keating's initial submission of a permit application in March of 2006 included the discharge of a process water stream from an on-site asphalt baghouse. DEM determined that this discharge is prohibited under federal effluent guidelines and P.J. Keating subsequently eliminated the asphalt baghouse discharge. This permit does not authorize discharges from the asphalt baghouse.
2. *Separate stormwater flow and process water flow as much as possible:* P.J. Keating installed a pump that is capable of pumping water from pond 4 to pond 3 such that pond 4 does not overflow to outfall 002 except in storms greater than the 10 year 24 hour storm.
3. *Minimize the impact of stormwater discharges through the development and implementation of a SWPPP:* P.J. Keating developed a SWPPP that contains documentation of practices that P.J. Keating must abide by to minimize the impact of stormwater leaving the site. The latest version of the facility's SWPPP which the RIPDES Program has on file is dated July 2019.
4. *Minimize the magnitude and impact of the discharge of effluent containing process water:* P.J. Keating developed a model of the stormwater at the site which calculated that the facility would not need to discharge effluent containing process water during a 10 year 24 hour storm. Standard operating procedures (SOP's) and best management practices (BMP's) were developed for pond 3's discharge which aim to minimize pollution from pond 3 when pond 3 discharges. SOP's included the field testing of pond 3 water for pH, Oil and Grease, and turbidity prior to discharge, with prohibitions for the discharge of effluent when

limitations for parameters are exceeded, and with testing results being recorded in the SWPPP. DEM required P.J. Keating to implement the following two BMPs on a permanent basis:

a. installation of a silt curtain prior to the pump house in pond 3
b. installation of a silt curtain in pond 4 prior to discharge of pond 4 water to pond 3

Technology-Based Requirements

pH:

The Effluent Guidelines for the Mineral Mining and Processing Point Source Category located at 40 CFR Part 436 establish limitations for pH for effluent discharged in conjunction with mine dewatering associated with sand and gravel production as 6.0-9.0 standard units. However, Rhode Island's water quality criteria from the Rhode Island Water Quality Regulations (250-RICR-150-05-1) are more stringent, so limitations for outfall 001 and 002 are based on the Rhode Island water quality criteria (6.5-9.0).

The effluent guidelines for the asphalt concrete subcategory located at 40 CFR Part 443.25 prohibit the discharge of asphalt concrete process water. Therefore, this permit does not authorize the discharge of asphalt plant baghouse wastewater since it meets the definition of "process wastewater" and is a prohibited discharge under 40 CFR Part 443.25. This prohibition is made in Part I.A.7. of the permit.

Additional Technology-Based Requirements

The technology-based conditions listed in Part I.B.5.d-f. of the permit are based on and consistent with the 2019 RIPDES Multi-Sector General Permit for Industrial Stormwater. The technology-based limits included in this section of the permit consist of control measures to prevent or reduce pollution of stormwater. The permittee is required to select, design, install, and implement site-specific control measures to meet these technology-based limits.

Water Quality-Based Requirements

Water Quality-Based Limit (WQBEL) Calculations:

The allowable effluent limitations were established on the basis of acute and chronic aquatic life criteria and human health criteria using the following: available instream dilution; an allocation factor; and background concentrations when available and/or appropriate. The aquatic life and human health criteria are specified in the Rhode Island Water Quality Regulations (250-RICR-150-05-1). Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations. Details concerning the calculation of potential permit limitations, selection of factors, which influence their calculation, and the selection of final permit limitations are included below or in the attached documents.

Mixing Zones and Dilution Factors

During the permit development process for the 2009 permit, RIDEM evaluated data for Furnace Hill Brook gathered from the United States Geological Survey (USGS) for the years 1965 through 1974 (the only years for which streamflow data was available). Daily streamflow data was analyzed using the DFLOW software package to yield the following streamflow parameters: 7Q10, seasonal 7Q10, and harmonic flow. The 7Q10 flow is the lowest 7-day average flow that occurs (on average) once every 10 years. Seasonal 7Q10 flows represent the 7Q10 flows for the months of June through October and for the months of November through April. Harmonic flow is used to evaluate human health impacts. The following streamflow values were found using DFLOW:

- 7Q10 flow: 0 CFS (cubic feet per second)
- Summer 7Q10 flow (May-October): 0 CFS

- Winter 7Q10 flow (November-April): 0 CFS
- Harmonic flow: 0.520 CFS

Mixing for PJ Keating's discharge to the unnamed stream flowing into Furnace Hill Brook is assumed to be instantaneous and complete. Therefore, the whole flow of the river at critical flow conditions is used when calculating limits and accounting for dilution.

A dilution factor of 1 was used for this facility due to the 7Q10 flow (the average flow over 7 days when flow are at a 10-year low) being 0.

The Rhode Island Water Quality Regulations at 250-RICR-150-05-1.18(N)(1) require in-stream concentrations of discharged pollutants to be determined by specific formulas, or other methods which may be found to be acceptable. These formulas require the use of the seven-day, 10 year, low flow of the receiving stream immediately upstream of the discharge to be used in calculating the concentrations of discharged pollutants for the purpose of developing RIPDES permit conditions. This 7Q10 value is protective of water quality standards under critical flow conditions.

Using the upstream 7Q10 river flow of 0 cfs (for aquatic life criteria) and a mean harmonic flow of 0.520 cfs (for human health criteria) the appropriate dilution factors were determined. Using the facility's design flow of 2.672 MGD (4.134 cfs), a water quality dilution factor of 1 for acute and chronic criteria and a human health dilution factor of 1 were calculated using the following equation:

$$DF = \frac{Q_D + Q_U}{Q_D}$$

Where: DF = Dilution Factor
Q_D = Design Flow
Q_U = Flow upstream of the WWTF (Receiving Water Flow)

An exception to these dilution factors was made for Ammonia limitations. Ammonia removal is strongly dependent on temperature (nitrification rate decreases as temperature decreases). Since Ammonia does not bioaccumulate or accumulate in sediment, seasonal dilution factors and historical pH and temperature background data were used to determine the appropriate Ammonia limitations. A winter 7Q10 river flow of 0 cfs was used to yield a dilution factor of 1 and a summer 7Q10 of 0 cfs used to give a dilution factor of 1. In addition, for toxicity-based ammonia limitations, the Water Quality Regulations (250-RICR-150-05-1) include Ammonia criteria, which are dependent on both pH and temperature. In the absence of site-specific data on the receiving water, the DEM evaluated USGS data for all freshwater rivers in the state for the 1999 water year to determine an appropriate assumption for the temperature. This evaluation resulted in the conservative assumptions of winter and summer water temperatures of 15oC and 26oC, respectively. Site-specific pH data was available from water quality sampling performed by DEM, and a 90th percentile value pH of 7.538 was calculated and was used to calculate Ammonia criteria. Early life stages of brook trout, a salmonid, are present in the Furnace Hill Brook. Therefore, Ammonia criteria for early life stages present were used to evaluate potential permit limits for Ammonia. The pH of 7.538 and summer temperature were used to determine the acute, with salmonids present, and chronic criteria for Total Ammonia Nitrogen of 12.758 mg N/L and 2.0116 mg N/L, respectively. The pH and winter temperature were used to determine the acute and chronic criteria for Total Ammonia Nitrogen of 12.578 mg N/L and 4.0244 mg N/L, respectively.

Hardness:

A 90th percentile hardness value of 67.9 mg/L was calculated using 3 data points gathered by DEM in 2016 as part of DEM's Ambient River Monitoring Program.

Using the above dilution factors and hardness, the allowable discharge limits were calculated as follows:

Background concentration unknown or available data is impacted by sources that have not yet achieved water quality-based limits.

$$Limit_{\,l} = (DF) * (Criteria) * (80\%)$$

Where: DF = acute or chronic dilution factor, as appropriate

No background data was available for parameters other than pH and hardness since the time that the 2014 permit was reissued.

The formulas and data noted above were applied with the following exceptions:

1. Pollutants that, based on the acute and chronic dilution factors, have a higher allowable chronic limit than allowable acute limit. For this situation, both the "Monthly Average" and "Daily Maximum" limits were set at the allowable acute limit.

2. Total residual chlorine. The limits for total residual chlorine (TRC) were established in accordance with the RIDEM Effluent Disinfection Policy. The "Monthly Average" and "Daily Maximum" were based on a 100% allocation, a zero background concentration, and the appropriate dilution factor(s). The 100% allocation factor for TRC was used due to the non-conservative nature of chlorine and the improbability of the receiving water having a detectable background TRC concentration.

3. Pollutants with water quality based monthly average limits in the previous RIPDES permit. The relaxation of monthly average limits from the previous permit was restricted in accordance with the antibacksliding provisions of the Clean Water Act and the Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations (250-RICR-150-05-1.20).

Based on the above dilution factors and the freshwater aquatic life and non-Class A human health criteria, from the Rhode Island Water Quality Regulations, allowable discharge concentrations were established using 80% allocation and 100% allocation of total residual chlorine (TRC) due to the fact that Chlorine is not expected to be found in ambient water and it is a non-conservative pollutant.

In accordance with 40 CFR Part 122.4(d)(1)(iii), it is only necessary to establish limitations for those pollutants in the discharge which have the reasonable potential to cause or contribute to the exceedance of the in-stream criteria. In order to evaluate the need for permit limitations, the allowable discharge levels (permit limits) were compared to DMR data and data provided in the permit application. An assessment was made to determine if limits were necessary, using the data collected during the previous five (5) years.

Although listed as "believed present", the January 2, 2019 permit reapplication included data indicating that Arsenic, Lead, Benzene, Toluene, Benzo(ghi)perylene, and Naphthalene were below detection in outfall 001. Therefore, water quality-based limits were not required for these pollutants since there was no "reasonable potential" for these parameters. In addition, the January 2, 2019 permit reapplication indicated that Iron, Arsenic, Lead, Benzene, Toluene, Benzo(ghi)perylene, and Naphthalene were believed present in the effluent for outfall 002. However, water quality monitoring for outfall 002 listed on the January 2, 2019 permit application indicated that these parameters were below detection with the exception of Lead and Iron. Therefore, water quality-based limits were not required for these pollutants, with the exception of Lead and Iron, since there was no "reasonable potential" for these parameters.

Since, based on a review of the analytical data included in the 2019 application and in DMRs, there was reasonable potential for these pollutants to cause or contribute to an exceedance of water quality criteria, monthly average limits for Iron were added to the permit for outfalls 001 and 002 (note: there is no daily maximum limit because there is no acute criteria for iron in the RI water quality regulations). Similarly, monthly average and daily maximum limits were added for Lead at outfall 002 due to the existence of reasonable potential at this outfall.

Benchmarks for Total Iron of 1.0 mg/L had been incorporated into monitoring for outfalls 001 and 002 for the 2014 permit for PJ Keating's facility based on the MSGP specifies benchmarks for the Concrete and Gypsum Product Manufacturing subcategory. However, given that permit limits have

been implemented for Total Iron, benchmark values have been eliminated for Total Iron.

Water quality calculations used to develop this permit and an identification of reasonable potential can be found in Appendix E.

Best Professional Judgement

Flow Monitoring:

The facility's design flow of 2.672 MGD was calculated by adding the maximum daily flow rate for outfalls 001 and 002 listed on the permit application. However, no limitations were placed on average monthly flow or maximum daily flow for either outfall, in order to permit stormwater flow, which is variable. Flow monitoring is called for both outfalls.

Sulfates:

Sulfates are found in both effluent streams, so monitoring of Sulfates is called for in the permit, as it is inherent in Ready-mix product formulations. Since there are no technology-based guidelines listed in either the Mineral Mining or Cement Manufacturing Point Source Category, the proposed monthly average Total Sulfate monitoring requirements for Outfalls 001 and 002 is based on BPJ.

Oil and Grease:

The Rhode Island Water Quality Regulations prohibit the discharge of visible oil and grease into receiving water. The 15 mg/l daily maximum Oil and Grease limit is equivalent to the new source performance standard that the Environmental Protection Agency (EPA) has established for most industrial groups. This standard represents the level of control achievable by the best available demonstrated control technology, process, operating method, or other alternative for the removal of oil and grease. This limit is also consistent with the American Petroleum Institute (API) oil/water separator guidelines and is consistent with the limits that DEM typically assigns to discharges of storm water and is treated through an oil/water separator. This limit, which DEM had originally assigned to Outfall 001 in the 2009 RIPDES permit based upon Best Professional Judgement, has been maintained for Outfall 001 due to Antibacksliding/Antidegradation.

In addition, a monthly average limit of 10 mg/L for Oil and Grease has been added to Outfall 002 due to the presence of the asphalt plant in the drainage area for outfall 002 at the Cranston site and to be consistent with the monthly average limit for Oil and Grease for a NPDES permit issued by EPA Region I for a PJ Keating site in Acushnet, Massachusetts, . The 10 mg/L limit for Oil and Grease is based upon the limits in EPA's 2000 Multi-Sector General Permit for Stormwater Associated with Industrial Activity for SIC (Standard Industrial Classification) Code 2951 (Asphalt Paving Mixtures and Blocks). A daily maximum Oil and Grease limit of 15 mg/L and was added to Outfall 002 for the Cranston permit due to this outfall receiving discharges from vehicle maintenance and fueling areas, and in order to be consistent with outfall 001 and to be consistent with the monthly average Oil and Grease limit in the EPA Region I permit for PJ Keating's Acushnet, Massachusetts facility.

Phosphorus:

The Rhode Island Water Quality Regulations (250-RICR-150-05-1) only contain total phosphorus numeric water quality criteria for lakes, ponds, kettle holes, reservoirs, and any tributaries at the point where they enter such bodies of water but do not contain total phosphorus numerical criteria for flowing water bodies. The freshwater narrative criteria for nutrients is found in 250-RICR-150-05-1.10.D.1 which states that nutrients shall not be present "in such concentration that would impair any usages specifically assigned to said Class, or cause undesirable or nuisance aquatic species associated with cultural eutrophication". The Water Quality Regulations (250-RICR-150-05-1.10.D.1) also require that "Phosphates shall be removed from existing discharges to the extent that such removal is or may become technically and reasonably feasible." However, EPA has produced several guidance documents, which contain recommended total phosphorus criteria for flowing water bodies. The 1986 Quality Criteria of Water ("the Gold Book") recommends in-stream

phosphorus concentrations of 0.1 mg/l for any stream not discharging directly to lakes or impoundments.

During the permit reissuance process for the Wastewater Treatment Facilities located on the Pawtuxet, the DEM evaluated the nutrient levels in the Meshanticut Brook. This evaluation did not identify the Meshanticut Brook as being a significant source of Phosphorus to the Pawtuxet, nor did the Meshanticut Brook show evidence of excessive algal growth. Therefore, the DEM has decided to implement a benchmark for Total Phosphorus for outfalls 001 and 002 rather than a water quality-based limit, for the following reasons: The frequency of a discharge of pond 3 water from outfall 001 will take place less frequently than the 10 year 24 hour storm, so the episodic discharges of process water from outfall 001 are said to be minimal; water quality sampling of both outfalls performed by the facility and reported in its permit application dated January 2, 2019 indicated that Phosphorus levels were below 2.0 mg/l for both outfalls and the unnamed stream is not a major contributor to the Pawtuxet River. For these reasons, the DEM has decided to maintain a benchmark of 2.0 mg/l for Total Phosphorus (taken from the Multi-Sector Stormwater General Permit).

Total Suspended Solids (TSS):

TSS limits for outfall 001 have been maintained at 25 mg/L monthly average and 45 mg/L daily maximum. These limits are consistent with effluent limitations for mine dewatering discharges for Sector J (Non- Metallic Mineral Dressing and Mining) in RIDEM's 2019 RIPDES Multi-Sector General Permit (MGSP) for Industrial Stormwater.

EPA Region I's NPDES permit for P.J. Keating's Acushnet, Massachusetts facility contained 23 mg/L maximum daily TSS limits and 15 mg/L monthly average limits for both outfalls at that facility. The basis for these limits were EPA's 2000 Multi-Sector General Permit for Stormwater Associated with Industrial Activity for SIC (Standard Industrial Classification) Code 2951 (Asphalt Paving Mixtures and Blocks). EPA maintained those limits in the latest permit for the Acushnet facility which was issued in 2020. Therefore, TSS limitations of 23 mg/L and 15 mg/L were written into the Cranston permit for outfall 002 because of the presence of an asphalt plant in the drainage area for outfall 002. These TSS limits are more stringent than the 100 mg/L TSS benchmark from the Multi-Sector Stormwater General Permit. Therefore, there is no need to apply a TSS benchmark in this permit. DEM anticipates that PJ Keating may have difficulty meeting the new lower limit of 15 mg/L for TSS at outfall 002. Therefore, DEM is willing to enter into a compliance schedule with PJ Keating for TSS for outfall 002.

Turbidity:

In-stream turbidity monitoring upstream and downstream of each outfall was written into the permit in section I.A.4 of the permit.

Nitrate + Nitrite:

Benchmarks for Nitrate + Nitrite Nitrogen of 0.68 mg/l are incorporated into monitoring for outfalls 001 and 002 based on the MSGP specifies such benchmarks for the Sand and Gravel Mining Activities. These pollutants are believed present due to the presence of Nitrogen-containing compounds as a result of rock blasting performed at that facility.

Perchlorate:

Although PJ Keating doesn't use perchlorate as a blasting agent, perchlorate may still be present as an impurity in nitrogen-based blasting compounds, along with other potential impurities. Therefore, since P.J. Keating uses nitrogen-based explosives, the permit has established a quarterly, monitor-only requirement for perchlorate for outfalls 001 and 002 in conjunction with monitoring for Total Nitrogen. Perchlorate Monitoring was also integrated into the permit EPA Region I drafted for PJ Keating's Acushnet facility.

WET Testing:

No WET testing is being required in the permit because the existing and new permit conditions and permit limits are protective of the receiving water.

Nutrients:

As noted above, permit monitoring for Nitrogen has been added to the permit draft due to the expectation that Nitrogen may be in water discharged from the quarry due to the use of blasting compounds. And as noted above, Phosphorus monitoring has been maintained and benchmarks for Phosphorus will be used to evaluate Phosphorus monitoring results.

Antibacksliding:

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 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. The Office 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

[1] SRPWs are surface waters identified by the Director as having significant recreational or ecological uses.

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 previously 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 water body 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."

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:

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

[2] ONRWs are a special subset of high-quality water bodies, identified by the State as having significant recreational or ecological water uses.

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

In this permit, all monthly average limitations are either the same as or more stringent than the limits in the 2014 permit. Therefore, the limits contained in this permit are consistent with the Department's anti-degradation policy.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

V. 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. 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 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, provided oral testimony, 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 250-RICR-150-10-1.50 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

Table I. Proposed Permit Limits – Outfall 001

Outfall 001 (Outfall connecting pond #3 and quarry pump to an unnamed stream flowing into Furnace Hill Brook).

Effluent Characteristic	Monthly Average Permit Limit	Daily Max Permit Limit	Sampling Frequency
Flow	--- MGD	--- MGD	1/Quarter
TSS	25 mg/L	45 mg/L	1/Quarter
pH	(6.5 S.U.)	(9.0 S.U.)	1/Quarter
Oil and Grease	---mg/L	15 mg/L	1/Quarter
Sulfates	--- mg/L		1/Quarter
Total Phosphorus	--- mg/L	--- mg/L	1/Quarter
Nitrate+Nitrite	--- mg/L	--- mg/L	1/Quarter
Total Nitrogen	--- mg/L	--- mg/L	1/Quarter
Perchlorate	--- mg/L	--- mg/L	1/Quarter
Total Iron	0.800 mg/L		1/Quarter

() Values in parentheses represent the minimum and maximum values.

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

[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.

Table II. Proposed Permit Limits – Outfall 002

Outfall 002 (stormwater runoff from the eastern portion of the site connecting to Furnace Hill Brook, may also include overflow from pond #4 to Furnace Hill Brook during storms with greater intensity than a 10 year, 24 hour storm)

Effluent Characteristic	Monthly Average Permit Limit	Daily Max Permit Limit	Sampling Frequency
Flow	--- MGD	---MGD	1/Quarter
TSS	15 mg/L	23 mg/L	1/Quarter
pH	(6.5 S.U.)	(9.0 S.U.)	1/Quarter
Oil and Grease	10 mg/L	15 mg/L	1/Quarter
Sulfates	--- mg/L		1/Quarter
Total Phosphorus	--- mg/L	--- mg/L	1/Quarter
Nitrate+Nitrite	--- mg/L	--- mg/L	1/Quarter
Total Iron	0.800 mg/L		1/Quarter
Total Nitrogen	--- mg/L	--- mg/L	1/Quarter
Perchlorate	--- mg/L	--- mg/L	1/Quarter
Lead	1.55 ug/L	39.9 ug/L	1/Quarter

() Values in parentheses represent the minimum and maximum values.

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

VI. 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:

Samuel Kaplan, P.E., Environmental Engineer II
Department of Environmental Management/ Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, ext: 77046
Email: samuel.kaplan@dem.ri.gov

5/7/2021
Date

Joseph B. Haberek, P.E.
Environmental Engineer IV
RIPDES Program
Office of Water Resources
Department of Environmental Management

Appendix A – Historical Discharge Data

Data is from October of 2014 to June of 2020.

DESCRIPTION OF DISCHARGE: Outfall connecting pond #3 and quarry pump to an unnamed stream flowing into Furnace Hill Brook
DISCHARGE: 001

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE

PARAMETER	**AVERAGE**	**MAXIMUM**
pH	7.3	8.17
PARAMETER	**AVERAGE**	**MAXIMUM**
Flow (gal/day)	440,000	1,720,800
TSS (mg/L)	5.9	5.9
Oil and Grease (mg/L)	0.8	0.8
Sulfates (mg/L)	57.7	
Total Phosphorus (mg/L)	0.02094	0.0294
Nitrate + Nitrite (mg/L)	6.03	6.03
Total Iron (mg/L)	0.583	0.583

DESCRIPTION OF DISCHARGE: Stormwater runoff from the eastern portion of the site connecting to Furnace Hill Brook, may also include overflow from pond #4 to Furnace Hill Brook during storms with greater intensity than a 10 year, 24 hour storm

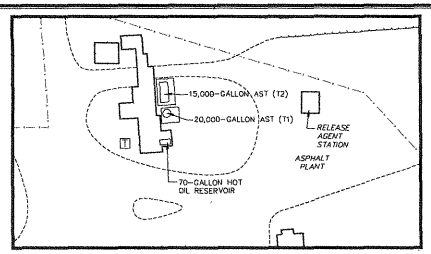
DISCHARGE: 002

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE

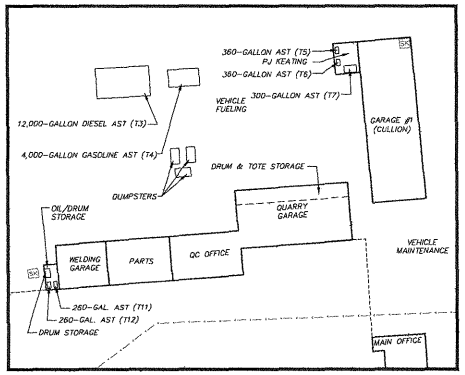
PARAMETER	**AVERAGE**	**MAXIMUM**
pH	7.2	8.4
PARAMETER	**AVERAGE**	**MAXIMUM**
Flow (gal/day)	964,900	2,790,100
Nitrate + Nitrite (mg/L)	4.794	4.794
TSS (mg/L)	23.71	23.71
Sulfates (mg/L)	60.47	
Total Phosphorus (mg/L)	0.0468	0.0468
Iron (mg/L)1.48681.4868		

Appendix B: Site Map

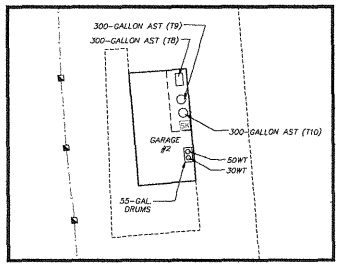
See next page



INSET A
1"=40'



INSET B
1"=40'



INSET C
1"=40'

REV.	DESCRIPTION	APP'D	DATE
-	-	-	-

TABLE 1
P.J. Keating Company – Cranston, RI Facility
Summary of Aboveground Petroleum Storage

Map No.	Tank Location	Product	Approx. Shell Capacity	Tank Type
T1	Asphalt Plant	Liquid Asphalt	20,000 gal.	SW Steel
T2	Asphalt Plant	No. 2 On-Spec Used Oil	15,000 gal.	SW Steel
T3	Vehicle Fueling Area	Diesel Fuel	12,000 gal.	SW Steel
T4	Vehicle Fueling Area	Gasoline	4,000 gal.	DW Steel
T5	Garage #1	15W-40 Motor Oil	360 gal.	DW Steel
T6	Garage #1	Hydraulic Oil	360 gal.	DW Steel
T7	Garage #1	Waste Oil	300 gal.	DW Steel
T8	Garage #2	15W-40 Motor Oil	300 gal.	DW Steel
T9	Garage #2	Hydraulic Oil 10W	300 gal.	DW Steel
T10	Garage #2	Waste Oil	300 gal.	DW Steel
T11	Oil/Drum Storage	Gear Oil	260 gal.	DW Steel
T12	Oil/Drum Storage	Gear Oil	260 gal.	DW Steel
8 Transformers	Southeast of quarry, west of secondary crusher, at tertiary crusher, asphalt plant, and east of concrete facility (6).	Dielectric Fluid	100 to 500 gal.	Steel
Totes	Quarry Garage, Asphalt Plant	Vehicle maintenance fluids and Floculants	300-gal. each	Poly Tank
Drums	Garage #1 & #2, Quarry Garage, and Compressor Room	Hydraulic Oil, Lube Oil, Gear Oil, Grease, etc.	55-gal. each	Steel

LEGEND

- PROPERTY LINE
- RETAINING WALL
- TREELINE
- STREAM/EDGE OF WATER
- DIRT/GRAVEL ROAD
- PIPE FLOW
- EXISTING CATCH BASIN
- TRANSFORMER
- STORMWATER FLOW
- SPILL KIT
- PUMP
- DRAINAGE AREA BOUNDARY

DRAINAGE AREA	IMPERVIOUS SURFACE AREA (Square Feet)
001	4,301,084
002	1,349,926

NOTE: IMPERVIOUS SURFACE AREAS AS DEPICTED ON THIS DRAWING HAVE BEEN PRESENTED TO ILLUSTRATE GENERAL STORMWATER DRAINAGE FEATURES. THIS DOES NOT REPRESENT AN OPINION ON THE ABILITY OF THE SPECIFIED SURFACE AREAS TO CONTAIN RELEASED PRODUCT OR OTHER MATERIALS RELATIVE TO THE RESPECTIVE DEFINITIONS OF AND THE "IF ANY" REQUIREMENT FOR "SUFFICIENTLY IMPERVIOUS".

NOTES:

1. THE LOCATION OF ALL STRUCTURES, EQUIPMENT, DELINEATIONS AND OTHER FEATURES PRESENTED ON THIS DRAWING SHOULD BE CONSIDERED APPROXIMATE. THIS DRAWING SHOULD ONLY BE USED FOR GENERAL PRESENTATION PURPOSES AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. TRITON MAKES NO WARRANTY AS TO THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION CONTAINED IN THIS DRAWING, AND THE USER ASSUMES ALL RISK OF LOSS TO PERSONS AND PROPERTY FROM RELIANCE THEREON.

2. BASEMAP IS BASED ON A SPCC PLAN – SITE LAYOUT BY ENSR CORPORATION FOR P.J. KEATING INC., DATED: OCTOBER 2007; SCALE: NOT TO SCALE.

3. STORMWATER DRAINAGE INFORMATION INCLUDED ON THIS FIGURE WAS DERIVED FROM ONE OR MORE OF THE FOLLOWING SOURCES: PREVIOUSLY PROVIDED MAPS WITH DEFINED DRAINAGE AREAS, SURVEYED CONTOUR LINES, AERIAL MAPS, FIELD INSPECTIONS, OR COMMUNICATED DIRECTLY FROM THE CLIENT. DUE TO ON-GOING SITE OPERATIONS OR ACTIVITIES, THESE DRAINAGE AREAS, AND THEIR ASSOCIATED OUTFALLS, ARE SUBJECT TO CHANGE AND ACTUAL CONDITIONS MAY DIFFER FROM THIS DRAWING.

TRITON ENVIRONMENTAL, INC.
Environmental Consulting & Engineering
365 Church Street, Suite 201 • Guilford, Connecticut 06437 • 203.458.7300

DRAFT

FIGURE 2
SITE PLAN
SPCC & SWPPP
P.J. KEATING COMPANY
875 PHENIX AVENUE
CRANSTON, RHODE ISLAND

DRAWN BY: FSM	APPROVED BY: PCS
DATE: 7/2/19	SCALE: 1"= 150'

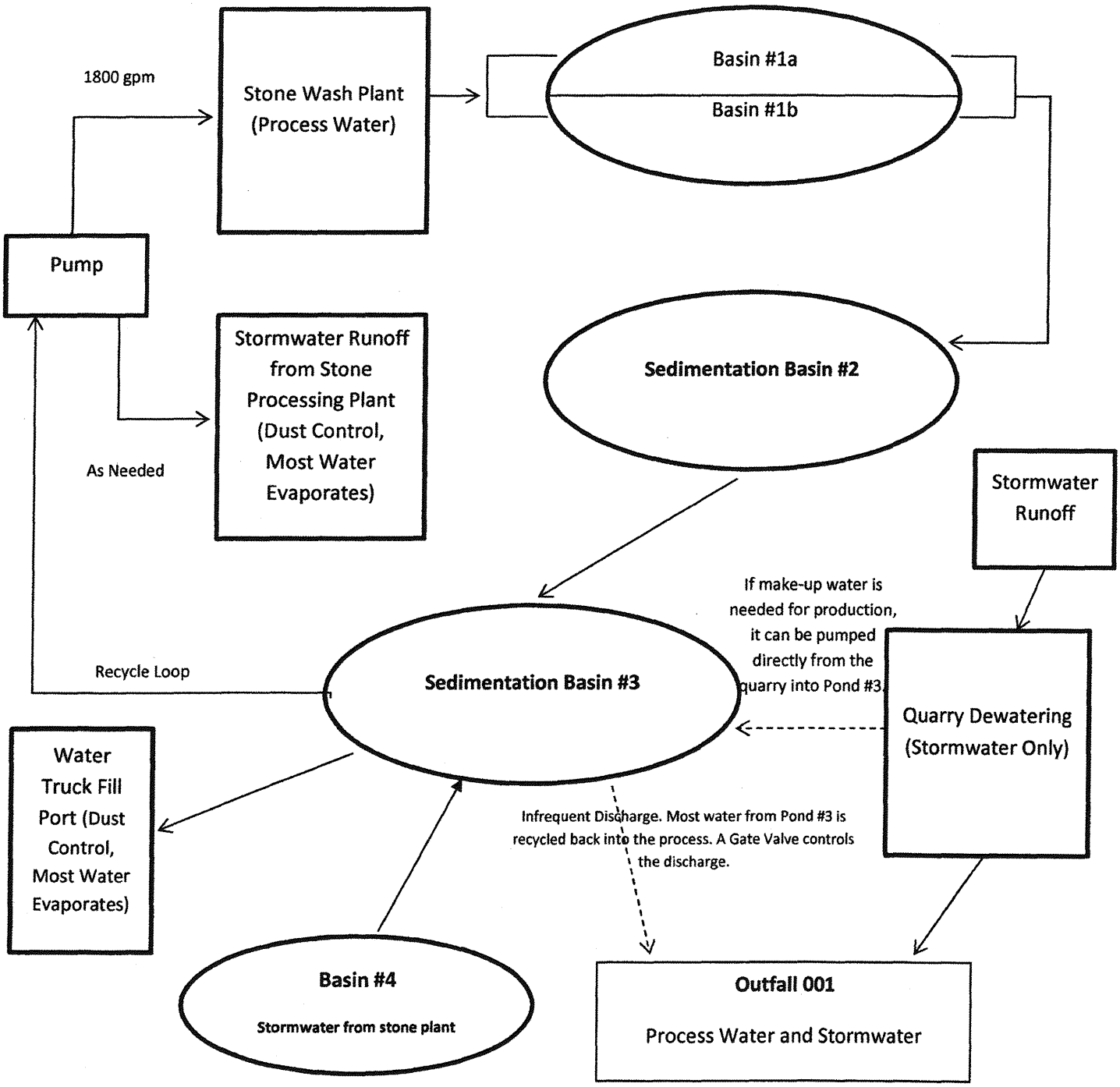
FILE No.: 104035CRAN016

H:\CAD\DRAWINGS\104000\104035\FIGURES\SPCC AND SWPPP\CRANSTON\104035CRAN016.DWG
Layout:Layout1

Appendix C: Process Diagram for Outfall 001

See next page

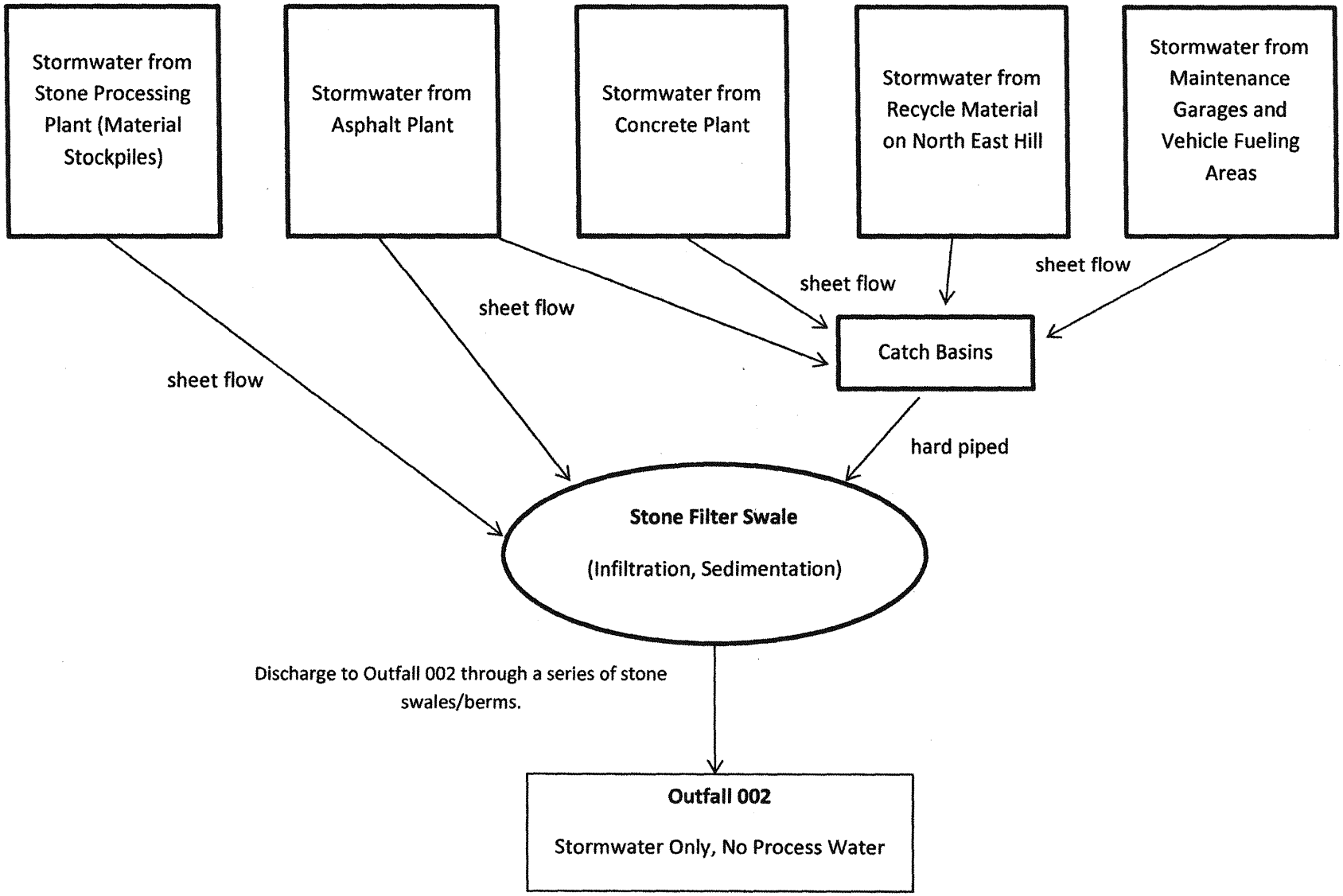
Figure 3: Line Diagram for Outfall 001



Appendix D: Process Diagram for Outfall 002

See next page

Figure 4: Line Diagram for Outfall 002



PART II
TABLE OF CONTENTS

GENERAL REQUIREMENTS

DEFINITIONS

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 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 $5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than $10,000 per day of such violation and imprisonment for not more than 30 days, or both. 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.

(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.

(2) 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 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 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $5,000 per 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
ug/l	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. ^oC	temperature in degrees Centigrade
Temp. ^oF	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 E: Water Quality Calculations

See next page

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY SPECIFIC DATA INPUT SHEET

NOTE: LIMITS BASED ON RI WATER QUALITY CRITERIA DATED JULY 2006

FACILITY NAME: **P.J. Keating Cranston facility**

RIPDES PERMIT #: **RI0023761**

	DISSOLVED BACKGROUND DATA (ug/L)	ACUTE METAL TRANSLATOR	CHRONIC METAL TRANSLATOR
ALUMINUM	NA	NA	NA
ARSENIC	NA	1	1
CADMIUM	NA	0.960197808	0.925197808
CHROMIUM III	NA	0.316	0.86
CHROMIUM VI	NA	0.982	0.962
COPPER	NA	0.96	0.96
LEAD	NA	0.847411533	0.847411533
MERCURY	NA	0.85	0.85
NICKEL	NA	0.998	0.997
SELENIUM	NA	NA	NA
SILVER	NA	0.85	NA
ZINC	NA	0.978	0.986
AMMONIA (as N)	NA		

USE NA WHEN NO DATA IS AVAILABLE

NOTE 1: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

pH =	7.538	S.U.
HARDNESS =	67.9	(mg/L as CaCO3)

FLOW DATA	
DESIGN FLOW =	2.672 MGD
=	4.134 CFS
7Q10 FLOW =	0.000 CFS
7Q10 (JUNE-OCT) =	0.000 CFS
7Q10 (NOV-MAY) =	0.000 CFS
30Q5 FLOW =	0.520 CFS
HARMONIC FLOW =	0.520 CFS

DILUTION FACTORS	
ACUTE =	1.000
CHRONIC =	1.000
(MAY-OCT) =	1.000
(NOV-APR) =	1.000
30Q5 FLOW =	1.126
HARMONIC FLOW =	1.126

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI0023761

Month	Upper 90th% pH	Acute Criteria* mg/L as N	Chronic Criteria* mg/L as N
May	7.538	12.578	2.0116
Jun	7.538	12.578	2.0116
Jul	7.538	12.578	2.0116
Aug	7.538	12.578	2.0116
Sep	7.538	12.578	2.0116
Oct	7.538	12.578	2.0116
Nov	7.538	12.578	4.0244
Dec	7.538	12.578	4.0244
Jan	7.538	12.578	4.0244
Feb	7.538	12.578	4.0244
Mar	7.538	12.578	4.0244
Apr	7.538	12.578	4.0244

**NOTE: Criteria from Appendix B of the RI Water Quality Regs., July 2006.*

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI0023761

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:							
TOXIC METALS AND CYANIDE							
ANTIMONY	7440360		450	360	10	640	8
ARSENIC (limits are total recoverable)	7440382	NA	340	272	150	1.4	1.260864077
ASBESTOS	1332214			No Criteria			No Criteria
BERYLLIUM	7440417		7.5	6	0.17		0.136
CADMIUM (limits are total recoverable)	7440439	NA	1.381872505	1.151323191	0.187945205		0.162512452
CHROMIUM III (limits are total recoverable)	16065831	NA	414.9501726	1050.506766	53.97649222		50.21069044
CHROMIUM VI (limits are total recoverable)	18540299	NA	16	13.03462322	11		9.147609148
COPPER (limits are total recoverable)	7440508	NA	9.331647286	7.776372738	6.433313968		5.361094973
CYANIDE	57125		22	17.6	5.2	140	4.16
LEAD (limits are total recoverable)	7439921	NA	42.26634071	39.9015959	1.647058618		1.554907908
MERCURY (limits are total recoverable)	7439976	NA	1.4	1.317647059	0.77	0.15	0.158932447
NICKEL (limits are total recoverable)	7440020	NA	337.4632051	270.5115873	37.48174357	4600	30.07562172
SELENIUM (limits are total recoverable)	7782492	NA	20	16	5	4200	4
SILVER (limits are total recoverable)	7440224	NA	1.772698656	1.668422265	NA		No Criteria
THALLIUM	7440280		46	36.8	1	0.47	0.423290083
ZINC (limits are total recoverable)	7440666	NA	84.41088168	69.04775597	85.10135924	26000	69.04775597
VOLATILE ORGANIC COMPOUNDS							
ACROLEIN	107028		2.9	2.32	0.06	290	0.048
ACRYLONITRILE	107131		378	302.4	8.4	2.5	2.251542994
BENZENE	71432		265	212	5.9	510	4.72
BROMOFORM	75252		1465	1172	33	1400	26.4
CARBON TETRACHLORIDE	56235		1365	1092	30	16	14.40987516
CHLOROBENZENE	108907		795	636	18	1600	14.4
CHLORODIBROMOMETHANE	124481			No Criteria		130	117.0802357
CHLOROFORM	67663		1445	1156	32	4700	25.6
DICHLOROBROMOMETHANE	75274			No Criteria		170	153.1049236
1,2DICHLOROETHANE	107062		5900	4720	131	370	104.8
1,1DICHLOROETHYLENE	75354		580	464	13	7100	10.4
1,2DICHLOROPROPANE	78875		2625	2100	58	150	46.4
1,3DICHLOROPROPYLENE	542756			No Criteria		21	18.91296115
ETHYLBENZENE	100414		1600	1280	36	2100	28.8
BROMOMETHANE (methyl bromide)	74839			No Criteria		1500	1350.925796

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI0023761

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
CHLOROMETHANE (methyl chloride)	74873			No Criteria			No Criteria
METHYLENE CHLORIDE	75092		9650	7720	214	5900	171.2
1,1,2,2TETRACHLOROETHANE	79345		466	372.8	10	40	8
TETRACHLOROETHYLENE	127184		240	192	5.3	33	4.24
TOLUENE	108883		635	508	14	15000	11.2
1,2TRANSDICHLOROETHYLENE	156605			No Criteria		10000	9006.171976
1,1,1TRICHLOROETHANE	71556			No Criteria			No Criteria
1,1,2TRICHLOROETHANE	79005		900	720	20	160	16
TRICHLOROETHYLENE	79016		1950	1560	43	300	34.4
VINYL CHLORIDE	75014			No Criteria		2.4	2.161481274
ACID ORGANIC COMPOUNDS							
2CHLOROPHENOL	95578		129	103.2	2.9	150	2.32
2,4DICHLOROPHENOL	120832		101	80.8	2.2	290	1.76
2,4DIMETHYLPHENOL	105679		106	84.8	2.4	850	1.92
4,6DINITRO2METHYL PHENOL	534521			No Criteria		280	252.1728153
2,4DINITROPHENOL	51285		31	24.8	0.69	5300	0.552
4NITROPHENOL	88755			No Criteria			No Criteria
PENTACHLOROPHENOL	87865		0.058487436	0.046789949	0.044871909	30	0.035897527
PHENOL	108952		251	200.8	5.6	1700000	4.48
2,4,6TRICHLOROPHENOL	88062		16	12.8	0.36	24	0.288
BASE NEUTRAL COMPUNDS							
ACENAPHTHENE	83329		85	68	1.9	990	1.52
ANTHRACENE	120127			No Criteria		40000	36024.6879
BENZIDINE	92875			No Criteria		0.002	0.001801234
POLYCYCLIC AROMATIC HYDROCARBONS				No Criteria		0.18	0.162111096
BIS(2CHLOROETHYL)ETHER	111444			No Criteria		5.3	4.773271147
BIS(2CHLOROISOPROPYL)ETHER	108601			No Criteria		65000	58540.11784
BIS(2ETHYLHEXYL)PHTHALATE	117817		555	444	12	22	9.6
BUTYL BENZYL PHTHALATE	85687		85	68	1.9	1900	1.52
2CHLORONAPHTHALENE	91587			No Criteria		1600	1440.987516
1,2DICHLOROBENZENE	95501		79	63.2	1.8	1300	1.44
1,3DICHLOROBENZENE	541731		390	312	8.7	960	6.96
1,4DICHLOROBENZENE	106467		56	44.8	1.2	190	0.96
3,3DICHLOROBENZIDENE	91941			No Criteria		0.28	0.252172815

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI0023761

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
DIETHYL PHTHALATE	84662		2605	2084	58	44000	46.4
DIMETHYL PHTHALATE	131113		1650	1320	37	1100000	29.6
DI-n-BUTYL PHTHALATE	84742			No Criteria		4500	4052.777389
2,4DINITROTOLUENE	121142		1550	1240	34	34	27.2
1,2DIPHENYLHYDRAZINE	122667		14	11.2	0.31	2	0.248
FLUORANTHENE	206440		199	159.2	4.4	140	3.52
FLUORENE	86737			No Criteria		5300	4773.271147
HEXACHLOROBENZENE	118741			No Criteria		0.0029	0.00261179
HEXACHLOROBUTADIENE	87683			No Criteria		180	162.1110956
HEXACHLOROCYCLOPENTADIENE	77474		0.35	0.28	0.008	1100	0.0064
HEXACHLOROETHANE	67721		49	39.2	1.1	33	0.88
ISOPHORONE	78591		5850	4680	130	9600	104
NAPHTHALENE	91203		115	92	2.6		2.08
NITROBENZENE	98953		1350	1080	30	690	24
N-NITROSODIMETHYLAMINE	62759			No Criteria		30	27.01851593
N-NITROSODI-N-PROPYLAMINE	621647			No Criteria		5.1	4.593147708
N-NITROSODIPHENYLAMINE	86306		293	234.4	6.5	60	5.2
PYRENE	129000			No Criteria		4000	3602.46879
1,2,4trichlorobenzene	120821		75	60	1.7	70	1.36
PESTICIDES/PCBs							
ALDRIN	309002		3	2.4		0.0005	0.000450309
Alpha BHC	319846			No Criteria		0.049	0.044130243
Beta BHC	319857			No Criteria		0.17	0.153104924
Gamma BHC (Lindane)	58899		0.95	0.76		1.8	1.621110956
CHLORDANE	57749		2.4	1.92	0.0043	0.0081	0.00344
4,4DDT	50293		1.1	0.88	0.001	0.0022	0.0008
4,4DDE	72559			No Criteria		0.0022	0.001981358
4,4DDD	72548			No Criteria		0.0031	0.002791913
DIELDRIN	60571		0.24	0.192	0.056	0.00054	0.000486333
ENDOSULFAN (alpha)	959988		0.22	0.176	0.056	89	0.0448
ENDOSULFAN (beta)	33213659		0.22	0.176	0.056	89	0.0448
ENDOSULFAN (sulfate)	1031078			No Criteria		89	80.15493059
ENDRIN	72208		0.086	0.0688	0.036	0.06	0.0288
ENDRIN ALDEHYDE	7421934			No Criteria		0.3	0.270185159

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI0023761

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
HEPTACHLOR	76448		0.52	0.416	0.0038	0.00079	0.000711488
HEPTACHLOR EPOXIDE	1024573		0.52	0.416	0.0038	0.00039	0.000351241
POLYCHLORINATED BIPHENYLS3	1336363			No Criteria	0.014	0.00064	0.000576395
2,3,7,8TCDD (Dioxin)	1746016			No Criteria		0.000000051	4.59315E-08
TOXAPHENE	8001352		0.73	0.584	0.0002	0.0028	0.00016
TRIBUTYLTIN			0.46	0.368	0.072		0.0576
NON PRIORITY POLLUTANTS:							
OTHER SUBSTANCES							
ALUMINUM (limits are total recoverable)	7429905	NA	750	600	87		69.6
AMMONIA as N(winter/summer)	7664417		12.578 | 12.58	10062 | 10062	4.0244 | 2.0116		3219.52 | 1609.28
4BROMOPHENYL PHENYL ETHER			18	14.4	0.4		0.32
CHLORIDE	16887006		860000	688000	230000		184000
CHLORINE	7782505		19	19	11		11
4CHLORO2METHYLPHENOL			15	12	0.32		0.256
1CHLORONAPHTHALENE			80	64	1.8		1.44
4CHLOROPHENOL	106489		192	153.6	4.3		3.44
2,4DICHLORO6METHYLPHENOL			22	17.6	0.48		0.384
1,1DICHLOROPROPANE			1150	920	26		20.8
1,3DICHLOROPROPANE	142289		303	242.4	6.7		5.36
2,3DINITROTOLUENE			17	13.6	0.37		0.296
2,4DINITRO6METHYL PHENOL			12	9.6	0.26		0.208
IRON	7439896			No Criteria	1000		800
pentachlorobenzene	608935		13	10.4	0.28		0.224
PENTACHLOROETHANE			362	289.6	8		6.4
1,2,3,5tetrachlorobenzene			321	256.8	7.1		5.68
1,1,1,2TETRACHLOROETHANE	630206		980	784	22		17.6
2,3,4,6TETRACHLOROPHENOL	58902		7	5.6	0.16		0.128
2,3,5,6TETRACHLOROPHENOL			8.5	6.8	0.19		0.152
2,4,5TRICHLOROPHENOL	95954		23	18.4	0.51		0.408
2,4,6TRINITROPHENOL	88062		4235	3388	94		75.2
XYLENE	1330207		133	106.4	3		2.4

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI8675309

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:			
TOXIC METALS AND CYANIDE			
ANTIMONY	7440360	360.00	8.00
ARSENIC, TOTAL	7440382	272.00	1.26
ASBESTOS	1332214	No Criteria	0.00000
BERYLLIUM	7440417	6.00	0.14
CADMIUM, TOTAL	7440439	1.15	0.16251
CHROMIUM III, TOTAL	16065831	1050.51	50.21
CHROMIUM VI, TOTAL	18540299	13.03	9.15
COPPER, TOTAL	7440508	7.78	5.36
CYANIDE	57125	17.60	4.16
LEAD, TOTAL	7439921	39.90	1.55
MERCURY, TOTAL	7439976	1.32	0.16
NICKEL, TOTAL	7440020	270.51	30.08
SELENIUM, TOTAL	7782492	16.00	4.00
SILVER, TOTAL	7440224	1.67	No Criteria
THALLIUM	7440280	36.80	0.42
ZINC, TOTAL	7440666	69.05	69.05
VOLATILE ORGANIC COMPOUNDS			
ACROLEIN	107028	2.32	0.04800
ACRYLONITRILE	107131	302.40	2.25
BENZENE	71432	212.00	4.72
BROMOFORM	75252	1172.00	26.40
CARBON TETRACHLORIDE	56235	1092.00	14.41
CHLOROBENZENE	108907	636.00	14.40
CHLORODIBROMOMETHANE	124481	No Criteria	117.08
CHLOROFORM	67663	1156.00	25.60
DICHLOROBROMOMETHANE	75274	No Criteria	153.10
1,2DICHLOROETHANE	107062	4720.00	104.80
1,1DICHLOROETHYLENE	75354	464.00	10.40
1,2DICHLOROPROPANE	78875	2100.00	46.40
1,3DICHLOROPROPYLENE	542756	No Criteria	18.91
ETHYLBENZENE	100414	1280.00	28.80
BROMOMETHANE (methyl bromic	74839	No Criteria	1350.93
CHLOROMETHANE (methyl chlori	74873	No Criteria	0.00000
METHYLENE CHLORIDE	75092	7720.00	171.20

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
TETRACHLOROETHYLENE	127184	192.00	4.24
TOLUENE	108883	508.00	11.20
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	9006.17
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00000
1,1,2TRICHLOROETHANE	79005	720.00	16.00
TRICHLOROETHYLENE	79016	1560.00	34.40
VINYL CHLORIDE	75014	No Criteria	2.16
ACID ORGANIC COMPOUNDS			
2CHLOROPHENOL	95578	103.20	2.32
2,4DICHLOROPHENOL	120832	80.80	1.76
2,4DIMETHYLPHENOL	105679	84.80	1.92
4,6DINITRO2METHYL PHENOL	534521	No Criteria	252.17
2,4DINITROPHENOL	51285	24.80	0.55
4NITROPHENOL	88755	No Criteria	0.00000
PENTACHLOROPHENOL	87865	0.05	0.03590
PHENOL	108952	200.80	4.48
2,4,6TRICHLOROPHENOL	88062	12.80	0.29
BASE NEUTRAL COMPUNDS			
ACENAPHTHENE	83329	68.00	1.52
ANTHRACENE	120127	No Criteria	36024.69
BENZIDINE	92875	No Criteria	0.00180
PAHs		No Criteria	0.16
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	4.77
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	58540.12
BIS(2ETHYLHEXYL)PHTHALATE	117817	444.00	9.60
BUTYL BENZYL PHTHALATE	85687	68.00	1.52
2CHLORONAPHTHALENE	91587	No Criteria	1440.99
1,2DICHLOROBENZENE	95501	63.20	1.44
1,3DICHLOROBENZENE	541731	312.00	6.96
1,4DICHLOROBENZENE	106467	44.80	0.96
3,3DICHLOROBENZIDENE	91941	No Criteria	0.25
DIETHYL PHTHALATE	84662	2084.00	46.40
DIMETHYL PHTHALATE	131113	1320.00	29.60
DI-n-BUTYL PHTHALATE	84742	No Criteria	4052.78
2,4DINITROTOLUENE	121142	1240.00	27.20
1,2DIPHENYLHYDRAZINE	122667	11.20	0.25

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: P.J. Keating Cranston facility RIPDES PERMIT #: RI8675309

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,1,2,2TETRACHLOROETHANE	79345	372.80	8.00
FLUORENE	86737	No Criteria	4773.27
HEXACHLOROBENZENE	118741	No Criteria	0.00261
HEXACHLOROBUTADIENE	87683	No Criteria	162.11
HEXACHLOROCYCLOPENTADIE	77474	0.28	0.00640
HEXACHLOROETHANE	67721	39.20	0.88
ISOPHORONE	78591	4680.00	104.00
NAPHTHALENE	91203	92.00	2.08
NITROBENZENE	98953	1080.00	24.00
N-NITROSODIMETHYLAMINE	62759	No Criteria	27.02
N-NITROSODI-N-PROPYLAMINE	621647	No Criteria	4.59
N-NITROSODIPHENYLAMINE	86306	234.40	5.20
PYRENE	129000	No Criteria	3602.47
1,2,4trichlorobenzene	120821	60.00	1.36
PESTICIDES/PCBs			
ALDRIN	309002	2.40	0.00045
Alpha BHC	319846	No Criteria	0.04
Beta BHC	319857	No Criteria	0.15
Gamma BHC (Lindane)	58899	0.76	0.76
CHLORDANE	57749	1.92	0.00344
4,4DDT	50293	0.88	0.00080
4,4DDE	72559	No Criteria	0.00198
4,4DDD	72548	No Criteria	0.00279
DIELDRIN	60571	0.19	0.00049
ENDOSULFAN (alpha)	959988	0.18	0.04480
ENDOSULFAN (beta)	33213659	0.18	0.04480
ENDOSULFAN (sulfate)	1031078	No Criteria	80.15
ENDRIN	72208	0.07	0.03
ENDRIN ALDEHYDE	7421934	No Criteria	0.27
HEPTACHLOR	76448	0.42	0.00
HEPTACHLOR EPOXIDE	1024573	0.42	0.00
POLYCHLORINATED BIPHENYLS	1336363	No Criteria	0.00
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00
TOXAPHENE	8001352	0.58	0.00
TRIBUTYLTIN		0.37	0.06

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
FLUORANTHENE	206440	159.20	3.52
NON PRIORITY POLLUTANTS:			
OTHER SUBSTANCES			
ALUMINUM, TOTAL	7429905	600.00	69.60
AMMONIA (as N), WINTER (NOV-API	7664417	10062.40	3219.52
AMMONIA (as N), SUMMER (MAY-O(	7664417	10062.40	1609.28
4BROMOPHENYL PHENYL ETHER		14.40	0.32
CHLORIDE	16887006	688000.00	184000.00
CHLORINE	7782505	19.00	11.00
4CHLORO2METHYLPHENOL		12.00	0.26
1CHLORONAPHTHALENE		64.00	1.44
4CHLOROPHENOL	106489	153.60	3.44
2,4DICHLORO6METHYLPHENOL		17.60	0.38
1,1DICHLOROPROPANE		920.00	20.80
1,3DICHLOROPROPANE	142289	242.40	5.36
2,3DINITROTOLUENE		13.60	0.30
2,4DINITRO6METHYL PHENOL		9.60	0.21
IRON	7439896	No Criteria	800.00
pentachlorobenzene	608935	10.40	0.22
PENTACHLOROETHANE		289.60	6.40
1,2,3,5tetrachlorobenzene		256.80	5.68
1,1,1,2TETRACHLOROETHANE	630206	784.00	17.60
2,3,4,6TETRACHLOROPHENOL	58902	5.60	0.13
2,3,5,6TETRACHLOROPHENOL		6.80	0.15
2,4,5TRICHLOROPHENOL	95954	18.40	0.41
2,4,6TRINITROPHENOL	88062	3388.00	75.20
XYLENE	1330207	106.40	2.40

Facility Name: *PJ Keating Cranston facility*

RIPDES Permit #: *RI0023761*

Outfall #: *001*

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	CAS #	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Permit Ap. (ug/L) 1/2/2019		Ave. DMR Data (ug/L) 10/14-6/20		Potential Permit Limits (ug/L)		Reasonable Potential?	
		Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
PRIORITY POLLUTANTS												
TOXIC METALS AND CYANIDE												
ANTIMONY	7440360	360.00	8.00	---	---	---	---	---	360	8		
ARSENIC (limits are total recoverable)	7440382	272.00	1.26	---	---	---	---	---	272	1.26086408		
ASBESTOS	1332214	No Criteria	0.00	---	---	---	---	---	---	0		
BERYLLIUM	7440417	6.00	0.14	---	---	---	---	---	6	0.136		
CADMIUM (limits are total recoverable)	7440439	1.15	0.16	---	---	---	---	---	1.15132319	0.16251245		
CHROMIUM III (limits are total recoverable)	16065831	1050.51	50.21	---	---	---	---	---	1050.50677	50.2106904		
CHROMIUM VI (limits are total recoverable)	18540299	13.03	9.15	---	---	---	---	---	13.0346232	9.14760915		
COPPER (limits are total recoverable)	7440508	7.78	5.36	---	---	---	---	---	7.77637274	5.36109497		
CYANIDE	57125	17.60	4.16	---	---	---	---	---	17.6	4.16		
LEAD (limits are total recoverable)	7439921	39.90	1.55	---	---	---	---	---	39.9015959	1.55490791		
MERCURY (limits are total recoverable)	7439976	1.32	0.16	---	---	---	---	---	1.31764706	0.15893245		
NICKEL (limits are total recoverable)	7440020	270.51	30.08	---	---	---	---	---	270.511587	30.0756217		
SELENIUM (limits are total recoverable)	7782492	16.00	4.00	---	---	---	---	---	16	4		
SILVER (limits are total recoverable)	7440224	1.67	No Criteria	---	---	---	---	---	1.66842226	1.66842226		
THALLIUM	7440280	36.80	0.42	---	---	---	---	---	36.8	0.42329008		
ZINC (limits are total recoverable)	7440666	69.05	69.05	---	---	---	---	---	69.047756	69.047756		
VOLATILE ORGANIC COMPOUNDS												
ACROLEIN	107028	2.32	0.05	---	---	---	---	---	2.32	0.048		
ACRYLONITRILE	107131	302.40	2.25	---	---	---	---	---	302.4	2.25154299		
BENZENE	71432	212.00	4.72	---	---	---	---	---	212	4.72		
BROMOFORM	75252	1172.00	26.40	---	---	---	---	---	1172	26.4		
CARBON TETRACHLORIDE	56235	1092.00	14.41	---	---	---	---	---	1092	14.4098752		
CHLOROBENZENE	108907	636.00	14.40	---	---	---	---	---	636	14.4		
CHLORODIBROMOMETHANE	124481	No Criteria	117.08	---	---	---	---	---	---	117.080236		
CHLOROFORM	67663	1156.00	25.60	---	---	---	---	---	1156	25.6		
DICHLOROBROMOMETHANE	75274	No Criteria	153.10	---	---	---	---	---	---	153.104924		

1,2DICHLOROETHANE	107062	4720.00	104.80	---	---	---	---	---	4720	104.8	
1,1DICHLOROETHYLENE	75354	464.00	10.40	---	---	---	---	---	464	10.4	
1,2DICHLOROPROPANE	78875	2100.00	46.40	---	---	---	---	---	2100	46.4	
1,3DICHLOROPROPYLENE	542756	No Criteria	18.91	---	---	---	---	---	---	18.9129611	
ETHYLBENZENE	100414	1280.00	28.80	---	---	---	---	---	1280	28.8	
BROMOMETHANE (methyl bromide)	74839	No Criteria	1350.93	---	---	---	---	---	---	1350.9258	
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00	---	---	---	---	---	---	0	
METHYLENE CHLORIDE	75092	7720.00	171.20	---	---	---	---	---	7720	171.2	
1,1,2,2TETRACHLOROETHANE	79345	372.80	8.00	---	---	---	---	---	372.8	8	
TETRACHLOROETHYLENE	127184	192.00	4.24	---	---	---	---	---	192	4.24	
TOLUENE	108883	508.00	11.20	---	---	---	---	---	508	11.2	
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	9006.17	---	---	---	---	---	---	9006.17198	
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00	---	---	---	---	---	---	0	
1,1,2TRICHLOROETHANE	79005	720.00	16.00	---	---	---	---	---	720	16	
TRICHLOROETHYLENE	79016	1560.00	34.40	---	---	---	---	---	1560	34.4	
VINYL CHLORIDE	75014	No Criteria	2.16	---	---	---	---	---	---	2.16148127	
ACID ORGANIC COMPOUNDS											
2CHLOROPHENOL	95578	103.20	2.32	---	---	---	---	---	103.2	2.32	
2,4DICHLOROPHENOL	120832	80.80	1.76	---	---	---	---	---	80.8	1.76	
2,4DIMETHYLPHENOL	105679	84.80	1.92	---	---	---	---	---	84.8	1.92	
4,6DINITRO2METHYL PHENOL	534521	No Criteria	252.17	---	---	---	---	---	---	252.172815	
2,4DINITROPHENOL	51285	24.80	0.55	---	---	---	---	---	24.8	0.552	
4NITROPHENOL	88755	No Criteria	0.00	---	---	---	---	---	---	0	
PENTACHLOROPHENOL	87865	0.05	0.04	---	---	---	---	---	0.04678995	0.03589753	
PHENOL	108952	200.80	4.48	---	---	---	---	---	200.8	4.48	
2,4,6TRICHLOROPHENOL	88062	12.80	0.29	---	---	---	---	---	12.8	0.288	
BASE NEUTRAL COMPOUNDS											
ACENAPHTHENE	83329	68.00	1.52	---	---	---	---	---	68	1.52	
ANTHRACENE	120127	No Criteria	36024.69	---	---	---	---	---	---	36024.6879	
BENZIDINE	92875	No Criteria	0.00	---	---	---	---	---	---	0.00180123	
POLYCYCLIC AROMATIC HYDROCARBONS		No Criteria	0.16	---	---	---	---	---	---	0.1621111	
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	4.77	---	---	---	---	---	---	4.77327115	
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	58540.12	---	---	---	---	---	---	58540.1178	
BIS(2ETHYLHEXYL)PHTHALATE	117817	444.00	9.60	---	---	---	---	---	444	9.6	
BUTYL BENZYL PHTHALATE	85687	68.00	1.52	---	---	---	---	---	68	1.52	
2CHLORONAPHTHALENE	91587	No Criteria	1440.99	---	---	---	---	---	---	1440.98752	
1,2DICHLOROBENZENE	95501	63.20	1.44	---	---	---	---	---	63.2	1.44	
1,3DICHLOROBENZENE	541731	312.00	6.96	---	---	---	---	---	312	6.96	
1,4DICHLOROBENZENE	106467	44.80	0.96	---	---	---	---	---	44.8	0.96	
3,3DICHLOROBENZIDENE	91941	No Criteria	0.25	---	---	---	---	---	---	0.25217282	

DIETHYL PHTHALATE	84662	2084.00	46.40	---	---	---	---	---	2084	46.4	
DIMETHYL PHTHALATE	131113	1320.00	29.60	---	---	---	---	---	1320	29.6	
DInBUTYL PHTHALATE	84742	No Criteria	4052.78	---	---	---	---	---	---	4052.77739	
2,4DINITROTOLUENE	121142	1240.00	27.20	---	---	---	---	---	1240	27.2	
1,2DIPHENYLHYDRAZINE	122667	11.20	0.25	---	---	---	---	---	11.2	0.248	
FLUORANTHENE	206440	159.20	3.52	---	---	---	---	---	159.2	3.52	
FLUORENE	86737	No Criteria	4773.27	---	---	---	---	---	---	4773.27115	
HEXACHLOROBENZENE	118741	No Criteria	0.00	---	---	---	---	---	---	0.00261179	
HEXACHLOROBUTADIENE	87683	No Criteria	162.11	---	---	---	---	---	---	162.111096	
HEXACHLOROCYCLOPENTADIENE	77474	0.28	0.01	---	---	---	---	---	0.28	0.0064	
HEXACHLOROETHANE	67721	39.20	0.88	---	---	---	---	---	39.2	0.88	
ISOPHORONE	78591	4680.00	104.00	---	---	---	---	---	4680	104	
NAPHTHALENE	91203	92.00	2.08	---	---	---	---	---	92	2.08	
NITROBENZENE	98953	1080.00	24.00	---	---	---	---	---	1080	24	
NNITROSODIMETHYLAMINE	62759	No Criteria	27.02	---	---	---	---	---	---	27.0185159	
NNITROSODINPROPYLAMINE	621647	No Criteria	4.59	---	---	---	---	---	---	4.59314771	
NNITROSODIPHENYLAMINE	86306	234.40	5.20	---	---	---	---	---	234.4	5.2	
PYRENE	129000	No Criteria	3602.47	---	---	---	---	---	---	3602.46879	
1,2,4trichlorobenzene	120821	60.00	1.36	---	---	---	---	---	60	1.36	
PESTICIDES/PCBs											
ALDRIN	309002	2.40	0.00	---	---	---	---	---	2.4	0.00045031	
Alpha BHC	319846	No Criteria	0.04	---	---	---	---	---	---	0.04413024	
Beta BHC	319857	No Criteria	0.15	---	---	---	---	---	---	0.15310492	
Gamma BHC (Lindane)	58899	0.76	0.76	---	---	---	---	---	0.76	0.76	
CHLORDANE	57749	1.92	0.00	---	---	---	---	---	1.92	0.00344	
4,4DDT	50293	0.88	0.00	---	---	---	---	---	0.88	0.0008	
4,4DDE	72559	No Criteria	0.00	---	---	---	---	---	---	0.00198136	
4,4DDD	72548	No Criteria	0.00	---	---	---	---	---	---	0.00279191	
DIELDRIN	60571	0.19	0.00	---	---	---	---	---	0.192	0.00048633	
ENDOSULFAN (alpha)	959988	0.18	0.04	---	---	---	---	---	0.176	0.0448	
ENDOSULFAN (beta)	33213659	0.18	0.04	---	---	---	---	---	0.176	0.0448	
ENDOSULFAN (sulfate)	1031078	No Criteria	80.15	---	---	---	---	---	---	80.1549306	
ENDRIN	72208	0.07	0.03	---	---	---	---	---	0.0688	0.0288	
ENDRIN ALDEHYDE	7421934	No Criteria	0.27	---	---	---	---	---	---	0.27018516	
HEPTACHLOR	76448	0.42	0.00	---	---	---	---	---	0.416	0.00071149	
HEPTACHLOR EPOXIDE	1024573	0.42	0.00	---	---	---	---	---	0.416	0.00035124	
POLYCHLORINATED BIPHENYLS3	1336363	No Criteria	0.00	---	---	---	---	---	---	0.0005764	
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00	---	---	---	---	---	---	4.5931E-08	
TOXAPHENE	8001352	0.58	0.00	---	---	---	---	---	0.584	0.00016	
TRIBUTYLTIN		0.37	0.06						0.368	0.0576	

NON PRIORITY POLLUTANTS:												
OTHER SUBSTANCES												
ALUMINUM (limits are total recoverable)	7429905	600.00	69.60	---	---	---	---	---	600	69.6		
AMMONIA (winter)	7664417	10062.40	3219.52	---	---	---	---	---	10062.4	3219.52		
AMMONIA (summer)		10062.40	1609.28	---	---	---	---	---	10062.4	1609.28		
4BROMOPHENYL PHENYL ETHER	16887006	14.40	0.32	---	---	---	---	---	14.4	0.32		
CHLORIDE	7782505	688000.00	184000.00						688000	184000		
CHLORINE		19.00	11.00	---	---	---	---	---	19	11		
4CHLORO2METHYLPHENOL		12.00	0.26	---	---	---	---	---	12	0.256		
1CHLORONAPHTHALENE	106489	64.00	1.44	---	---	---	---	---	64	1.44		
4CHLOROPHENOL		153.60	3.44	---	---	---	---	---	153.6	3.44		
2,4DICHLORO6METHYLPHENOL		17.60	0.38	---	---	---	---	---	17.6	0.384		
1,1DICHLOROPROPANE	142289	920.00	20.80	---	---	---	---	---	920	20.8		
1,3DICHLOROPROPANE		242.40	5.36	---	---	---	---	---	242.4	5.36		
2,3DINITROTOLUENE		13.60	0.30	---	---	---	---	---	13.6	0.296		
2,4DINITRO6METHYL PHENOL	7439896	9.60	0.21	---	---	---	---	---	9.6	0.208		
IRON	608935	No Criteria	800.00		2164	1010	1383	1383	---	800	NA	Y
pentachlorobenzene		10.40	0.22	---	---	---	---	---	10.4	0.224		
PENTACHLOROETHANE		289.60	6.40	---	---	---	---	---	289.6	6.4		
1,2,3,5tetrachlorobenzene	630206	256.80	5.68	---	---	---	---	---	256.8	5.68		
1,1,1,2TETRACHLOROETHANE	58902	784.00	17.60	---	---	---	---	---	784	17.6		
2,3,4,6TETRACHLOROPHENOL		5.60	0.13	---	---	---	---	---	5.6	0.128		
2,3,5,6TETRACHLOROPHENOL	95954	6.80	0.15	---	---	---	---	---	6.8	0.152		
2,4,5TRICHLOROPHENOL	88062	18.40	0.41	---	---	---	---	---	18.4	0.408		
2,4,6TRINITROPHENOL	1330207	3388.00	75.20	---	---	---	---	---	3388	75.2		
XYLENE		106.40	2.40						106.4	2.4		

Facility Name: *PJ Keating Cranston facility*

RIPDES Permit #: *RI0023761*

Outfall #: *002*

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	CAS #	Concentration Limits (ug/L) Based on WQ Criteria		Antideg. Limits (ug/L)	Ave UFP Data (ug/L) 1/2/2019		Ave. DMR Data (ug/L) 10/14-6/20		Potential Permit Limits (ug/L)		Reasonable Potential?	
		Daily Max	Monthly Ave	Monthly Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
PRIORITY POLLUTANTS												
TOXIC METALS AND CYANIDE												
ANTIMONY	7440360	360.00	8.00	---	---	---	---	---	360	8		
ARSENIC (limits are total recoverable)	7440382	272.00	1.26	---	---	---	---	---	272	1.26086408		
ASBESTOS	1332214	No Criteria	0.00	---	---	---	---	---	---	0		
BERYLLIUM	7440417	6.00	0.14	---	---	---	---	---	6	0.136		
CADMIUM (limits are total recoverable)	7440439	1.15	0.16	---	---	---	---	---	1.15132319	0.16251245		
CHROMIUM III (limits are total recoverable)	16065831	1050.51	50.21	---	---	---	---	---	1050.50677	50.2106904		
CHROMIUM VI (limits are total recoverable)	18540299	13.03	9.15	---	---	---	---	---	13.0346232	9.14760915		
COPPER (limits are total recoverable)	7440508	7.78	5.36	---	---	---	---	---	7.77637274	5.36109497		
CYANIDE	57125	17.60	4.16	---	---	---	---	---	17.6	4.16		
LEAD (limits are total recoverable)	7439921	39.90	1.55	---	2	2	---	---	39.9015959	1.55490791	N	Y
MERCURY (limits are total recoverable)	7439976	1.32	0.16	---	---	---	---	---	1.31764706	0.15893245		
NICKEL (limits are total recoverable)	7440020	270.51	30.08	---	---	---	---	---	270.511587	30.0756217		
SELENIUM (limits are total recoverable)	7782492	16.00	4.00	---	---	---	---	---	16	4		
SILVER (limits are total recoverable)	7440224	1.67	No Criteria	---	---	---	---	---	1.66842226	1.66842226		
THALLIUM	7440280	36.80	0.42	---	---	---	---	---	36.8	0.42329008		
ZINC (limits are total recoverable)	7440666	69.05	69.05	---	---	---	---	---	69.047756	69.047756		
VOLATILE ORGANIC COMPOUNDS												
ACROLEIN	107028	2.32	0.05	---	---	---	---	---	2.32	0.048		
ACRYLONITRILE	107131	302.40	2.25	---	---	---	---	---	302.4	2.25154299		
BENZENE	71432	212.00	4.72	---	---	---	---	---	212	4.72		
BROMOFORM	75252	1172.00	26.40	---	---	---	---	---	1172	26.4		
CARBON TETRACHLORIDE	56235	1092.00	14.41	---	---	---	---	---	1092	14.4098752		
CHLOROBENZENE	108907	636.00	14.40	---	---	---	---	---	636	14.4		
CHLORODIBROMOMETHANE	124481	No Criteria	117.08	---	---	---	---	---	---	117.080236		
CHLOROFORM	67663	1156.00	25.60	---	---	---	---	---	1156	25.6		
DICHLOROBROMOMETHANE	75274	No Criteria	153.10	---	---	---	---	---	---	153.104924		

1,2DICHLOROETHANE	107062	4720.00	104.80	---	---	---	---	---	4720	104.8		
1,1DICHLOROETHYLENE	75354	464.00	10.40	---	---	---	---	---	464	10.4		
1,2DICHLOROPROPANE	78875	2100.00	46.40	---	---	---	---	---	2100	46.4		
1,3DICHLOROPROPYLENE	542756	No Criteria	18.91	---	---	---	---	---	---	18.9129611		
ETHYLBENZENE	100414	1280.00	28.80	---	---	---	---	---	1280	28.8		
BROMOMETHANE (methyl bromide)	74839	No Criteria	1350.93	---	---	---	---	---	---	1350.9258		
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00	---	---	---	---	---	---	0		
METHYLENE CHLORIDE	75092	7720.00	171.20	---	---	---	---	---	7720	171.2		
1,1,2,2TETRACHLOROETHANE	79345	372.80	8.00	---	---	---	---	---	372.8	8		
TETRACHLOROETHYLENE	127184	192.00	4.24	---	---	---	---	---	192	4.24		
TOLUENE	108883	508.00	11.20	---	---	---	---	---	508	11.2		
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	9006.17	---	---	---	---	---	---	9006.17198		
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00	---	---	---	---	---	---	0		
1,1,2TRICHLOROETHANE	79005	720.00	16.00	---	---	---	---	---	720	16		
TRICHLOROETHYLENE	79016	1560.00	34.40	---	---	---	---	---	1560	34.4		
VINYL CHLORIDE	75014	No Criteria	2.16	---	---	---	---	---	---	2.16148127		
ACID ORGANIC COMPOUNDS												
2CHLOROPHENOL	95578	103.20	2.32	---	---	---	---	---	103.2	2.32		
2,4DICHLOROPHENOL	120832	80.80	1.76	---	---	---	---	---	80.8	1.76		
2,4DIMETHYLPHENOL	105679	84.80	1.92	---	---	---	---	---	84.8	1.92		
4,6DINITRO2METHYL PHENOL	534521	No Criteria	252.17	---	---	---	---	---	---	252.172815		
2,4DINITROPHENOL	51285	24.80	0.55	---	---	---	---	---	24.8	0.552		
4NITROPHENOL	88755	No Criteria	0.00	---	---	---	---	---	---	0		
PENTACHLOROPHENOL	87865	0.05	0.04	---	---	---	---	---	0.04678995	0.03589753		
PHENOL	108952	200.80	4.48	---	---	---	---	---	200.8	4.48		
2,4,6TRICHLOROPHENOL	88062	12.80	0.29	---	---	---	---	---	12.8	0.288		
BASE NEUTRAL COMPOUNDS												
ACENAPHTHENE	83329	68.00	1.52	---	---	---	---	---	68	1.52		
ANTHRACENE	120127	No Criteria	36024.69	---	---	---	---	---	---	36024.6879		
BENZIDINE	92875	No Criteria	0.00	---	---	---	---	---	---	0.00180123		
POLYCYCLIC AROMATIC HYDROCARBONS		No Criteria	0.16	---	---	---	---	---	---	0.1621111		
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	4.77	---	---	---	---	---	---	4.77327115		
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	58540.12	---	---	---	---	---	---	58540.1178		
BIS(2ETHYLHEXYL)PHTHALATE	117817	444.00	9.60	---	---	---	---	---	444	9.6		
BUTYL BENZYL PHTHALATE	85687	68.00	1.52	---	---	---	---	---	68	1.52		
2CHLORONAPHTHALENE	91587	No Criteria	1440.99	---	---	---	---	---	---	1440.98752		
1,2DICHLOROBENZENE	95501	63.20	1.44	---	---	---	---	---	63.2	1.44		
1,3DICHLOROBENZENE	541731	312.00	6.96	---	---	---	---	---	312	6.96		
1,4DICHLOROBENZENE	106467	44.80	0.96	---	---	---	---	---	44.8	0.96		
3,3DICHLOROBENZIDENE	91941	No Criteria	0.25	---	---	---	---	---	---	0.25217282		

DIETHYL PHTHALATE	84662	2084.00	46.40	---	---	---	---	---	2084	46.4	
DIMETHYL PHTHALATE	131113	1320.00	29.60	---	---	---	---	---	1320	29.6	
DInBUTYL PHTHALATE	84742	No Criteria	4052.78	---	---	---	---	---	---	4052.77739	
2,4DINITROTOLUENE	121142	1240.00	27.20	---	---	---	---	---	1240	27.2	
1,2DIPHENYLHYDRAZINE	122667	11.20	0.25	---	---	---	---	---	11.2	0.248	
FLUORANTHENE	206440	159.20	3.52	---	---	---	---	---	159.2	3.52	
FLUORENE	86737	No Criteria	4773.27	---	---	---	---	---	---	4773.27115	
HEXACHLOROBENZENE	118741	No Criteria	0.00	---	---	---	---	---	---	0.00261179	
HEXACHLOROBUTADIENE	87683	No Criteria	162.11	---	---	---	---	---	---	162.111096	
HEXACHLOROCYCLOPENTADIENE	77474	0.28	0.01	---	---	---	---	---	0.28	0.0064	
HEXACHLOROETHANE	67721	39.20	0.88	---	---	---	---	---	39.2	0.88	
ISOPHORONE	78591	4680.00	104.00	---	---	---	---	---	4680	104	
NAPHTHALENE	91203	92.00	2.08	---	---	---	---	---	92	2.08	
NITROBENZENE	98953	1080.00	24.00	---	---	---	---	---	1080	24	
NNITROSODIMETHYLAMINE	62759	No Criteria	27.02	---	---	---	---	---	---	27.0185159	
NNITROSODINPROPYLAMINE	621647	No Criteria	4.59	---	---	---	---	---	---	4.59314771	
NNITROSODIPHENYLAMINE	86306	234.40	5.20	---	---	---	---	---	234.4	5.2	
PYRENE	129000	No Criteria	3602.47	---	---	---	---	---	---	3602.46879	
1,2,4trichlorobenzene	120821	60.00	1.36	---	---	---	---	---	60	1.36	
PESTICIDES/PCBs											
ALDRIN	309002	2.40	0.00	---	---	---	---	---	2.4	0.00045031	
Alpha BHC	319846	No Criteria	0.04	---	---	---	---	---	---	0.04413024	
Beta BHC	319857	No Criteria	0.15	---	---	---	---	---	---	0.15310492	
Gamma BHC (Lindane)	58899	0.76	0.76	---	---	---	---	---	0.76	0.76	
CHLORDANE	57749	1.92	0.00	---	---	---	---	---	1.92	0.00344	
4,4DDT	50293	0.88	0.00	---	---	---	---	---	0.88	0.0008	
4,4DDE	72559	No Criteria	0.00	---	---	---	---	---	---	0.00198136	
4,4DDD	72548	No Criteria	0.00	---	---	---	---	---	---	0.00279191	
DIELDRIN	60571	0.19	0.00	---	---	---	---	---	0.192	0.00048633	
ENDOSULFAN (alpha)	959988	0.18	0.04	---	---	---	---	---	0.176	0.0448	
ENDOSULFAN (beta)	33213659	0.18	0.04	---	---	---	---	---	0.176	0.0448	
ENDOSULFAN (sulfate)	1031078	No Criteria	80.15	---	---	---	---	---	---	80.1549306	
ENDRIN	72208	0.07	0.03	---	---	---	---	---	0.0688	0.0288	
ENDRIN ALDEHYDE	7421934	No Criteria	0.27	---	---	---	---	---	---	0.27018516	
HEPTACHLOR	76448	0.42	0.00	---	---	---	---	---	0.416	0.00071149	
HEPTACHLOR EPOXIDE	1024573	0.42	0.00	---	---	---	---	---	0.416	0.00035124	
POLYCHLORINATED BIPHENYLS3	1336363	No Criteria	0.00	---	---	---	---	---	---	0.0005764	
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00	---	---	---	---	---	---	4.5931E-08	
TOXAPHENE	8001352	0.58	0.00	---	---	---	---	---	0.584	0.00016	
TRIBUTYLTIN		0.37	0.06						0.368	0.0576	

NON PRIORITY POLLUTANTS:												
OTHER SUBSTANCES												
ALUMINUM (limits are total recoverable)	7429905	600.00	69.60	---	---	---	---	---	600	69.6		
AMMONIA (winter)	7664417	10062.40	3219.52	---	---	---	---	---	10062.4	3219.52		
AMMONIA (summer)		10062.40	1609.28	---	---	---	---	---	10062.4	1609.28		
4BROMOPHENYL PHENYL ETHER	16887006	14.40	0.32	---	---	---	---	---	14.4	0.32		
CHLORIDE	7782505	688000.00	184000.00						688000	184000		
CHLORINE		19.00	11.00	---	---	---	---	---	19	11		
4CHLORO2METHYLPHENOL		12.00	0.26	---	---	---	---	---	12	0.256		
1CHLORONAPHTHALENE	106489	64.00	1.44	---	---	---	---	---	64	1.44		
4CHLOROPHENOL		153.60	3.44	---	---	---	---	---	153.6	3.44		
2,4DICHLORO6METHYLPHENOL		17.60	0.38	---	---	---	---	---	17.6	0.384		
1,1DICHLOROPROPANE	142289	920.00	20.80	---	---	---	---	---	920	20.8		
1,3DICHLOROPROPANE		242.40	5.36	---	---	---	---	---	242.4	5.36		
2,3DINITROTOLUENE		13.60	0.30	---	---	---	---	---	13.6	0.296		
2,4DINITRO6METHYL PHENOL	7439896	9.60	0.21	---	---	---	---	---	9.6	0.208		
IRON	608935	No Criteria	800.00		9220	4160	1487	1487	---	800	NA	Y
pentachlorobenzene		10.40	0.22	---	---	---	---	---	10.4	0.224		
PENTACHLOROETHANE		289.60	6.40	---	---	---	---	---	289.6	6.4		
1,2,3,5tetrachlorobenzene	630206	256.80	5.68	---	---	---	---	---	256.8	5.68		
1,1,1,2TETRACHLOROETHANE	58902	784.00	17.60	---	---	---	---	---	784	17.6		
2,3,4,6TETRACHLOROPHENOL		5.60	0.13	---	---	---	---	---	5.6	0.128		
2,3,5,6TETRACHLOROPHENOL	95954	6.80	0.15	---	---	---	---	---	6.8	0.152		
2,4,5TRICHLOROPHENOL	88062	18.40	0.41	---	---	---	---	---	18.4	0.408		
2,4,6TRINITROPHENOL	1330207	3388.00	75.20	---	---	---	---	---	3388	75.2		
XYLENE		106.40	2.40						106.4	2.4		