



State of New Jersey

CHRIS CHRISTIE
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code – 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
P.O. Box 420 – 401 E State St
Trenton, NJ 08625-0420
Phone: (609) 292-4860 / Fax: (609) 984-7938

BOB MARTIN
Commissioner

KIM GUADAGNO
Lt. Governor

October 9, 2015

Via Email

Mr. Daniel F. Becht, Esq., Executive Director
Jersey City MUA
555 RT 440
Jersey City, NJ 07305

Re: Final Surface Water Minor Modification Permit Action
Category: CSM - Combined Sewer Management
NJPDES Permit No. NJ0108723
JERSEY CITY MUN UTIL AUTH
Jersey City, Hudson County

Dear Mr. Becht:

Enclosed is a **final** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A. This permit action serves to modify the renewal permit that was issued by the Department on March 12, 2015. This minor modification serves to correct some typographical errors, and clarify the CSO Submittal Summary. These changes and the affected portion of the permit are as follows:

1. Public Participation Submittal Requirements, CSM Part IV.D.3.b.iii.

Language is changed as follows with deletions shown as strikethrough and additions shown as underline:

- b. The permittee shall develop an approvable LTCP that will include the Elements contained in Section G. The LTCP shall consist of the following steps and be submitted according to the schedule below.....
- iii. Step 1b2 - In accordance with G.2., the permittee shall submit the Public Participation Process Report Plan: within 36 months from the effective date of the permit (EDP).

1a. Public Participation Process, CSM Part IV.G.2.a and b.i

- a. The permittee shall submit the Public Participation Process Report Plan...
- b. Implementation shall actively involve the affected public throughout....A Public Participation Process Report Plan shall include the following elements:
 - i. Conduct outreach to inform the affected/interested public (during the development of the permittee's LTCP) through various methods which may include including: public meetings, direct mailers, billing inserts, newsletters, press releases to the media, postings of information on the permittee's website, hotline, development of advisory committees, etc.; and to

Rationale for change: The Public Participation Plan (Parts IV D.3.b.iii, G. 2. a. & b.) has been renamed to Public Participation Process Report for consistency and to reflect the fact that it is not due until after the plan has been implemented. Additionally, the change to Part IV.G.2.b.i ensures that the permit language is consistent with the Response to Comment document in the March 12, 2015 final permit. Response to comment #32 of section D includes the excerpt as written above; however, the permit did not carry forward that intended language.

2. Evaluation of Alternatives, CSM Part IV.G.4.f

Language is changed as follows:

f. The "Presumption" Approach, in accordance with N.J.A.C 7:14A-11 Appendix C provides:.....

The permittee must demonstrate any ~~each~~ of the following three criteria below:.

- i. No more than an average of four overflow events (see below) per year from a hydraulically connected system as the result of a precipitation event that does not receive the minimum treatment specified below. The Department may allow up to two additional overflow events per year. For the purpose of this criterion, an 'event' is:
 - In a hydraulically connected system that contains only one CSO outfall, multiple periods of overflow are considered one overflow event if the time between periods of overflow is no more than 24 hours.
 - In a hydraulically connected system that contains more than one CSO outfall, multiple periods of overflow from one or more outfalls are considered one overflow event if the time between periods of overflow is no more than 24 hours without a discharge from any outfall.
- ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a hydraulically connected system-wide annual average basis.
- iii. The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under Section G.4.f.ii.

Rationale for change: This change ensures that the permit language is consistent with the CSO Control Policy as stated at N.J.A.C. 7:14A-11. Specifically, N.J.A.C. 7:14A-11 Appendix C describes the Presumption Approach as "A program that meets **any** of the criteria listed below would be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA..." (bold added)

3. Cost/Performance Consideration, CSM Part IV.G.5.a

Language is changed as follows with deletions shown as strikethrough and additions shown as underline:

a. The permittee shall submit in accordance with the submittal requirements at Sections D.3.a. and D.3.b.v., the cost/performance considerations that demonstrate the relationships among proposed control alternatives that correspond to those required in accordance with Section G.4.....

In accordance with Section G.1.a., the permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information, such as: ~~include bulleted list of all applicable studies here~~

i. Jersey City MUA:

Jersey City Municipal Utilities Authority Cost and Performance Analysis Report, prepared by Malcolm Pirnie, Inc., dated April 2007.

Jersey City Municipal Utilities Authority CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

Rationale for change: The change to Part IV.G.5.a corrects a typographical error that was included in the March 12, 2015 final permit. The studies referenced in Part IV.G.5.a. of the January 17, 2014 Draft permit were inadvertently omitted in the March 12, 2015 final permit and are hereby being included as Part IV.G.5.a.i in this final permit modification.

4. Clarification of CSO Submittal Summary

The Department included a CSO Submittal Summary as an attachment to the cover letter for all NJPDES CSO permits. We have attached an updated version of the CSO Submittal Summary to include the actual dates; organized the items in chronological order; and corrected the discrepancy within the CSO Submittal Summary so that it is consistent with the requirements of CSM Part IV.

To illustrate the changes regarding the Emergency Plan and Public Participation, an excerpt of the CSO Submittal Summary is as follows with deletions shown as strikethrough and additions shown as underline:

Summary of Reports or Requirements that are to be Completed and Retained On-Site (i.e. not submitted to the Department)		
Permit Condition	Abbreviated Description of Requirement	LTCP Due Date
Part IV.D.3.b.iii	Submit Public Participation Process <u>Report</u> Plan	
Part IV.D.4.b.iv	Update O&M Manual with SOPs, Asset Management Plan and Emergency Plan	EDP+12 months <u>July 1, 2016</u> and Annually thereafter
Part IV.F.1.1	Insert Emergency Plan in O&M Manual	EDP+6 months

Rationale for change: In addition to organizing the CSO Submittal Summary by due date (not permit section) the Public Participation Process Plan has been renamed to Public Participation Process Report for consistency and to reflect the fact that it is not due until after the plan has been implemented.

Also, the due date for updates to the O&M and Emergency Plan has been corrected to reflect the permit requirement at Part IV-CSM, section F.1.a. This section reads, in part: The permittee shall continue to update annually, an Operation & Maintenance (O&M) Program and corresponding Manual, including an Emergency Plan.

Please note that the Department continues to post a variety of resources on our website at <http://www.state.nj.us/dep/dwq/cso.htm>. The Progress Report Template; Quick Guide for CSO Discharge Monitoring Report (DMR) Form Submission; and Questions from External Team Meetings may be helpful tools in permit compliance.

Questions or comments regarding the final action should be addressed to Dwayne Kobesky via email at Dwayne.Kobesky@dep.nj.gov or phone at (609) 292-4860.

Sincerely,

A handwritten signature in cursive script that reads "Joseph Mannick".

Joseph Mannick, Supervisor
Bureau of Surface Water Permitting

Enclosures

cc: Permit Distribution List
Masterfile #: 38217; PI #: 47745

CSO Submittal Summary

Summary of Reports Required to be Submitted to the Department		
Permit Condition	Abbreviated Description of Requirement	59 Month LTCP Due Date
Part III	Discharge Monitoring Reports (due 25 th day of the month following the reporting period) - Solids/Floatables and Precipitation	Monthly from July 1, 2015
Part IV.D.4.a	Submit Progress Reports (due 25 th day of the month following the quarter)	Quarterly from July 1, 2015
Part III	Discharge Monitoring Report (due 25 th day of the month following the reporting period) – Duration of Discharge	Monthly from January 1, 2016
Part IV.D.2.a	Submit GPS latitude and longitude for pump stations, CSO regulators and CSO outfalls	January 1, 2016
Part IV.D.3.b.i	Submit System Characterization Work Plan	January 1, 2016
Part IV.D.3.c	Submit Baseline Compliance Monitoring Program Work Plan	January 1, 2016
Part IV.D.2.b	Submit a map of combined and separate sewer areas	July 1, 2016
Part IV.D.3.b.ii	Submit System Characterization Report	July 1, 2018
Part IV.D.3.b.iii	Submit Public Participation Process Report	July 1, 2018
Part IV.D.3.d	Submit Compliance Monitoring Program Report	July 1, 2018
Part IV.D.3.b.iv	Submit Consideration of Sensitive Areas Plan	July 1, 2018
Part IV.D.3.b.v	Submit Development and Evaluation of Alternatives Report	July 1, 2019
Part IV.D.3.b.vi	Submit Selection and Implementation of Alternatives Report in the Final LTCP	June 1, 2020

Summary of Reports or Requirements that are to be Completed and Retained On-Site (i.e. not submitted to the Department)		
Permit Condition	Abbreviated Description of Requirement	59 Month LTCP Due Date
Part IV.D.2.c	Install outfall signs	January 1, 2016
Part IV.F.1.f.	Update the characterization of the system's infrastructure (list of sewer system components and SIUs) using a spreadsheet	January 1, 2016
Part IV.F.1.h	Create anticipated schedule to revise Rules/Ordinances/Sewer Use Agreements to reduce I/I	January 1, 2016
Part IV.F.1.i and Part IV.D.4.b.iv	Insert SOPs in O&M Manual	January 1, 2016
Part IV.F.1.g	Insert characterization on a GIS Map	July 1, 2016
Part IV.F.8.c.iii	Create and maintain Telephone Hot Line or Website	July 1, 2016
Part IV.D.4.b.iv	Update O&M Manual with SOPs, Asset Management Plan and Emergency Plan	July 1, 2016 and Annually thereafter
Part IV.F.1.k	Insert and update an Asset Management Plan in O&M Manual	July 1, 2016 and Annually thereafter

Table of Contents

This permit package contains the following items with an explanation as to which changes were incorporated into the minor modification as compared to the March 12, 2015 final permit:

- 1. Cover Letter - N/A**
- 2. CSO Submittal Summary - MODIFIED**
- 3. Table of Contents - N/A**
- 4. Response to Comments - REMOVED FROM THIS COPY**
- 5. NJPDES Permit Authorization Page - MODIFIED**
- 6. Part I – General Requirements: NJPDES - UNCHANGED**
- 7. Part II – General Requirements: Discharge Categories - UNCHANGED**
- 8. Part III – Limits and Monitoring Requirements - UNCHANGED**
- 9. Part IV – Combined Sewer Management - MODIFIED**
- 10. Appendix A: Design Standards for Storm Drain Inlets – UNCHANGED**
- 11. Appendix B: List of Studies – PVSC and Hydraulically Connected Sewer Systems – UNCHANGED**



NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0108723

Final: Surface Water Minor Mod Permit Action

Permittee:

Jersey City MUA
555 Route 440
Jersey City, NJ 07305

Co-Permittee:

Property Owner:

Jersey City MUA
555 Route 440
Jersey City, NJ 07305

Location Of Activity:

Jersey City MUA
Combined Sewer Collection System
Jersey City, Hudson County

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
CSM -Combined Sewer Management (Minor Mod)	10/01/2015	07/01/2015	06/30/2020
CSM -Combined Sewer Management (Renewal)	03/12/2015	07/01/2015	06/30/2020

**By Authority of:
Commissioner's Office**

DEP AUTHORIZATION
Joseph Mannick, Supervisor
Bureau of Surface Water Permitting
Water Pollution Management Element
Division of Water Quality

(Terms, conditions and provisions attached hereto)

Division of Water Quality

PART I GENERAL REQUIREMENTS: NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

- a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.
- b. General Conditions
 - Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
 - Incorporation by Reference N.J.A.C. 7:14A-2.3
 - Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
 - Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
 - Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
 - Inspection and Entry N.J.A.C. 7:14A-2.11(e)
 - Enforcement Action N.J.A.C. 7:14A-2.9
 - Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
 - Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9
 - Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
 - Severability N.J.A.C. 7:14A-2.2
 - Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
 - Permit Actions N.J.A.C. 7:14A-2.7(c)
 - Reopener Clause N.J.A.C. 7:14A-6.2(a)10
 - Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
 - Consolidation of Permit Process N.J.A.C. 7:14A-15.5
 - Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
 - Fee Schedule N.J.A.C. 7:14A-3.1
 - Treatment Works Approval N.J.A.C. 7:14A-22 & 23
- c. Operation And Maintenance
 - Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
 - Proper Operation and Maintenance N.J.A.C. 7:14A-6.12
- d. Monitoring And Records
 - Monitoring N.J.A.C. 7:14A-6.5
 - Recordkeeping N.J.A.C. 7:14A-6.6
 - Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9
- e. Reporting Requirements
 - Planned Changes N.J.A.C. 7:14A-6.7
 - Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
 - Noncompliance Reporting
 - Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
 - Written Reporting N.J.A.C. 7:14A-6.10(c) & (d)
 - Duty to Provide Information N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
 - Schedules of Compliance N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
 - Transfer N.J.A.C. 7:14A-6.4
 - N.J.A.C. 7:14A-6.2(a)8 & 16.2

PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated By Reference

1. Requirements for Discharges to Surface Waters

- a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.
 - i. Surface Water Quality Standards N.J.A.C. 7:9B-1
 - ii. Water Quality Management Planning Regulations N.J.A.C. 7:15

B. General Conditions

1. Scope

- a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

2. Permit Renewal Requirement

- a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.
- b. Submit a complete permit renewal application: 180 days before the Expiration Date.

3. Notification of Non-Compliance

- a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).
- b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

4. Notification of Changes

- a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.
- b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

5. Access to Information

- a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

6. Operator Certification

- a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.
 - i. Notifications shall be submitted to:
NJDEP
Bureau of Licensing and Pesticide Operations
Mail Code 401-04E
P.O. Box 420
Trenton, New Jersey 08625-0420
(609)777-1012.
- b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

7. Operation Restrictions

- a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condition for water or waste, except as specifically authorized by a valid NJPDES permit.

8. Residuals Management

- a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:
 - i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;
 - ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;
 - iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;
 - iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;
 - v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and
 - vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.
 - vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

- b. If any applicable standard for residual use or disposal is promulgated under section 405(d) of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.
- c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.
- d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.

C. Custom Requirement

1. CSO Reopener Clause

- a. This reopener clause authorizes the NJDEP to reopen and modify the permit upon determination that the CSO controls as contained in an approved LTCP fail to meet WQS or protect designated uses.

PART III

LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:

001A CSO

RECEIVING STREAM:

Penhorn Creek

STREAM CLASSIFICATION:

FW2-NT/SE2(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 001A into the Penhorn Creek approximately 650-feet west of Tonnele Avenue along the west side of Secaucus Road at:

Latitude N: 40d 45m 39.2s

Longitude W: 74d 03m 11.5s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

For this outfall, the total quantity of Solids/Floatables removed from all outfalls shall be reported here when the solid waste is measured for disposal. Precipitation shall be reported from a rain gauge representative of the area, and Duration of Discharge shall be reported as a whole day for any day when a discharge occurs.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: 1 - Initial

PHASE Start Date: 07/01/2015

PHASE End Date: 12/31/2015

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids/Floatables	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	CU YARDS	1/Month	Measured
	January thru December	QL	***		***	***	***			
Precipitation	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# INCHES	1/Month	Measured
	January thru December	QL	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

For this outfall, the total quantity of Solids/Floatables removed from all outfalls shall be reported here when the solid waste is measured for disposal. Precipitation shall be reported from a rain gauge representative of the area, and Duration of Discharge shall be reported as a whole day for any day when a discharge occurs.

Table III - A - 2: Surface Water DMR Limits and Monitoring Requirements

PHASE:2 - Final **PHASE Start Date:** 01/01/2016 **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Solids/Floatables	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	CU YARDS	1/Month	Measured
	January thru December	QL	***		***	***	***			
Precipitation	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# INCHES	1/Month	Measured
	January thru December	QL	***		***	***	***			
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
002A CSO

RECEIVING STREAM:
Penhorn Creek

STREAM CLASSIFICATION:
FW2-NT/SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 002A into the Penhorn Creek approximately 1500-feet west of the west end of Manhattan Avenue at:

Latitude N: 40d 44m 50.7s

Longitude W: 74d 04m 10.3s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - B - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
003A CSO

RECEIVING STREAM:
Hackensack River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 003A into the Hackensack River approximately 500-feet west of the intersection of St Pauls Avenue and Duffield Avenue at:

Latitude N: 40d 44m 31.0s

Longitude W: 74d 04m 36.9s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - C - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final **PHASE Start Date:** 07/01/2015 **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
004A CSO

RECEIVING STREAM:
Hackensack River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 004A into the Hackensack River approximately 250-feet south of the west end of Howell Street at:

Latitude N: 40d 44m 24.3s

Longitude W: 74d 04m 44.1s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - D - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
005A CSO

RECEIVING STREAM:
Hackensack River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 005A into the Hackensack River at the west end of Broadway at:

Latitude N: 40d 44m 22.2s

Longitude W: 74d 04m 56.2s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - E - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:

006A CSO

RECEIVING STREAM:

Hackensack River

STREAM CLASSIFICATION:

SE2(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 006A into the Hackensack River at the west end of Sip Avenue at:

Latitude N: 40d 44m 04.3s

Longitude W: 74d 04m 52.9s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - F - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:

007A CSO

RECEIVING STREAM:

Hackensack River

STREAM CLASSIFICATION:

SE3(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 007A into the Hackensack River at the west end of Duncan Avenue at:

Latitude N: 40d 44m 03.4s

Longitude W: 74d 05m 37.11s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - G - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
008A CSO

RECEIVING STREAM:
Hackensack River

STREAM CLASSIFICATION:
SE3(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 008A into the Hackensack River at the west end of Clendenny Avenue at:

Latitude N: 40d 43m 24.28s

Longitude W: 74d 05m 33.75s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - H - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:

009A CSO

RECEIVING STREAM:

Hackensack River

STREAM CLASSIFICATION:

SE3(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 009A into the Hackensack River at the west end of Claremont Avenue at:

Latitude N: 40d 43m 10.58s

Longitude W: 74d 05m 51.81s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - I - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:

010A CSO

RECEIVING STREAM:

Hackensack River

STREAM CLASSIFICATION:

SE3(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 010A into the Hackensack River at the west end of Fisk Street at:

Latitude N: 40d 43m 03.59s

Longitude W: 74d 06m 4.48s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - J - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
011A CSO

RECEIVING STREAM:
Newark Bay

STREAM CLASSIFICATION:
SE3(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 011A into Newark Bay approximately 500-feet southwest of the intersection of Cherry Street and Cottonwood Street at:

Latitude N: 40d 42m 13.77s

Longitude W: 74d 06m 23.17s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - K - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:

013A CSO

RECEIVING STREAM:

Newark Bay

STREAM CLASSIFICATION:

SE3(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 013A into Newark Bay at the west end of Mina Drive at:

Latitude N: 40d 41m 58.49s

Longitude W: 74d 06m 16.24s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - L - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
014A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 014A into the Hudson River approximately 3000-feet northeast of the intersection of Port Jersey Blvd and Colony Road at:

Latitude N: 40d 40m 47s

Longitude W: 74d 04m 25s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - M - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE:Final **PHASE Start Date:** 07/01/2015 **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
015A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 015A into the Hudson River approximately 500-feet southeast of the intersection of Freedom Way and Chapel Avenue at:

Latitude N: 40d 41m 19s

Longitude W: 74d 04m 33s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - N - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
016A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 016A into the Hudson River approximately 1300-feet east of the intersection of Thomas McGovern Drive and Freedom Way at:

Latitude N: 40d 41m 47s

Longitude W: 74ds 03m 04s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - O - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:
018A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 018A into the Hudson River approximately 200-feet south of the west end of Aetna Street at:

Latitude N: 40d 42m 46s

Longitude W: 74d 03m 13s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - P - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

MONITORED LOCATION:

020A CSO

RECEIVING STREAM:

Hudson River

STREAM CLASSIFICATION:

SE2(C2)

DISCHARGE CATEGORY(IES):

CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 020A into the Hudson River at the east end of Essex Street at:

Latitude N: 40d 42m 45s

Longitude W: 74d 01m 60s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - Q - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final

PHASE Start Date: 07/01/2015

PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
025A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 025A into the Hudson River at the east end of 2nd Street at:

Latitude N: 40d 43m 16s

Longitude W: 74d 01m 53s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - R - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
026A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 026A into the Hudson River at the east end of Thomas Gangemi Drive at:

Latitude N: 40d 43m 26.90s

Longitude W: 74d 02m 02.49s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - S - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
028A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 028A into the Hudson River at the east end of 14th Street at:

Latitude N: 40d 43m 52.94s

Longitude W: 74d 01m 51.51s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - T - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
January thru December	QL	***	***		***	***	***			

MONITORED LOCATION:
029A CSO

RECEIVING STREAM:
Hudson River

STREAM CLASSIFICATION:
SE2(C2)

DISCHARGE CATEGORY(IES):
CSM - Combined Sewer Management

Location Description

The permittee is authorized to discharge combined sewage from Outfall 029A into the Hudson River approximately 450-feet east of the intersection of 18th Street and Marin Blvd at:
Latitude N: 40d 44m 03.57s
Longitude W: 74d 02m 14.59s

Contributing Waste Types

Sanitary, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Duration of Discharge shall be reported as whole day for any day when a discharge occurs.

Table III - U - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final PHASE Start Date: 07/01/2015 PHASE End Date:

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Total	*****	# OF DAYS	1/Month	Estimated
	January thru December	QL	***		***	***	***			

PART IV

SPECIFIC REQUIREMENTS: NARRATIVE

Notes and Definitions

A. Footnotes

1. These notes are specific to this permit

a. EDP means the Effective Date of the Permit which can be found on the final permit authorization page.

2. CSO related resources are listed below with a link to the current webpage

a. NJDEP's CSO main website and related links can be found at <http://www.nj.gov/dep/dwq/cso.htm>

b. EPA's Combined Sewer Overflows Principal Guidance Documents can be found at <http://water.epa.gov/polwaste/npdes/cso/Guidance-Documents.cfm>

c. The Nine Minimum Control requirements from the National CSO Policy along with EPA's guidance document can be found at N.J.A.C. 7:14A-11.12-Appendix C and <http://www.epa.gov/npdes/pubs/owm0030.pdf>

d. The Nine elements of a Long Term Control Plan from the National CSO Policy along with EPA's guidance document can be found at N.J.A.C. 7:14A-11.12-Appendix C and <http://water.epa.gov/polwaste/npdes/cso/upload/owm0272.pdf>

e. EPA's Post Construction Compliance Monitoring Guidance document can be found at http://www.epa.gov/npdes/pubs/final_cso_pccm_guidance.pdf

f. EPA's Guidance: Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews (PDF)

g. EPA's Capacity, management, operation and maintenance (CMOM) guidance document can be found at http://www.epa.gov/npdes/pubs/cmom_5.pdf

h. Dry-Weather Deposition and Flushing for Combined Sewer Overflow Pollution Control: <http://nepis.epa.gov/Adobe/PDF/30000821.PDF>

i. Combined sewer overflow control (manual): <http://nepis.epa.gov/Adobe/PDF/30004MAO.pdf>

j. EPA's Storm Water and Combined Sewer Overflows Publications can be found at <http://water.epa.gov/polwaste/wastewater/StormwaterPubs.cfm>

B. Definitions

1. These definitions are specific only to this permit

- a. "Dry weather overflow (DWO)" means a combined sewer overflow that cannot be attributed to a precipitation event, including snow melt, within the hydraulically connected system. DWOs include the following flows: domestic sewage, dewatering activities, commercial and industrial wastewaters, ground water and tidal infiltration upstream of the regulator, and any other non-precipitation event related flows downstream of the regulator to the outfall pipe.

Groundwater infiltration and tidal infiltration originating downstream of the regulator are allowable sources of discharges from a CSO during dry weather. On a case-by-case basis, the Department reserves the right to allow temporary use of the CSO outfall structures for other types of discharges to address extraordinary circumstances. Such use must be specifically approved by the Department.

- b. "Green Infrastructure" means methods of stormwater management that reduce wet weather/stormwater volume, flow, or changes the characteristics of the flow into combined or separate sanitary or storm sewers, or surface waters, by allowing the stormwater to infiltrate, to be treated by vegetation or by soils; or to be stored for reuse. Green infrastructure includes, but is not limited to, pervious paving, bioretention basins, vegetated swales, and cisterns.
- c. "Hydraulically connected system" means the entire collection system that conveys flows to one Sewage Treatment Plant (STP). On a case-by-case basis, the permittee, in consultation with the Department, may segment a larger hydraulically connected system into a series of smaller inter-connected systems, based upon the specific nature of the sewer system layout, pump stations, gradients, locations of CSOs and other physical features which support such a sub area. A hydraulically connected system could include multiple municipalities, comprised of both combined and separate sewers.

C. NINE MINIMUM CONTROL REQUIREMENTS

1. **Proper operation and regular maintenance programs for the sewer system and the CSOs**
2. **Maximum use of the collection system for storage**
3. **Review and modification of pretreatment requirements to assure CSO impacts are minimized**
4. **Maximization of flow to the POTW for treatment**
5. **Prohibition of CSOs during dry weather**
6. **Control of solid and floatable materials in CSOs**
7. **Pollution prevention**
8. **Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts**
9. **Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls**

D. NINE ELEMENTS OF THE LONG TERM CONTROL PLAN

1. **Characterization, Monitoring, and Modeling of the Combined Sewer Systems**
2. **Public Participation**
3. **Consideration of Sensitive Areas**

- 4. Evaluation of Alternatives**
- 5. Cost/Performance Considerations**
- 6. Operational Plan**
- 7. Maximizing Treatment at the Existing POTW Treatment Plant**
- 8. Implementation Schedule**
- 9. Compliance Monitoring Program**

Combined Sewer Management

A. MONITORING REQUIREMENTS

1. CSO Monitoring Requirements

- a. All monitoring shall be conducted as specified in Part III.
- b. All monitoring frequencies expressed in Part III are minimum requirements. Any additional samples taken consistent with the monitoring and reporting requirements contained herein shall be reported on the Monitoring Report Forms.
- c. Discharges shall be directly monitored or predicted using a DEP approved up-to-date model.

B. RECORDKEEPING

1. CSO Recordkeeping Requirements

- a. The permittee shall identify the Combined Sewer System (CSS) complaint, maintenance, inspection, and repair documentation forms and related tracking forms and/or systems and the Permittee shall also specify how, where and when this documentation will be maintained.
- b. The permittee shall retain records of all monitoring information for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record, including:
 - i. all calibration and any other methods of monitoring which may be employed, maintenance records and all original strip chart recordings for continuous monitoring instrumentation (if applicable),
 - ii. copies of all reports required by this NJPDES permit,
 - iii. all data used to complete the application for a NJPDES permit, and
 - iv. monitoring information required by the permit related to the permittee's residual use and/or disposal practices, for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record.
- c. Records of monitoring information shall include the following:
 - i. the date, locations, and time of sampling or measurements,
 - ii. the individual(s) who performed the sampling or measurements,
 - iii. the date(s) the 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.
- d. The permittee shall retain records to document implementation of the Nine Minimum Controls (NMC) and Long Term Control Plan (LTCP) requirements in Sections F and G. The permittee shall utilize this information when preparing and submitting progress reports required in Section D, including residential complaints, inspection records, and maintenance records. This information shall be made available to the Department upon request.

C. REPORTING

1. CSO Reporting Requirements

- a. The permittee shall submit all required monitoring results to the Department on the forms provided by the Department. The Monitoring Report Forms (MRFs) may be provided to the permittee in either a paper format or in an electronic file format. Unless otherwise noted, all requirements below pertain to both paper and electronic formats.
- b. The permittee shall summarize the information for the total quantity of solids/floatables removed from ALL outfalls on the MRF for the first CSO outfall only. This information needs to be reported on the MRF only when the solids/floatables solid waste is measured for disposal. For the months when no solids/floatables are disposed of, the permittee shall report 'CODE = N'.
- c. The permittee shall report Precipitation from a rain gauge representative of the area on the MRF for the first CSO outfall only.
- d. The permittee shall report Duration of Discharge on the MRF for each CSO outfall as a whole day for any calendar day when a discharge occurs.
- e. Any MRFs in paper format shall be submitted to the following address(es):
 - i. NJDEP
Mail Code - 401-02B
Division of Water Quality - Permit Administration Section
P.O. Box 420
Trenton, New Jersey 08625-0420.
- f. Electronic data submissions shall be in accordance with the guidelines and provisions outlined in the Department's Electronic Data Interchange (EDI) agreement with the permittee. Paper copies must be available for on-site inspection by DEP personnel or provided to the DEP upon written request.
- g. All MRFs shall be certified by the highest ranking official having day-to-day managerial and operational responsibilities for the combined sewer system.
- h. The highest ranking official may delegate responsibility to certify the MRFs in his or her absence. Authorizations for other individuals to sign shall be made in accordance with N.J.A.C. 7:14A-4.9(b).
- i. Monitoring results shall be submitted in accordance with the current Monitoring Report Form Manual and any updates thereof.
- j. If there are no CSO discharges during an entire monitoring period, the permittee must notify the Department when submitting the monitoring results. This is accomplished by placing a check mark in the "No Discharge this monitoring period" box on the paper or electronic version of the monitoring report submittal form.

D. SUBMITTALS

1. CSO Submittal Requirements

- a. The permittee shall respond to all deficiencies cited by the Department within 30 days of notification. With adequate justification provided by the permittee, the Department may extend this deadline an additional 30 days.

- b. All reports submitted to the Department pursuant to the requirements of this permit shall comply with the signatory requirements of N.J.A.C. 7:14A-4.9., and contain the following certification:
 - i. "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for purposely, knowingly, recklessly, or negligently submitting false information".
- c. Since multiple municipalities/permittees own separate portions of the hydraulically connected sewer system, the permittee shall work cooperatively with all other appropriate municipalities/permittees in the hydraulically connected sewer system to ensure that the Nine Minimum Controls (NMC) & Long Term Control Plans (LTCP) activities are being developed and implemented consistently. The permittee shall identify their joint and separate responsibilities with all other appropriate municipalities/permittees in the hydraulically connected sewer system regarding implementation of the NMCs and LTCPs. This information shall be provided/updated in the quarterly Progress Reports.
- d. The permittee shall also notify the PVSC of all CSO construction related activities in their collection system on a quarterly basis. Notification through the TWA process is sufficient for this purpose.
- e. The permittee shall submit all information required by this permit via email or other electronic format acceptable to the Department to NJCSOProgram@dep.nj.gov. Until the Department can accept any file larger than 20 megabytes (MB), any larger file can be broken up into smaller segments and sent separately or can be sent via mail delivery on CDs or DVDs.

2. Updated Nine Minimum Control (NMC) Submittal Requirements

- a. The permittee shall submit GPS data in degrees-minutes-seconds (at a minimum to the the tenth of a second accuracy) for all CSO regulators, pump stations and CSO outfalls owned/operated by the permittee in accordance with N.J.A.C. 7:1D-Appendix A, and NJ GIS protocol at <http://www.state.nj.us/dep/gis/standard.htm>. The permittee shall submit this GPS data: within 6 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
- b. The permittee shall submit a PDF of a sewer map: within 12 months from the effective date of the permit (EDP). This map shall depict the actual locations of the separate and combined sanitary sewers, CSO regulators and outfalls owned/operated by the permittee. (Activity #: DSW130001 - Effective: 7/1/2015)
- c. The permittee shall install signs for each CSO outfall within 6 months from the effective date of the permit (EDP), in accordance with Section F.8. The permittee shall retain information at the offices of the permittee including a chart listing the CSO outfall designator and the physical address/location of the sign for each CSO outfall.

3. Long Term Control Plan (LTCP) Submittal Requirements

- a. The Department encourages a single LTCP to be developed and submitted on behalf of all of the permittees in a hydraulically connected sewer system.

- b. The permittee shall develop an approvable LTCP that will include the Elements contained in Section G. The LTCP shall consist of the following steps and be submitted according to the schedule below.
 - i. Step 1a - System Characterization Work Plan for the LTCP - In accordance with Section G.1., unless otherwise approved by the Department in writing, the permittee shall submit an approvable System Characterization Work Plan: within 6 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
 - ii. Step 1b1 - In accordance with G.1., the permittee shall submit the System Characterization Report: within 36 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
 - iii. Step 1b2 - In accordance with G.2., the permittee shall submit the Public Participation Process Report: within 36 months from the effective date of the permit (EDP).
 - iv. Step 1b3 - In accordance with G.3., the permittee shall submit the Consideration of Sensitive Areas Information of the LTCP: within 36 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
 - v. Step 2 - Development and Evaluation of Alternatives for the LTCP - In accordance with Sections G.2. through G.5. and G.9., the permittee shall submit an approvable Development and Evaluation of Alternatives Report: within 48 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
 - vi. Step 3 - Selection and Implementation of the LTCP: In accordance with Sections G.2. and G.6. through G.9., the permittee shall submit an approvable Selection and Implementation of Alternatives Report: within 59 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
 - vii. Upon Departmental approval of the LTCP, the permittee shall begin implementation of the LTCP in accordance with the schedule contained therein.
- c. In accordance with Section G.9., the permittee shall submit an approvable baseline Compliance Monitoring Program (CMP) Work Plan: within 6 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
- d. Unless otherwise specified by the Department, in accordance with Section G.9. and the approved work plan, the permittee shall submit an approvable baseline CMP Report and data: within 36 months from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)

4. CSO Progress Report Submittal Requirements

- a. The permittee shall Submit a progress report: within twenty-five (25) days after the end of every quarter beginning from the effective date of the permit (EDP). (Activity #: DSW130001 - Effective: 7/1/2015)
- b. The Progress Reports shall be prepared in accordance with the following requirements:
 - i. The Progress Reports shall follow the outline structure of the permit requirements in Sections F and G.

- ii. The Progress Reports shall include, at a minimum, a summary of all permit compliance deadlines, their progress to date and CSO control measures implemented by the permittee to comply with the NMCs. The progress reports shall also include a prioritized schedule for additional CSO control measures to be implemented, and the effectiveness of the implemented CSO control measures, pursuant to this permit for the previous calendar quarter.
- iii. The first Progress Report shall include a summary of all CSO control measures implemented to date and the effectiveness of those control measures.
- iv. Each Progress Report must include a verification that the Operation and Maintenance Manual, including the SOPs, Asset Management Plan and Emergency Plan, have been updated in accordance with this permit and amended annually, as necessary.
- v. Each Progress Report shall contain a detailed discussion of, and document compliance with, the continued implementation of the NMCs and the manner in which all owners/operators of the hydraulically connected collection system participated in the development of the LTCP, including information regarding the development and status of the telephone hotline/website pursuant to Section F.8.
- vi. Upon Departmental approval of the LTCP, the permittee shall begin implementation of the permittee's CSO control measures in accordance with the schedule in the approved LTCP.

E. FACILITY MANAGEMENT

1. CSO Discharge Requirements

- a. The permittee shall discharge at the location(s) specified in PART III of this permit.
- b. The permittee shall not discharge foam or cause foaming of the receiving water that 1) forms objectionable deposits on the receiving water, 2) forms floating masses producing a nuisance, or 3) interferes with a designated use of the waterbody.
- c. The permittee's discharges shall not produce objectionable color or odor in the receiving stream.
- d. The permittee's discharges shall not exhibit a visible sheen.

2. Interstate Environmental Commission (IEC)

- a. The permittee shall comply with the Interstate Environmental Commission's (IEC) "Water Quality Regulations", where applicable.

F. NINE MINIMUM CONTROL REQUIREMENTS

1. Proper Operation and Regular Maintenance Program Requirements

- a. The permittee shall continue to implement and update annually, an Operations & Maintenance (O&M) Program and corresponding Manual, including an Emergency Plan, in accordance with N.J.A.C. 7:14A-6.12, to ensure that the treatment works, including but not limited to collection system, the CSO outfalls, solids/floatables facilities, regulators, and related appurtenances which are owned/operated by the permittee are operated and maintained in a manner to achieve compliance with all terms and conditions of this permit.
- b. The permittee shall operate the treatment works using a licensed operator in accordance with N.J.S.A. 58:11-66(a), N.J.A.C. 7:14A-6.12(b) and N.J.A.C. 7:10A.

- c. The permittee shall provide adequate operator staffing for the treatment works.
- d. The permittee shall provide documentation that demonstrates that employees were provided with appropriate training to perform the operation and maintenance duties required and to follow the Standard Operating Procedures (SOPs) in the O&M Program and corresponding Manual. This shall include a current training program for the purpose of informing new employees and maintaining training levels for current employees in regards to the CSO O&M Program and corresponding Manual, including safety related concerns.
- e. The permittee shall implement an O&M Program & Manual that includes, at a minimum the following:
 - i. A directory of appropriate O&M staff, including a description of their individual responsibilities and emergency contact information.
 - ii. A description of the permittee's Fats, Oils and Greases (FOG) Program.
 - iii. An updated characterization of the entire collection system owned/operated by the permittee that conveys flows to the treatment works. The permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information. A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.
- f. This characterization in Section F.1.e.iii above shall include a spreadsheet, organized by CSO outfall, as appropriate, of the capacity, dimensions, age, type of material, and specific location of the items listed below. This spreadsheet shall be completed no later than EDP + 6 months.
 - i. CSO Outfalls (if applicable);
 - ii. Tide gates (if applicable);
 - iii. Solids/floatables controls (if applicable);
 - iv. Regulators (if applicable);
 - v. Gravity lines and force mains (if applicable), including size, length and direction of flow;
 - vi. Pump stations (if applicable);
 - vii. Significant Indirect Users (SIUs); and
 - viii. Specific locations that have historically experienced the following: blockages, bottlenecks, flow constrictions, sewer overflows including to basements, streets and other public and private areas, or related incidences.
- g. The permittee shall delineate the characterization information required in Section F.1.f on a GIS map, as applicable, pursuant to N.J.A.C. 7:1D-Appendix A and shall follow the NJ GIS protocol at <http://www.state.nj.us/dep/gis/standard.htm>. This map shall be completed on or before the first annual update of the O&M Program and Manual.

- h. The permittee shall review its rules, ordinances, and/or its sewer use agreements and create an anticipated schedule to revise them within 6 months of the EDP if necessary. In general, this schedule shall not extend beyond the due date for the LTCP as per Part IV.D.3.b.iv. This schedule shall require the customer municipalities to:
 - i. operate and maintain their treatment works,
 - ii. identify I/I and reduce it to meet the definition of non-excessive infiltration (in combined and separately sewer areas) and non-excessive inflow (in separately sewer areas) where both terms are defined in N.J.A.C. 7:14A-1.2, and
 - iii. identify and eliminate interconnections and cross-connections in storm sewers.
- i. The permittee shall also include SOPs in the O&M Program and corresponding Manual for the operation, inspections, and scheduled preventative maintenance in accordance with the appropriate manufacturer's recommendations and equipment manuals at a minimum, to ensure that the entire collection system that is owned/operated by the permittee that conveys flows to the treatment works will function properly.
- j. At a minimum, the SOPs shall contain detailed instructions for system operations, such as frequency of inspections, regular maintenance, and the timely repair, and documentation of such information, of the entire collection system that conveys flows to the treatment works. These SOPs shall include procedures for the following items:
 - i. Ensure that the entire collection system owned/operated by the permittee that conveys flows to the treatment works functions in such a way as to not result in sewage overflows (except from designated CSO outfalls) including to basements, streets and other public and private areas, or bottlenecks/constrictions that limit flow in specific areas and prevent the downstream STP treatment capacity from being fully utilized, in accordance with Section F.4.
 - ii. Ensure that the storage and conveyance of combined sewage to the STP is maximized in accordance with Sections F.2 and F.4.
 - iii. Ensure that the impacts from SIUs contributing to the CSOs are minimized in accordance with Section F.3.
 - iv. Ensure there will be no dry weather overflows from any CSO in accordance with Section F.5.
 - v. Conduct a visual inspection program of sufficient scope and frequency of the CSS to provide reasonable assurance that unpermitted discharges, obstructions, damage, and DWOs will be discovered.
 - vi. Ensure the solids/floatables appurtenances will be maintained and the solids/floatables will be removed from the CSO discharge and disposed of properly at such frequency so as not to cause obstructions of flow for any future CSO discharges, in accordance with Part II of this permit and Section F.6.
 - vii. Prevent the Intrusion upstream due to high tides and/or receiving water flooding into the entire collection system owned/operated by the permittee that conveys flows to the treatment works through proper operation and maintenance.
 - viii. Provide a gravity sewer and catch basin inspection schedule and clean as necessary.

- ix. Provide a system for documenting, assessing, tracking, and addressing residential complaints regarding blockages, bottlenecks, flow constrictions, sewer overflows including to basements, streets and other public and private areas, or related incidents.
 - x. Remove within one (1) week of the permittee becoming aware, any obstructions that are contributing to overflows due to debris, Fats, Oils and Greases, and sediment buildup, or other foreign materials in the collection system owned/operated by the permittee. Remove any other obstructions due to debris, Fats, Oils and Greases, and sediment buildup, or other foreign materials in the collection system owned/operated by the permittee as soon as practicable.
 - xi. Require immediate steps to take corrective action(s) to repair damage and/or structural deterioration, address unpermitted discharges, and eliminate DWOs of the entire collection system owned/operated by the permittee that conveys flows to the treatment works.
 - xii. Provide for ongoing I/I reduction strategies to meet the definition of non-excessive infiltration (in combined and separately sewered areas) and non-excessive inflow (in separately sewered areas) as defined in N.J.A.C. 7:14A-1.2 through the identification of excessive I/I sources and the prioritization and implementation of I/I reduction projects.
 - xiii. Identify the equipment currently owned, operated, and maintained for investigating and maintaining the CSS and, at a minimum, reference the appropriate equipment manuals.
 - xiv. Provide procedures whereby wet weather flows are maximized for conveyance to the STP and discharges from CSOs are minimized.
- k. The permittee shall incorporate an Asset Management Plan as part of the overall O&M strategy. This plan shall include an infrastructure inventory with infrastructure repair/replacement needs listed and scheduled according to priority/criticality, that demonstrates the entire collection system owned/operated by the permittee that conveys flows to the treatment works is perpetually and proactively managed with the appropriate resources (capital, staffing, training, supplies, equipment) allocated in the permittee's budget. This information shall be included in the permittee's budget as prepared and submitted to Department of Community Affairs, if appropriate. The Asset Management Plan shall be completed no later than EDP+12 months.
- l. The permittee shall also include in the O&M Program and corresponding Manual, an Emergency Plan, in accordance with N.J.A.C. 7:14A-6.12(d). The Emergency Plan shall provide for, to the maximum extent possible, uninterrupted treatment works operation during emergency conditions using in-house and/or contract based services. The Emergency Plan shall include Standard Operating Procedures (SOPs), which ensure the effective operation of the treatment works under emergency conditions, such as extreme weather events and extended periods of no power.
- m. The permittee shall amend the O&M Program & Manual on at least an annual frequency to reflect updated information and changes in the characterization, design, construction, operations, maintenance, Emergency Plan, and SOPs as listed in Section F.1, and include verification that the O&M Program and corresponding Manual has been prepared and updated in accordance with the submittal requirements in Section D.4.

2. Maximum use of the collection system for storage

- a. The permittee shall use the entire collection system owned/operated by the permittee for in-line storage of sewage for future conveyance to the STP when sewer system flows subside by ensuring that the sewage is retained in the sewer system to the extent possible to minimize CSO discharges (i.e. volume, frequency and duration), while not creating or increasing sewage overflows, including to basements, streets and other public and private areas.
- b. The permittee shall minimize the introduction of sediment and obstructions in the entire collection system owned/operated by the permittee that conveys flows to the treatment works pursuant to Sections F.1. and F.7.
- c. The permittee shall operate and maintain the entire collection system owned/operated by the permittee that conveys flows to the treatment works pursuant to Section F.1.
- d. The permittee shall identify and implement minor modifications, based on the ongoing evaluations, to enable appropriate segments of the collection system owned/operated by the permittee to store additional wet weather flows to reduce any CSOs until downstream sewers and treatment facilities can adequately convey and treat the flows.

3. Review and modification of pretreatment requirements to assure CSO impacts are minimized

- a. The permittee shall determine the locations, associated CSO outfalls and discharge volume, loading and toxicity of the SIUs for the entire collection system which is owned/operated by the permittee; determine and prioritize the potential environmental impact of these SIUs by CSO outfall; include this information in the characterization portion of the O&M Program and Manual as required in Section F.1. This information shall be updated annually in the Progress Report in accordance with Section D.4.

4. Maximization of flow to the POTW for treatment

- a. The permittee shall operate and maintain the entire collection system owned/operated by the permittee that conveys flows to the treatment works to maximize the conveyance of wastewater to the STP for treatment subject to existing capacity.
- b. The permittee shall evaluate and implement alternatives for increasing flow to the STP in accordance with i and ii below that do not require extensive engineering studies or significant construction costs:
 - i. Capacity evaluations of the entire collection system owned/operated by the permittee that conveys flows to the treatment works in accordance with Section F.1.f to determine the maximum amount of flow that can be stored and transported.
 - ii. Identification of other activities conducted and/or planned to further maximize flow to the POTW.

5. Prohibition of CSOs during dry weather

- a. Dry weather overflows (DWOs) are prohibited from any CSO outfall in the entire collection system owned/operated by the permittee.
- b. All DWOs must be reported to the Department as incidents of non-compliance in accordance with the requirements at N.J.A.C. 7:14A-6.10(c) and (e), along with a description of the corrective actions taken.
- c. The permittee shall inspect the combined sewer system as required under Section F.1 to minimize the potential of DWOs and to abate DWOs that occur.

- d. The permittee shall prohibit any connections, including but not limited to construction dewatering, remediation activities or similar activities, downstream of a CSO regulator, that will convey flow to the CSO during dry weather. On a case-by-case basis, the Department reserves the right to allow temporary use of the CSO outfall structures for other types of discharges to address extraordinary circumstances. Any use under this provision must be specifically approved by the Department.

6. Control of Solids/Floatables in CSOs

- a. The permittee shall continue to implement measures to capture and remove solids/floatables which cannot pass through a bar screen having a bar or netting spacing of 0.5 inches from all CSOs.
- b. The permittee shall not utilize treatment, including mechanical measures used to reduce the particle size of the solids/floatables in the wastewater collection system prior to discharge to the waters of the state to achieve compliance with paragraph F.6.a., is not permitted.
- c. The captured debris shall be removed from each solids/floatables control system as necessary to ensure that there will be no flow restrictions during the next CSO discharge event.
- d. All captured debris removed from the solids/floatables control system must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities in accordance with N.J.A.C. 7:14A and Part II of this permit.

7. Implementation of Pollution Prevention Measures

- a. The permittee shall continue to implement and upgrade pollution prevention measures necessary to prevent and limit contaminants from entering the entire collection system owned/operated by the permittee that conveys flows to the treatment works. Unless demonstrated to the Department to be impracticable measures, shall include, but not be limited to, the following:
 - i. Implementation of a regular street cleaning program.
 - ii. Retrofitting of existing storm drains to meet the standards in Appendix A, where such inlets are in direct contact with repaving, repairing (excluding repair of individual potholes), reconstruction, resurfacing (including top coating or chip sealing with asphalt emulsion or a thin base of hot bitumen) or alterations of facilities owned/operated by the permittee. For exemptions to this standard see "Exemptions" listed in Appendix A.
 - iii. Implementation of stormwater pollution prevention rules and ordinances.
 - iv. Implementation of solid waste collection and recycling ordinances.
 - v. Implementation of public education programs.
- b. The permittee shall enforce street litter ordinances and rules and regulations on illegal connections and unauthorized discharge(s) into the POTW.
- c. The permittee shall submit a schedule to revise applicable rules, ordinances and sewer use agreements to address the reduction of inflow and infiltration (I/I) into the collection system in accordance with Part IV.F.1.h.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts

- a. The permittee shall post CSO Identification Signs at every CSO outfall location identified in Part III of this permit. The signs shall conform to the following specifications unless alternatives have been approved by the Department. Any requests for such alternatives shall be submitted to the NJDEP within 30 days of EDP.
 - i. Signs shall be installed in such a manner as to have the same information visible from both the land and from the water, within 100' from the outfall pipe along the shoreline.
 - ii. Signs shall be at least 18" x 24" and printed with reflective material.
 - iii. Signs shall be in compliance with applicable local ordinances.
 - iv. The signs shall depict the following information below:
 - Warning, possible sewage overflows during and following wet weather. Contact with water may also cause illness.
 - Report dry weather discharge to NJDEP Hotline at 1 (877) 927-6337 (WARN-DEP).
 - Report foul odors or unusual discoloration to NJDEP Hotline or (Permittee) at (phone number).
 - NJPDES Permit Number NJ0108723.
 - Discharge Serial No. (eg. 001A).
 - www.state.nj.us/dep/dwq/cso.htm
 - Signs that depict symbols prohibiting swimming, fishing and kayaking.
- b. The permittee shall continue to employ measures to provide reasonable assurance that the affected public is informed of CSO discharges in a timely manner. These measures shall include, but are not limited to, the items listed below:
 - i. Posting leaflets/flyers/signs with general information at affected use areas such as beaches, marinas, docks, fishing piers, boat ramps, parks and other public places (within 100 feet of outfall) to inform the public what CSOs are, the location(s) of the CSO outfall(s) and the frequency and nature of the discharges and precautions that should be undertaken for public health/safety and web sites where additional CSO/CSS information can be found.
 - ii. Notification to all residents by either US Postal Service or email, (with copies sent to the NJDEP) at the address listed in C.1.e.i or by email in D.1.e., in the permittee's sewer service area. This notification shall provide additional information as to what efforts the permittee has made and plans to continue to undertake to reduce/eliminate the CSOs and related threat to public health. Updated notifications shall be mailed on an annual basis.
 - iii. On or before EDP +12 months the permittee shall create and maintain on a daily basis a telephone hot line or website (in an approved open source and/or syndicated format that is compatible with NJDEP's computer systems) for interested citizen inquiries to provide up-to-date information regarding where CSO discharges may be occurring or that discharges are not or are unlikely to be occurring.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls

- a. The permittee shall monitor the CSO discharge events and record the date, "duration of discharge", rainfall, location of rain gauge and quantity of solids/floatables removed for each CSO and discharge event through appropriate modeling or by an appropriately placed flow meter/totalling device, level sensor, or other appropriate measuring device, and report the required information on the MRF as required by Part III of this permit.

G. LONG TERM CONTROL PLAN REQUIREMENTS

1. Characterization Monitoring and Modeling of the Combined Sewer System

- a. The permittee, as per D.3.a and G.10, shall submit an updated characterization study that will result in a comprehensive characterization of the CSS developed through records review, monitoring, modeling and other means as appropriate to establish the existing baseline conditions, evaluate the efficacy of the CSO technology based controls, and determine the baseline conditions upon which the LTCP will be based. The permittee shall work in coordination with the combined sewer communities which are hydraulically connected to PVSC for appropriate Characterization, Monitoring and Modeling of the Sewer System.
- b. The characterization shall:
 - include a thorough review of the entire collection system that conveys flows to the treatment works, including areas of sewage overflows, including to basements, streets and other public and private areas, to adequately address the response of the CSS to various precipitation events;
 - identify the number, location, frequency and characteristics of CSOs; and
 - identify water quality impacts that result from CSOs.

Ambient in-stream monitoring may be performed in accordance with the guidance document entitled: "Receiving Waters Monitoring Work Plan Guidance for the CSO Program" available at www.state.nj.us/dep/dwq.

- c. The permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information. A list of the studies performed by the CSO permittees in this hydraulically connected sewer system is included as Appendix B at the end of this permit.
- d. The major elements of the sewer system characterization are noted below:
 - i. Rainfall Records - The permittee shall examine the historical rainfall record for the geographic area of its existing CSS using sound statistical procedures and best available data. The permittee shall evaluate flow variations due to precipitation events in the receiving waterbody to correlate between CSOs and receiving water conditions.
 - ii. Combined Sewer System Characterization - the permittee shall evaluate sewer system records, field inspections gathered from the O&M Characterization required under Section F.1. (and previous relevant studies), and other activities necessary to understand the number, location and frequency of overflows and their location relative to sensitive areas and to pollution sources in the collection system, such as SIUs.
 - iii. CSO Monitoring - Using all available information the permittee shall develop and/or update a previously existing, comprehensive, representative monitoring program that measures the frequency, duration, flow rate, volume and pollutant concentration of CSO discharges and assesses the impact of the CSOs on the receiving waters. The monitoring data may utilize existing data from previous studies, and must include necessary CSO effluent and ambient in-stream monitoring for pathogens (including current and recreational standards for bacteriological indicators (e.g., fecal coliform, Enterococcus and E. Coli)). Only ambient monitoring data collected in accordance with a Department-approved Quality Assurance/Quality Control program shall be used. A representative sample of overflow points can be selected that is sufficient to allow characterization of CSO discharges, their water quality impacts and to facilitate evaluation of control plan alternatives.

- iv. Modeling - the permittee may employ NJDEP or EPA approved models, which include appropriate calibration and verification with field measurements, to aid in the characterization. If models are used they shall be identified by the permittee along with an explanation of why the model was selected and used in the characterization. The permittee should base its choice of a model on the characteristics of the entire collection system that conveys flows to the treatment works (including flows from other hydraulically connected municipal sewer systems), the number and location of overflow points, and the sensitivity of the receiving water body to the CSO discharges. The sophistication of the model should relate to the complexity of the system to be modeled and to the information needs associated with evaluation of CSO control options and water quality impacts. Because of the iterative nature of modeling sewer systems, CSOs, and their impacts, monitoring and modeling efforts are complementary and should be coordinated with other affected entities.
- v. The permittee shall identify sensitive areas where CSOs occur. These areas include designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters used for primary contact recreation (including but not limited to bathing beaches), public drinking water intakes or their designated protection areas, and shellfish beds.

2. Public Participation Process

- a. The permittee shall submit the Public Participation Process Report to include appropriate input and participation with other hydraulically connected communities, in accordance with D.3.a and G.10. The permittees may use information from the previous submittals. A list of the previous submittals from the CSO permittees in this hydraulically connected sewer system is included as Appendix B at the end of this permit.
- b. Implementation shall actively involve the affected public throughout each of the 3 Steps of the LTCP process. The affected public includes rate payers (including rate payers in the separate sewer sections), industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy the downstream waters, and any other interested persons. A Public Participation Process Report shall include the following elements:
 - i. Conduct outreach to inform the affected/interested public (during the development of the permittee's LTCP) through various methods which may include: public meetings, direct mailers, billing inserts, newsletters, press releases to the media, postings of information on the permittee's website, hotline, development of advisory committees, etc.; and to.
 - ii. Invite members of the affected/interested public to join a Supplemental CSO Team to work with the permittee's assigned staff, consultants and/or contractors as required in Part IV, Section G.2.c. of the permit.
- c. The permittee shall invite members of the affected/interested public to establish a Supplemental CSO Team to work with the permittee's assigned staff from Section F.1 and to work as an informal work group as a liaison between the general public and the decision makers for the permittee. The goals of the Supplemental CSO Team could consist of the following elements:
 - i. Meet periodically to assist in the sharing of information, and to provide input to the planning process;
 - ii. Review the proposed nature and extent of data and information to be collected during LTCP development;

- iii. Provide input for consideration in the evaluation of CSO control alternatives; and
- iv. Provide input for consideration in the selection of those CSO controls that will cost effectively meet the Clean Water Act requirements.

3. Consideration of Sensitive Areas

- a. The permittee's LTCP shall give the highest priority to controlling overflows to sensitive areas, in accordance with D.3.a and G.10. Sensitive areas include designated Outstanding National Resource Waters, National Marine Sanctuaries, waters with threatened or endangered species and their habitat, waters used for primary contact recreation (including but not limited to bathing beaches), public drinking water intakes or their designated protection areas, and shellfish beds.
- b. The LTCP shall comply with the following requirements:
 - i. Prohibit new or significantly increased CSOs
 - ii. Eliminate or relocate CSOs that discharge to sensitive areas wherever physically possible and economically achievable, except where elimination or relocation would provide less environmental protection than additional treatment.
 - iii. Where elimination or relocation is not physically possible and economically achievable, or would provide less environmental protection than additional treatment, the permittee shall provide the level of treatment for remaining CSOs deemed necessary to meet WQS for full protection of existing and designated uses.

4. Evaluation of Alternatives

- a. The permittee shall evaluate a reasonable range of CSO control alternatives, in accordance with D.3.a and G.10, that will meet the water quality-based requirements of the CWA using either the Presumption Approach or the Demonstration Approach (as described in Sections G.4.f. and G.4.g).
- b. The permittee shall submit, as per Section D.3.b.v, the Evaluation of Alternatives Report that will enable the permittee, in consultation with the Department, the public, owners and/or operators of the entire collection system that conveys flows to the treatment works, to select the alternatives to ensure the CSO controls will meet the water quality-based requirements of the CWA, will be protective of the existing and designated uses in accordance with N.J.A.C. 7:9B, give the highest priority to controlling CSOs to sensitive areas, and address minimizing impacts from SIU discharges.
- c. The permittee shall select either Demonstration or Presumption Approach for each group of hydraulically connected CSOs, and identify each CSO group and its individual discharge locations.
- d. The Evaluation of Alternatives Report shall include a list of control alternative(s) evaluated for each CSO.
- e. The permittee shall evaluate a range of CSO control alternatives predicted to accomplish the requirements of the CWA. In its evaluation of each potential CSO control alternative, the permittee shall use an NJDEP approved hydrologic, hydraulic and water quality models. The permittee shall utilize the models to simulate the existing conditions and conditions as they are expected to exist after construction and operation of the chosen alternative(s). The permittee shall evaluate the practical and technical feasibility of the proposed CSO control alternative(s), and water quality benefits of constructing and implementing various remedial controls and combination of such controls and activities which shall include, but not be limited to the controls below:

- i. Green infrastructure.
 - ii. Increased storage capacity in the collection system.
 - iii. STP expansion and/or storage at the plant (an evaluation of the capacity of the unit processes must be conducted at the STP resulting in a determination of whether there is any additional treatment and conveyance capacity within the STP). Based upon this information, the permittee shall determine (modeling may be used) the amount of CSO discharge reduction that would be achieved by utilizing this additional treatment capacity while maintaining compliance with all permit limits
 - iv. I/I reduction to meet the definition of non-excessive infiltration and non-excessive inflow as defined in N.J.A.C. 7:14A-1.2 in the entire collection system that conveys flows to the treatment works to free up storage capacity or conveyance in the sewer system and/or treatment capacity at the STP, and feasibility of implementing in the entire system or portions thereof.
 - v. Sewer separation.
 - vi. Treatment of the CSO discharge.
 - vii. CSO related bypass of the secondary treatment portion of the STP in accordance with N.J.A.C. 7:14A-11.12 Appendix C, II C.7.
- f. The "Presumption" Approach, in accordance with N.J.A.C 7:14A-11 Appendix C provides: A program that meets any of the criteria listed below will be presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the Department determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring, and modeling of the system and the consideration of sensitive areas described above.

Combined sewer flows remaining after implementation of the NMCs and within the criteria specified in this Section at G.4.f.i. and ii. shall receive minimum treatment in accordance with the items below:

- Primary clarification (removal of floatables and settleable solids may be achieved by any combination of treatment technologies or methods that are shown to be equivalent to primary clarification),
- Solids and floatables disposal, and
- Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals/by-products (e.g. chlorine produced oxidants), where necessary.

The permittee must demonstrate any of the following three criteria below:.

- i. No more than an average of four overflow events (see below) per year from a hydraulically connected system as the result of a precipitation event that does not receive the minimum treatment specified below. The Department may allow up to two additional overflow events per year. For the purpose of this criterion, an 'event' is:
 - In a hydraulically connected system that contains only one CSO outfall, multiple periods of overflow are considered one overflow event if the time between periods of overflow is no more than 24 hours.
 - In a hydraulically connected system that contains more than one CSO outfall, multiple periods of overflow from one or more outfalls are considered one overflow event if the time between periods of overflow is no more than 24 hours without a discharge from any outfall.
 - ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a hydraulically connected system-wide annual average basis.
 - iii. The elimination or removal of no less than the mass of the pollutants, identified as causing water quality impairment through the sewer system characterization, monitoring, and modeling effort, for the volumes that would be eliminated or captured for treatment under Section G.4.f.ii.
- g. The "Demonstration" Approach, in accordance with N.J.A.C. 7:14A-11 Appendix C provides: A permittee may demonstrate that a selected control program, though not meeting the criteria specified under the Presumption Approach above, is adequate to meet the water quality-based requirements of the CWA.

The permittee must demonstrate each of the following below:

- i. The planned control program is adequate to meet WQS and protect designated uses, unless WQS or uses cannot be met as a result of natural background conditions or pollution sources other than CSOs.
- ii. The CSO discharges remaining after implementation of the planned control program will not preclude the attainment of WQS or the receiving waters' designated uses or contribute to their impairment.
- iii. The planned control program will provide the maximum pollution reduction benefits reasonably attainable.
- iv. The planned control program is designed to allow cost effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS or designated uses.

5. Cost/Performance Considerations

- a. The permittee shall submit in accordance with the submittal requirements at Sections D.3.a. and D.3.b.v., the cost/performance considerations that demonstrate the relationships among proposed control alternatives that correspond to those required in accordance with Section G.4. This shall include an analysis to determine where the increment of pollution reduction achieved in the receiving water diminishes compared to the increased costs. If the permittee chooses to pursue the "Presumption Approach" of 'no more than an average of four discharge events per year', the permittee is not required to conduct this analysis for the other number of events (i.e. 0, 7, 10, 20). This analysis, often known as "knee of the curve", shall be among the considerations used to help guide selection of controls.

In accordance with Section G.1.a., the permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information, such as:

- i. Jersey City MUA:
 - Jersey City Municipal Utilities Authority Cost and Performance Analysis Report, prepared by Malcolm Pirnie, Inc., dated April 2007.
 - Jersey City Municipal Utilities Authority CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

A complete list of studies performed by all CSO permittees in PVSC's hydraulically connected system is summarized in Appendix B at the end of this permit.

6. Operational Plan

- a. Upon Departmental approval of the final LTCP and throughout implementation of the approved LTCP as appropriate, the permittee shall modify the O&M Program and Manual in accordance with D.3.a and G.10, to address the final LTCP CSO control facilities and operating strategies, including but not limited to, maintaining Green Infrastructure, staffing and budgeting, I/I, and emergency plans.

7. Maximizing Treatment at the Existing STP

- a. The LTCP shall include the maximization of the removal of pollutants during and after each precipitation event at the STP, in accordance with D.3.a and G.10, ensuring that such flows receive treatment to the greatest extent practicable utilizing existing tankage for storage, while still meeting all permit limits.
- b. The permittee shall incorporate the receiving STP's plan for maximizing flow and treatment at the STP.

8. Implementation Schedule

- a. The permittee shall submit a construction and financing schedule in accordance with D.3.a and G.10, for implementation of Department approved LTCP CSO controls. Such schedules may be phased based on the relative importance of the adverse impacts upon water quality standards and designated uses, the permittee's financial capability, and other water quality related infrastructure improvements, including those related to stormwater improvements that would be connected to CSO control measures.

- b. Upon Departmental approval of the LTCP, the permittee shall begin implementation of the LTCP in accordance with the schedule contained therein.
- c. In accordance with Section D.3.b.vi., the permittee shall submit an implementation schedule, including yearly milestones, which considers the items listed below:
 - i. Adequately addressing areas of sewage overflows, including to basements, streets and other public and private areas.
 - ii. CSO overflows that discharge to sensitive areas as the highest priority.
 - iii. Use impairment of the receiving water.
 - iv. The permittee's financial capability including, but not limited to, consideration of the factors below:
 - Median household income,
 - Total annual wastewater and CSO control costs per household as a percent of median household income,
 - Overall net debt as a percent of full market property value,
 - Property tax revenues as a percent of full market property value,
 - Property tax collection rate
 - Unemployment, and
 - Bond rating
 - v. Grant and loan availability.
 - vi. Previous and current residential, commercial and industrial sewer user fees and rate structures.
 - vii. Other viable funding mechanisms and sources of financing.
 - viii. Resources necessary to design, construct and/or implement other water related infrastructure improvements as part of an Asset Management Plan as per Part IV.F.1.

9. Compliance Monitoring Program (CMP)

- a. The monitoring information collected from the ambient baseline monitoring phase of the CMP, in accordance with D.3.a., will be compared to subsequent CMP events during and after LTCP implementation to evaluate the effectiveness of implemented CSO controls.
- b. The permittee shall implement a CMP adequate to: verify baseline and existing conditions, the effectiveness of CSO controls, compliance with water quality standards, and protection of designated uses. This CMP shall be conducted before, during and after implementation of the LTCP and shall include a work plan to be approved by the Department that details the monitoring protocols to be followed, including the following necessary monitoring listed below:
 - i. Ambient in-stream monitoring may be performed in accordance with the guidance document entitled: "Receiving Waters Monitoring Work Plan Guidance for the CSO Program" at www.state.nj.us/dep/dwq.
 - ii. Discharge frequency for each CSO (days and hours per month).
 - iii. Duration of each discharge for each CSO (number of days).
 - iv. Quality of the flow discharged from each CSO, which shall include pathogen monitoring at a minimum.

- v. Rainfall monitoring in the vicinity of each CSO/municipality.
- c. The above monitoring must be completed for the baseline CMP Report and then at intervals as determined by the Department based on the implementation schedule in the approved LTCP but no less than once per permit cycle. The results must be submitted in the Progress Reports required in Section D.4.
- d. For the purposes of Part IV.G.9.b, the permittee may use previous studies to the extent that they are accurate and representative of a properly operated and maintained sewer system and of the currently required information. A list of the studies performed on the receiving waters is included in Appendix B at the end of this permit.

10. Permittee's LTCP Responsibilities

- a. The permittee is responsible for submitting an LTCP that addresses all nine elements in Part IV.G.

Where multiple permittees own/operate different portions of a hydraulically connected CSS, the permittee is required to work cooperatively with all other permittees to ensure the LTCPs are consistent. The LTCP documents must be based on the same data, characterization, models, engineering and cost studies, and other information, where appropriate. Each permittee is required to prepare the necessary information for the portion of the hydraulically connected system that the permittee owns/operates and provide this information to the other permittees within the hydraulically connected system in a timely manner for LTCP submission.

JERSEY CITY MUN UTIL AUTH, Jersey City

Permit No.NJ0108723
DSW150001 Surface Water Minor Mod Permit Action

APPENDIX A**Design Standards for Storm Drain Inlets**

Grates in pavement or other ground surfaces, such as roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels and stormwater basin floors used to collect stormwater from the surface into a storm drain or surface water body, shall meet the following standards:

1. The New Jersey Department of Transportation (NJDOT) bicycle safe grate standards described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April 1996).
2. A grate where each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is not greater than 0.5 inches across the smallest dimension.
3. For curb-openings inlets, including curb-opening inlets in combination inlets, the clear space in the curb opening, or each individual clear space if the curb opening has two or more clear spaces, shall have an area of no more than seven (7.0) square inches or be no greater than two (2.0) inches across the smallest dimension.

The following exemptions apply:

1. Where each individual clear space in the curb opening in existing curb-opening inlets do not have an area of more than nine (9.0) square inches.
2. Where the review agency determines that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets.
3. Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:
 - a. A rectangular space four and five-eighths inches long and one and one-half inches wide (this option does not apply for outfall netting facilities); or
 - b. A bar screen having a bar spacing of 0.5 inches.
4. Where flows are conveyed through a trash rack that has parallel bars with one inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in N.J.A.C. 7:8.
5. Where the Department determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet the standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.

APPENDIX B**LIST OF STUDIES****PVSC and Hydraulically Connected Sewer Systems****PVSC:**

- Passaic Valley Sewerage Commissioners CSO Characterization Study – Modeling Study, prepared by HydroQual, dated December 2003.
- Passaic Valley Sewerage Commissioners Public Participation Report, prepared by Hatch Mott Macdonald, dated April 2007.
- Cost and Performance Analysis Report for Domestic Treatment Works, prepared by Malcolm Pirnie, dated March 2007.
- Passaic Valley Sewerage Commissioners CSO Long Term Control Plan Cost and Analysis Report Volume 1 and Volume 2, prepared by Hatch Mott Macdonald, dated April 2007.

Bayonne:

- Combined Sewer Overflow Characterization Study and Work Plan, prepared by Hatch Mott MacDonald, dated February 14, 2003.
- Combined Sewer Overflow Discharge Characterization Study, Volume I – Final Monitoring Report, prepared by Hatch Mott MacDonald, dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study, Volume II – Supplemental Data, prepared by Hatch Mott MacDonald, dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study, Rainfall Monitoring Report, prepared by HydrolQual, Inc. and Hatch Mott MacDonald, dated August 2, 2006.
- CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.

Jersey City:

- Jersey City Municipal Utilities Authority Combined Sewer System Modeling Study, prepared by Malcolm Pirnie, Inc., dated July 2007.
- Jersey City Municipal Utilities Authority Cost and Performance Analysis Report, prepared by Malcolm Pirnie, Inc., dated April 2007.
- Jersey City MUA Public Participation Report, as prepared through the NJCSO Group, prepared by Hatch Mott MacDonald, dated April 2007.
- Jersey City Municipal Utilities Authority CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

- JCMUA Rainfall and CSO Monitoring Study, Volume 1 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.
- JCMUA Rainfall and CSO Monitoring Study, Volume 2 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.
- JCMUA Rainfall and CSO Monitoring Study, Volume 3 of 3, prepared by Malcolm Pirnie, Inc., dated November 2005.
- Combined Sewer Overflow Discharge Characterization Study – JCMUA Combined Sewer System Monitoring Program Supplemental Proposal and Work Plan, prepared by Malcolm Pirnie, Inc., dated December 2004.
- Combined Sewer Overflow Discharge Characterization Study - JCSA Monitoring Proposal and Work Plan, prepared by Malcolm Pirnie, Inc., dated July 1996.
- Combined Sewer Overflow Discharge Characterization Study - Sewer System Inventory and Assessment Report, prepared by Malcolm Pirnie, Inc., dated July 1996.
- Combined Sewer Overflow Discharge Characterization Study - Service Area Drainage and Land Use Report, prepared by Malcolm Pirnie, Inc., dated July 1996.

North Bergen:

- North Bergen MUA Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- North Bergen Municipal Utilities Authority CSO Long Term Control Plan, Cost & Performance Analysis Report, Volume 2, Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Final Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study, Supporting Laboratory Data, prepared by Hatch Mott MacDonald, dated March 2005.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 2 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated June 2003.
- North Bergen Municipal Utilities Authority CSO Characterization Study Group 1 – Dry Weather Water Quality and Quantity Monitoring Report, prepared by Hatch Mott MacDonald, dated March 2003.
- Combined Sewer Overflow Characterization Study, Quality Assurance/Work Plan, for the North Bergen Municipal Utilities Authority, prepared by Hatch Mott MacDonald, dated November 2002.
- North Bergen Township Sewer Mapping and Flow Monitoring Study, prepared by Metcalf & Eddy, December 1992.

Newark:

- City of Newark Department of Water and Sewer Utilities Cost and Performance Evaluation of CSO Control Technologies, March 6, 2008
- City of Newark Department of Water and Sewer Utilities Cost and Performance Evaluation of CSO Control Technologies, March 29, 2007
- Public Participation Report for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, March 2007

- City of Newark CSO Long Term Control Plan Cost and Performance Analysis Report Volume 2 – Technical Guidance Manual, December 2006
- Interim Report for the Public Participation Program for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, July 2005
- Combined Sewer Modeling Study: Final Report for the City of Newark Department of Water and Sewer Utilities Division of Sewers and Water Supply, April 2005

Harrison:

- Cost & Performance Analysis Report, CSO Long Term Control Plan, Appendix E, prepared by Town of Harrison, dated April 1, 2007.
- Cost & Performance Analysis Report, CSO Long Term Control Plan, Appendix F-1, through F-8, prepared by Town of Harrison, dated April 1, 2007.
- Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.

Kearny:

- Town of Kearny, Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- Town of Kearny, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 1, prepared by Hatch Mott MacDonald, dated March 2007.
- Town of Kearny, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

East Newark:

- Borough of East Newark Public Participation Report as prepared through the NJ CSO Group, prepared by Hatch Mott Macdonald, dated April 2007.
- Cost & Performance Analysis Report for the Borough of East Newark, prepared by Boswell McClave Engineering, dated March 2007.

Paterson:

- City of Paterson, Public Participation Report, prepared by Hatch Mott MacDonald, dated April 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Sections A – E, Appendix Section F (TGM Analysis), CSO Areas 001/003/005/006/007/010/013, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Section F (TGM Analysis), CSO Areas 014/015/016/021/022/023/024/025/026, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, Combined Sewer System, Cost and Performance Analysis, Appendix Section F (TGM Analysis), CSO Areas 027/028/029/030/031, Appendix sections G – M, prepared by Schoor DePalma in conjunction with HydroQual, Inc., dated March 2007.
- City of Paterson, CSO Long Term Control Plan, Cost and Performance Analysis Report, Volume 2 – Technical Guidance Manual, prepared by Hatch Mott MacDonald, dated December 2006.

Studies common to multiple facilities (Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson):

- Passaic Valley Sewerage Commissioners Interim Service Area Drainage and Land Use Report for the Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson, Appendix B – Combined Sewer Overflow Drainage Area and Control Information – Towns of Harrison and Kearny, and Borough of East Newark, prepared by Elson T. Killam Associates, dated February 1996.
- Passaic Valley Sewerage Commissioners Interim Sewer System Inventory and Assessment Report for the Towns of Harrison and Kearny, Borough of East Newark, and Cities of Newark and Paterson, prepared by Elson T. Killam Associates, dated February 1996.
- Combined Sewer Overflow Discharge Characterization Study - Final Quality Assurance/Work Plan for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates, dated November 1997.
- Combined Sewer Overflow Discharge Characterization Study - Final CSO Monitoring Report for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates, dated April 2002.
- Combined Sewer Overflow Discharge Characterization Study - Final Rainfall Monitoring Study Report for the Towns of Harrison and Kearny, Borough of East Newark, and City of Paterson, submitted on behalf of the above municipalities by the Passaic Valley Sewerage Commissioners, prepared by Elson T. Killam Associates and HydroQual, Inc., dated April 2002.
- CSO Characterization Study – Modeling Report, submitted by the Passaic Valley Sewerage Commissioners on behalf of the Towns of Harrison and Kearny, Borough of East Newark, and the City of Paterson, prepared by HydroQual, Inc., dated December 2003.