RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

April 12, 2012

**CERTIFIED MAIL**

Mr. Michael Gray, PE
Director of Public Works
Town of Jamestown
93 Narragansett Avenue
Jamestown, Rhode Island 02835

**RE: Jamestown Drinking Water Treatment Plant Final Permit**
**RIPDES No. RI0001619**

Dear Mr. Gray:

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 permit.

Also enclosed is information relative to hearing requests and stays of RIPDES Permits.

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Brian Lafaille, PE of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Joseph B. Haberek, PE
Principal Sanitary Engineer

JBH:bl

Enclosures

cc: Traci Pena, RIDEM-OWR (electronic)
Annie McFarland, RIDEM-OWR (electronic)
Michael Gray, Jamestown (electronic)
Peter Bell, Jamestown (electronic)

## RESPONSE TO COMMENTS

NO SIGNIFICANT COMMENTS WERE RECEIVED ON THE DRAFT PERMIT FOR THIS FACILITY; THEREFORE, NO RESPONSE WAS PREPARED.

## HEARING REQUESTS

If you wish to contest any of the provisions of this permit, you may 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:

Bonnie Stewart, Clerk
Department of Environmental Management
Office of Administrative Adjudication
One Capitol Hill - Second Floor
Providence, Rhode Island 02903

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

## 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 Rule 50, 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.
Chief 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 Rule 49.

AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

**The Town of Jamestown**
93 Narragansett Avenue
Jamestown, RI 02835

is authorized to discharge from a facility located at

**Jamestown Water Treatment Plant**
North Road
Jamestown, RI 02835

to receiving waters named

Great Creek Tributary to Narragansett Bay

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

This permit shall become effective on June 1, 2012.

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

This permit supersedes the permit issued on June 6, 2006.

This permit consists of eight (8) pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 13th day of April, 2012.

Angelo S. Liberti

Angelo S. Liberti, PE, Chief of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

PART I

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of the permit and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 002A. (The combined flow from the residuals clarifier and the residuals drying bed prior to discharge to the drainage swale). 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 | | | | Continuous | Calculation |
| TSS | 6 lb/day | 10 lb/day | 30 mg/l | | 50 mg/l | 2/Month[4] | Composite[1] |
| Turbidity | | | --- NTU | | --- NTU | 2/Month[4] | Composite[1] |
| pH | | | (6.5 S.U.) | | (8.5 S.U.) | 2/Month[4] | Grab[2] |
| Total Residual Chlorine | | | 7.5 ug/l[3] | | 13 ug/l[3] | 2/Month[4] | Grab |
| Total Aluminum[4] | | | --- ug/l | | --- ug/l | 2/Month[4] | Grab |

[1] All composite sampling must consist of a minimum of four (4) grabs spaced equally apart during a typical discharge day.

[2] Compliance with these limitations shall be determined by taking a minimum of one (1) grab sample. The grab sample must be analyzed for pH immediately (<15 minutes after sample collection). The maximum value to be reported is the highest individual measurement obtained during the monitoring period. The minimum value to be reported is the lowest individual measurement obtained during the monitoring period.

[3] The following methods may be used to analyze the grab samples: (1) Low Level Amperometric Titration, Standard Methods (18th Edition) No. 4500-Cl E; (2) DPD Spectrophotometric, EPA No. 330.5 or Standard Methods (18th Edition) No. 4500-Cl G. The limit at which compliance/noncompliance determinations will be based is the Quantitation Limit which is defined as 20 ug/l for TRC. This value may be reduced by permit modification as more sensitive methods are approved by EPA and the State.

[4] Every month at least one of the two samples will be taken during the clean in place process. During months when a quarterly membrane cleaning event takes place, one of the monthly samples must be taken at the time when the discharge from the quarterly membrane cleaning event occurs.

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

* Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

**Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 002A (The combined flow from the residuals clarifier and the residuals drying bed prior to discharge to the drainage swale).

2. The pH of the effluent must be in the range of 6.5-8.5 standard units and shall not cause the receiving water to be more than 0.2 standard units outside of its normally occurring range.

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

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

5. The turbidity of the receiving water shall not exceed 5 NTU over background.

6. Solids, sludges, or biosolids removed in the course of treatment or control of wastewaters, shall be properly disposed of in compliance with applicable state laws, regulations, and permit requirements, and in a manner such as to prevent any pollutant from such materials from entering the waters of the state.

7. The permittee is required to maintain and implement a comprehensive Residuals Management Plan. The components of the Residuals Management Plan must include the following:

    A. Characterization of the form, quantity, and quality of the residuals;

    B. Determination of the appropriate regulatory requirements;

    C. Identification of feasible disposal options;

    D. Selection of appropriate residuals processing/treatment technologies and development of a residuals management strategy that meets the regulatory goals established for the water treatment facility;

    E. Development of best management practices which at a minimum include the following: a) an evaluation of the water treatment residuals storage capacity within each residuals treatment unit and identification of criteria which will serve as a trigger to determine when treatment units (i.e. lagoons, equalization basins, etc.) need to be pulled offline in order to avoid short circuiting and potential permit violations; b) development of procedures and periodic evaluation techniques necessary to gauge the remaining storage capacity of residuals treatment units; c) an evaluation of the need for coordination between WTP operators and personnel responsible for the operation of WTP residuals treatment units; d) development of maintenance procedures to deactivate and prepare treatment units for sludge removal. These maintenance procedures must identify the appropriate steps necessary to temporarily lower the water level in the treatment unit, remove settled sludges, and restore the flow through the treatment unit in such a way that degradation of the receiving waters and permit violations will be prevented;

    F. A requirement that all critical activities associated with the operations and maintenance of the water treatment plant residuals treatment units be documented and copies of such documentation be kept on site at all times throughout the effective life of the permit;

    G. A requirement to review the Residuals Management Plan (at a minimum) on a yearly basis and that it must be updated as necessary. A copy of the Residuals Management Plan and records of the annual reviews must be

available on site at all times throughout the effective life of this permit.

The DEM may notify the permittee at any time that the Residuals Management Plan is deficient or does not meet one or more of the minimum requirements of the permit. After such notification from the DEM, the permittee shall make changes to the Residuals Management Plan and shall submit to the DEM a written certification that the requested changes have been made. Unless otherwise provided by the DEM, the permittee shall have thirty (30) days after such notification to make the necessary changes. The permittee shall immediately amend the Residuals Management Plan if it proves to be ineffective in achieving the general objectives of controlling pollutants in discharges associated with the water treatment facility. Changes must be noted and then submitted to the DEM within thirty (30) days of amending the Residuals Management Plan. Amendments to the Residuals Management Plan may be reviewed by the DEM in the same manner as specified above.

8. This permit only authorizes the use of aluminum based water treatment chemicals, chlorine dioxide, potassium hydroxide, citric acid, sodium hypochlorite, and sodium bisulfate as indicated in the permit application. The permittee must notify the DEM and obtain written approval prior to using any other chemicals.

9. 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.

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

B. **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. 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 documented and maintained onsite.

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

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

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

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

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", or zero. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

## LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) 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 |
| Arsenic, Total | 1.0 |
| Beryllium, Total | 0.2 |
| Cadmium, Total | 0.1 |
| Chromium, Total | 1.0 |
| Chromium, Hexavalent | 20.0 |
| Copper, Total | 1.0 |
| Lead, Total | 1.0 |
| Mercury, Total | 0.2 |
| Nickel, Total | 1.0 |
| Selenium, Total | 2.0 |
| Silver, Total | 0.5 |
| Thallium, Total | 1.0 |
| Zinc, Total | 5.0 |
| Asbestos | ** |
| Cyanide, Total | 10.0 |
| Phenols, Total | 50.0 |
| TCDD | ** |
| MTBE (Methyl Tert Butyl Ether) | 1.0 |

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

**NOTE**:

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

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).

## C. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136). Special attention should be put towards following the sampling techniques, preservation, and holding times listed in Table II of 40 CFR Part 136.

2. Reporting

Monitoring results obtained during the previous month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15$^{th}$ day of the month following the completed reporting period.

Signed copies of these, and all other reports required herein, shall be submitted to:

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

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 Rule 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) 222-3961, (401) 222-6519 or (401) 222-2284 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 Rule 14.18 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 Rule 14.18 of the RIPDES Regulations; and

(d) The permittee complied with any remedial measures required under Rule 14.05 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, 291 Promenade Street, Providence, Rhode Island. 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 Rules 15 and 23 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 Rule 49 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. °C | temperature in degrees Centigrade |
| Temp. °F | temperature in degrees Fahrenheit |
| Turb. | turbidity measured by the Nephelometric Method (NTU) |
| TNFR or TSS | total nonfilterable residue or total suspended solids |
| DO | dissolved oxygen |
| BOD | five-day biochemical oxygen demand unless otherwise specified |
| TKN | total Kjeldahl nitrogen as nitrogen |
| Total N | total nitrogen |
| $NH_3$-N | ammonia nitrogen as nitrogen |
| Total P | total phosphorus |
| COD | chemical oxygen demand |
| TOC | total organic carbon |
| Surfactant | surface-active agent |
| pH | a measure of the hydrogen ion concentration |
| PCB | polychlorinated biphenyl |
| CFS | cubic feet per second |
| MGD | million gallons per day |
| Oil & Grease | Freon extractable material |
| Total Coliform | total coliform bacteria |
| Fecal Coliform | total fecal coliform bacteria |
| ml/l | milliliter(s) per liter |
| $NO_3$-N | nitrate nitrogen as nitrogen |
| $NO_2$-N | nitrite nitrogen as nitrogen |
| $NO_3$-$NO_2$ | combined nitrate and nitrite nitrogen as nitrogen |
| $C1_2$ | total residual chlorine |

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.

**RI0001619**

NAME AND ADDRESS OF APPLICANT:

**The Town of Jamestown**
93 Narragansett Avenue
Jamestown, RI 02835

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Jamestown Water Treatment Plant
North Road
Jamestown, Rhode Island

RECEIVING WATER:

Great Creek Tributary to Narragansett Bay

CLASSIFICATION:

SA

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

The above named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is involved in the production of potable water for "domestic" and "industrial" uses. During the last permit cycle the water treatment plant was upgraded to operate as a conventional treatment plant with the addition of a membrane filtration unit. The discharge from outfall 002A is associated with the treatment of membrane filter backwash and membrane filter cleaning discharges. During the backwashing and cleaning process the water treatment residuals resulting from the operation of the membrane filtration units are directed to a sedimentation tank. The supernatant from the sedimentation tank is discharged to a clarifier and from there the clarifier effluent discharges to the Great Creek, tributary to Narragansett Bay via outfall 002A. The settled residuals are periodically pumped from the sedimentation and clarification tanks onto a drying bed, allowed to dewater, and are then disposed of offsite. Any water that is separated from the settled residuals in the drying bed also discharges to the Great Creek via outfall 002A.

## II. Permit Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the draft permit. A quantitative description of the discharge in terms of significant effluent parameters based on discharge monitoring report (DMR) data for the last five years is shown in Attachment A.

## III. Permit Basis and Explanation of Effluent Limitation Derivation

*The Facility*

The Town of Jamestown operates a Water Treatment Plant on North Road in Jamestown, RI. The Water Treatment Plant (WTP) is engaged in the treatment of surface and groundwater to produce potable water for "domestic" and "industrial" uses. Jamestown depends on a limited supply of fresh water replenished only by rainfall. Forty-three percent of residents rely on municipal water provided by the Jamestown Water District. Public water comes from two surface reservoirs, both part of the Jamestown Brook watershed, and bedrock wells closely associated with the northern reservoir. The Carr Pond Reservoir, also known as North Pond, is the primary supply. Its outlet forms Jamestown Brook. The Watson Pond Reservoir, or South Pond, is a 7-acre impoundment at the southern end of Jamestown Brook. Although the watershed is much larger, this is a secondary supply with much lower yield. The Jamestown Wellhead Protection Area (WHPA) overlaps large portions of the Jamestown Brook watershed. Groundwater pumped from wells just south of Carr Pond is discharged directly into the reservoir intake to augment the surface supply.

*Treatment Process and Membrane Filtration Backwash Procedure*

The plant currently treats raw surface water by a series of processes before potable water can be distributed to consumers. The water treatment plant receives incoming raw water which is treated with chlorine dioxide prior to entering the raw water wet well. As the water is pumped to the flocculation basin potassium hydroxide and aluminum sulfate (alum) are added. After leaving the flocculation basin, pretreated water then enters the zenon membrane filtration basin for solids removal. At this point in the process the following chemicals are added at various stages of operation: potassium hydroxide (as required for pH neutralization), citric acid and sodium hypochlorite (for periodic membrane cleaning), and sodium bisulfate (for chlorine neutralization). During operation of the membrane filtration system coagulated water is introduced into a membrane process tank where vacuum permeate pumps draw water through the membrane filters. The clean permeate water is disinfected with sodium hypochlorite and piped to the clearwell where a corrosion inhibitor and potassium hydroxide (for pH adjustment) are added for corrosion control prior to distribution as potable water. In order to maintain the flow through the membranes at a relatively constant rate, while not requiring excessive vacuum from the permeate pump, short back-flush cycles are performed where clean permeate water is forced backwards through the membrane to dislodge solids that may have collected on the membrane. The back-pulse water remains in the membrane process tank. Periodically the solids that accumulate in the process tank need to be discharged to waste. To remove these solids the facility drains the process tank to the existing equalization tank wetwell and from there it is pumped to the sedimentation tank where the solids settle and the supernatant is recycled back to the raw water wetwell. Any remaining volume that enters the sedimentation tank that is not recycled is directed to a clarifier for additional solids removal prior to discharge to the receiving water. Solids that collect in the sedimentation tank and clarifier are periodically discharged to the existing residuals drying bed. All filtered water leaving the bottom of the sand filter and the supernatant from the clarifier are directed to outfall 002A.

*Membrane Recovery - Chemical Cleaning*

During the operation of the membrane system, despite periodic back-pulsing, fouling of the membrane will occur which necessitates chemical cleaning of the membranes. Chemical cleaning consists of two separate processes: maintenance cleaning and clean in place (CIP). Maintenance cleaning is currently conducted on a quarterly basis, while CIP discharges will take place on a monthly basis. Both cleaning processes take place in the membrane process tank. Each membrane cleaning process entails soaking the membrane filters in a citric acid solution (pH 2.2) for several hours and then draining the process tank. The waste from this process will be neutralized in the tank with potassium hydroxide. Following cleaning with citric acid, the membranes are allowed to soak in the process tank in a chlorine solution (250 mg/L) for several hours. Following this process, any remaining chlorine will be neutralized within the process tank with sodium bisulfite and pH adjusted with potassium hydroxide prior to discharge to the equalization tank wet well. The maintenance cleaning process and the clean in place (CIP) process are the same in all respects with the exception that the CIP process will be completed on a monthly basis, while the maintenance cleaning process is longer in duration and is conducted on a quarterly basis. The discharges associated with the membrane plant were identified as outfall 002A in the previous permit and this naming convention has been continued in this permit. A copy of the Ultrafiltration Membrane Treatment System Schematic is included in Attachment B.

*Receiving Water*

The receiving water for all discharges including both the existing and proposed WTP will be to the Great Creek, tributary to Narragansett Bay. This surface water body is designated as Water Use Classification "SA" designating these waters for shellfish harvesting, direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.

*General Requirements*

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based discharge levels based on instream criteria, background data and available dilution; establishing Best Professional Judgement (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States 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.

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with the aquatic life criteria, specifying that the design flow to be utilized for aquatic life criteria shall not be exceeded at or above the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years (7Q10). Because Outfall 002A discharges directly into a wetland complex prior to flowing into the Great Creek, tributary to Narragansett Bay, and there is no current background or dilution data available for the point of discharge, a dilution factor of one (1) was used in the determination of water quality-based discharge limits.

*Water Quality Based Permit Limitations*

The allowable effluent limitations were established based on the saltwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations, as amended, using 80% allocation when no background data was available and 90% allocation when background data is available. There is no background data available, therefore, the allowable water quality-based discharge levels are set equal to 80% of the water quality criteria for Class SA waters as listed in Appendix B of the Rhode Island Water Quality Regulations. 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.

For water quality-based limitations the allowable discharge limits were calculated using the following equation:

$$Limit = (Criteria)*(80\%)$$

In accordance with 40 CFR 122.44(d)(1)(iii), water quality based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedence of instream criteria. In order to evaluate the need for permit limits, the allowable monthly average (chronic) and allowable maximum daily (acute) discharge concentrations are compared to the monthly average and maximum daily Discharge Monitoring Report (DMR) data or other monitoring data.

*Total Suspended Solids*

The previous permit issued on June 6, 2006 included monthly average limits for TSS of 6 lb/day and maximum daily limits of 10 lb/day. The previous permit also established concentration based limits for TSS at 30 mg/l monthly average and 50 mg/l daily maximum based on Best Professional Judgement (BPJ) for the treatment capabilities of wastewater treatment systems currently used for the treatment of potable water treatment waste streams throughout the country. The DEM has determined that the use of the Best Available Treatment technologies are not cost prohibitive and that by using the Best Available Treatment technologies such as a settling lagoon or other device(s) whereby comparable control of suspended solids is possible, the 30 mg/l and 50 mg/l TSS limitations can be achieved. According to the U.S. Environmental Protection Agency Filter Backwash Recycling Rule Technical Guidance Manual, there are several options available for solids separation from spent filter backwash water and other residual waste streams. Typical treatment technologies that are available to meet these limits are settling lagoons, sand drying beds, mechanical dewatering systems such as tube and plate settlers and centrifuge equipment. The previous concentration based TSS limits have been carried forward for outfall 002A. Mass based limits for outfall 002A have also been carried forward from the previous permit.

*Turbidity*

Turbidity monitoring requirements have been included in this permit in order to establish a database of NTU data that can be used to determine compliance with water quality criteria. These limitations have been applied to outfall 002A. The permit also includes a narrative condition that the receiving water's turbidity not be increased more than 5 NTU over background.

*Total Aluminum*

The Jamestown WTP utilizes aluminum –based chemistry (e.g. aluminum sulfate) as the primary coagulation agent in the water treatment process. The DEM has determined that limits for Total Aluminum are not necessary given the fact that the water quality criteria for Total Aluminum have not been established for salt waters. However, the DEM will continue to have the Town of Jamestown monitor the discharge for Total Aluminum at a frequency of twice per month.

*Total Residual Chlorine*

Total Residual Chlorine (TRC) limits have been assigned in this permit due to the fact that there is reasonable potential for the discharge to exceed water quality criteria limits for TRC. When calculating TRC limits 100% allocation of TRC was used due to the fact that chlorine is not expected to be found in ambient water and it is a non-conservative pollutant. Therefore, the permit limit is calculated using the following equation:

*Limit = (Criteria)*(100%)*

Based on the above mentioned equation, limits for chlorine were calculated as: Monthly Average Limit (ug/l) = 7.5, and Maximum Daily Limit (ug/L) = 13. These limitations have been applied to outfall 002A. However, since these limits are below the concentrations that can be accurately measured, the limit at which compliance/noncompliance determinations will be based is the Quantitation Limit which is defined as 20 ug/l for TRC. These values may be reduced by permit modification as more sensitive methods are approved by EPA and the State.

*pH*

The effluent limitations for pH have been established in accordance with the Rhode Island Water Quality Regulations Table 2.8.D.(3) Class Specific Criteria –Class SA - Sea Waters. Table 2.8.D.(3) Class Specific Criteria – Class SA - Sea Waters specifies that the pH must be in the range of 6.5-8.5 s.u. but not more than 0.2 units outside of the normally occurring range. These limitations have been applied to outfall 002A.

*Residuals Management Requirements*

Water treatment plant residuals form when suspended solids in the raw water react with chemicals such as coagulants added in the treatment process and from the addition of other process control chemicals such as alum. Some potable water treatment processes generate residuals
that are relatively easy to process and dispose of. For example, leaves, limbs, logs, plastic bottles, and other large floating debris separated from water during the initial screening process can be disposed of at conventional solid waste landfills. However, most other treatment processes produce more complex residual waste streams that may require advanced processing and disposal methods to protect human health and the environment. The primary residuals produced at the existing Jamestown WTP are sludges (i.e., water that contains suspended solids from the source water and the reaction products of chemicals added in the treatment process). For a typical coagulation, flocculation, and filtration system such as the units in operation at the Jamestown WTP the typical disposal options for these residuals consist of the following: landfilling, directly discharging to the sanitary sewer under authorization of the local industrial pretreatment program, or by shipping the residuals to a facility which possesses an effective Solid Waste Beneficial Use Determination (BUD) issued by the DEM Office of Waste Management. This permit requires a Residuals Management Plan to be maintained by the facility.

*Water Treatment Chemicals*

TRC, Total Aluminum monitoring, and pH limits have been assigned in the permit to regulate the concentrations of Aluminum-based treatment chemicals, Chlorine Dioxide, Sodium Hypochlorite, Potassium Hydroxide, and Citric Acid present at outfall 002A. These limits will adequately control the usage of the above-mentioned treatment chemicals.

*Stormwater*

This permit does not authorize the discharge of stormwater from the facility. Based on the RIPDES Program's review it has been determined that facilities that fall under SIC code 4941 – Distribution of Potable Water are not required to obtain coverage under the RIPDES Storm Water Multi-Sector General Permit and therefore the facility is not required to apply.

*Anitbacksliding/Antidegradation*

The draft permit is being reissued with limitations as stringent as or more stringent than those in the existing permit with no change to the outfall location. The Anitbacksliding Provision of the Clean Water Act (found at Section 402(o) and repeated at 40 CFR 122.44(l)) prohibits reissuing a permit containing less stringent effluent limits than the comparable limits from the previous permit. Since none of the permit limits, both concentration and mass loadings, are less stringent than in the previous permit, antibacksliding and antidegradation regulations are being met.

*Selection of Final Permit Limits*

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41(j), 122.44(l), and 122.48 to yield data representative of the discharge. The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation 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 consisting primarily of management requirements common to all permits.

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

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

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a

formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

## V. DEM Contact

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

Brian D. Lafaille, PE
RIPDES Program
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, ext. 7731
Email: brian.lafaille@dem.ri.gov

2/21/12
Date

Joseph B. Haberek, PE
Principal Sanitary Engineer
RIPDES Permitting Section
Office of Water Resources
Department of Environmental Management

## ATTACHMENT A

**DESCRIPTION OF DISCHARGE:** Treated membrane filter backwash and cleaning discharge
**DISCHARGE:** 002A

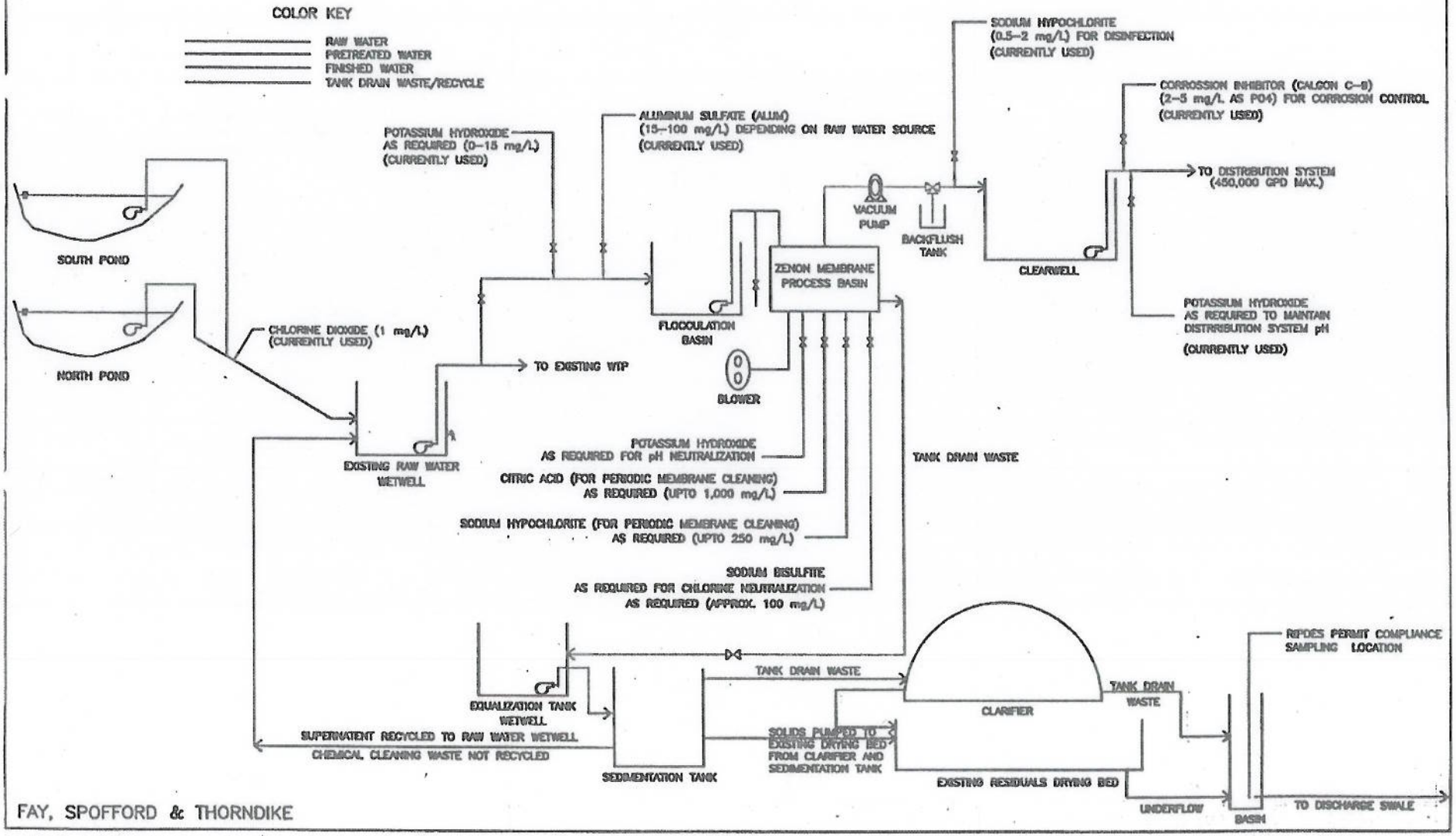
AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

| PARAMETER | MONTHLY AVERAGE[1] | DAILY MAX[1] |
|---|---|---|
| Aluminum, total (as Al) (mg/l) | 3.6 | 5.8 |
| Chlorine, total residual (ug/l) | 0 | 0 |
| pH (s.u.) | 7.24 (min) | 7.32 (max) |
| TSS (LB/DAY) | 1.88 | 3.18 |
| TSS (mg/l) | 15.10 | 22.72 |
| Flow (MGD) | 0.01 | 0.02 |
| Turbidity | 4.71 | 6.2 |

[1] All data represents the average of the monthly average and daily maximum Discharge Monitoring Report data submitted by the permittee for August 2006 thru August 2011.

**ATTACHMENT B**

# FIGURE 2: ULTRAFILITRATION MEMBRANE TREATMENT SYSTEM SCHEMATIC JAMESTOWN DEPARTMENT OF PUBLIC WORKS JAMESTOWN, RHODE ISLAND




FAY, SPOFFORD & THORNDIKE