

**AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§ 1251 et seq.; the “CWA”),

**Conway Village Fire District
128 West Main Street
Conway, New Hampshire 03818**

is authorized to discharge from the facility located at

Conway, New Hampshire 03818

to the receiving water named: **Saco River (Segment ID: NHRIV600020304-01-01)**

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

This permit shall become effective on the date of signature.

This permit and the authorization to discharge expire at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on July 17, 1986.

This permit consists of 15 pages in Part I including effluent limitations, monitoring requirements, **Attachments A (Freshwater Acute Toxicity Test Procedure and Protocol), B (Sludge Compliance Guidance), and C (Summary of Required Reports)** and Part II including General Conditions and Definitions.

Signed this 7th day of September, 2011

/S/SIGNATURE ON FILE

Stephen S. Perkins, Director
Office of Ecosystem Protection

Environmental Protection Agency
Boston, MA

Part I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall 001 to the Saco River. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Unit	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow ¹	MGD	Report	-----	Report	Continuous	Recorder ¹
BOD ₅ ²	mg/l lbs/day	25 75	40 120	45 135	1/Week ² 1/Week ²	Grab Grab
TSS ²	mg/l lbs/day	25 75	40 120	45 135	1/Week ² 1/Week ²	Grab Grab
pH Range ³	6.5 – 8.0. S.U. (see Part I.H.5)				1/Day	Grab
Total Residual Chlorine	mg/l	1.0	-----	1.0	1/Day	Grab
<i>Escherichia coli</i> ⁴	cfu/100 ml	47	-----	88	2/Week	Grab
Total Phosphorus	mg/l	Report	-----	Report	1/Month	Grab

***See Pages 4 and 5 for footnotes.**

Part I.A.1. (Continued)

Effluent Characteristic	Unit	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) LC ₅₀ ^{5,6,7} Hardness ⁸ Ammonia Nitrogen as Nitrogen ⁸ Total Recoverable Aluminum ⁸ Total Recoverable Cadmium ⁸ Total Recoverable Chromium ⁸ Total Recoverable Copper ⁸ Total Recoverable Lead ⁸ Total Recoverable Nickel ⁸ Total Recoverable Zinc ⁸	% Effluent mg/l mg/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	----- ----- ----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- ----- ----- ----- -----	≥ 50 % Report Report Report Report Report Report Report Report	1/Year	Grab

***See Pages 4 and 5 for footnotes.**

Footnotes:

1. The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
2. To monitor for compliance with the “85 percent removal” requirement for BOD₅ and TSS found in Part I.A.4 of this permit, the influent BOD₅ and TSS concentrations shall be monitored twice per month using 24-hour composite samples and the results reported as average monthly values.
3. State certification requirement.
4. The average monthly value for *Escherichia coli* (*E. coli*) shall be reported as a geometric mean. *E. coli* shall be tested using an approved method as specified in 40 CFR Part 136, Table I.A. *E. coli* samples shall be collected concurrently with total residual chlorine samples.
5. The LC₅₀ is the concentration of effluent that causes mortality to 50% of the test organisms. Therefore, a 50% limit means that a sample of 50% effluent (half effluent and half upstream receiving water) shall cause no more than a 50% mortality rate.
6. The permittee shall conduct 48-hour acute (static) toxicity tests on effluent samples using the fathead minnow, *Pimephales promelas* (*P. promelas*), and the daphnid, *Ceriodaphnia dubia* (*C. dubia*) as the test species. The permittee shall follow the protocol specified in **Attachment A (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011)**.
7. This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical-specific limits, if the results of these toxicity tests indicate that the discharge causes an exceedance of any water quality criterion. Results from these toxicity tests are considered “New Information” and the permit may be modified as provided in 40 CFR § 122.62(a)(2).
8. If toxicity test(s) using receiving water as diluents show the receiving water to be toxic or unreliable, the permittee shall follow either:
 - a. Procedures outlined in Attachment A (Toxicity Test Procedure and Protocol) Section IV, DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or
 - b. The Self-Implementing Alternate Dilution Water Guidance, which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES Program Instructions for the Discharge Monitoring Forms (DMRs), which may be found on the EPA Region 1 website at <http://www.epa.gov/enforcementandassistance/dmr.html>. If this guidance is

revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment A. Any modification or revocation of this guidance will be transmitted to the permittee as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA New England directly using the approach outlined in Attachment A.

9. For each whole effluent toxicity test performed, the permittee shall report on the appropriate discharge monitoring report (DMR) the concentrations of ammonia nitrogen, hardness; and total recoverable aluminum, cadmium, chromium, copper, lead, nickel, and zinc detected in the 100% effluent sample. These results shall also be included in the WET test report. The results of TSS analyses conducted on samples of the effluent in conjunction with WET tests shall be included in the TSS results reported on the DMR for the month in which the WET TSS analyses are conducted and shall also be included in the WET test. All of the aforementioned parameters shall be determined to at least the Minimum Quantification Levels found in **Attachment A**.
10. Toxicity test samples shall be collected and tests completed once per year in the month of July. Toxicity test results shall be postmarked by the 15th day of August of each year.

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(Continued)**

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants, and to ensure that the surface water remains free from pollutants which produce odor, color, taste or turbidity which is not naturally occurring and would render the receiving water unsuitable for its designated use.
4. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both BOD₅ and TSS. The percent removal shall be calculated using the average monthly influent and effluent concentrations.
5. When the effluent discharge, for a period of 3 consecutive months, exceeds 80 percent of the 0.36 MGD design flow (0.29 MGD), the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.

6. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
7. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to both EPA and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 CFR § 122, Appendix A as amended) discharging process wastewater; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) Any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the POTW.
8. Limitations for Industrial Users
 - a. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
 - b. The permittee shall submit to EPA and NHDES-WD the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended) who commences discharge to the POTW after the effective date of this permit.

This reporting requirement also applies to any other IU who discharges an average of 25,000 gallons per day or more of process wastewater into the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Control Authority as defined in 40 CFR § 403.12(a) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).
 - c. In the event that the permittee receives reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from

industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended), the permittee shall forward all copies of these reports within ninety (90) days of their receipt to EPA and NHDES-WD.

B. UNAUTHORIZED DISCHARGES

The permit only authorizes discharges in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported in accordance with Part II, Section D.1.e.(1) of the General Requirements of this permit (twenty-four hour reporting).

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II of this permit and the following terms and conditions. The permittee is required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. This requirement shall be described in the Collection System Operation and Maintenance (O&M) Plan required pursuant to Section C.5. below.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. This requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

3. Infiltration and Inflow (I/I)

The permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow-related unauthorized discharges from its collection system and high flow-related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

Within 30 months of the effective date of the permit (see page 1 of this permit for the effective date), the permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

- a. All sanitary sewer lines and related manholes;
- b. All combined sewer lines, related manholes, and catch basins;
- c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain system (e.g. combined manholes);
- d. All outfalls, including the treatment plant outfall(s), CSOs, combined manholes, and any known or suspected SSOs;
- e. All pump stations and force mains;
- f. The wastewater treatment facility(ies);
- g. All surface waters (labeled);
- h. Other major appurtenances such as inverted siphons and air release valves;
- i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j. The scale and a north arrow; and
- k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

The permittee shall develop and implement a collection system operation and maintenance plan.

- a. **Within six (6) months of the effective date of the permit,** the permittee shall submit to EPA and NHDES:
 1. A description of the collection system management goals, staffing, information management, and legal authorities;
 2. A description of the overall condition of the collection system including a list of recent studies and construction activities; and
 3. A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.7. below.
- b. The full Collection System O&M Plan shall be submitted and implemented to EPA and NHDES **within twenty four (24) months of the effective date of this permit.** The plan shall include:

1. The required submittal from paragraph 5.a. above, updated to reflect current information;
2. A preventative maintenance and monitoring program for the collection system;
3. Sufficient staffing to properly operate and maintain the sanitary sewer collection system;
4. Sufficient funding and the source(s) of funding for implementing the plan;
5. Identification of known and suspected overflows and back-ups, including combined manholes. A description of the cause of the identified overflows and back-ups consistent with the requirements of the permit;
6. A description of the permittee's programs for preventing I/I-related effluent violations and all unauthorized discharges of wastewater, including overflows and bypasses and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and
7. An educational public outreach program for all aspects of I/I control, particularly private inflow.

6. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and NHDES **annually by March 31st**. The first annual report is due the first March 31st following submittal of the Collection System O&M Plan required by Part I.C.5.b. of this permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year.
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year.
- d. A map with areas identified for investigation/action in the coming year.
- e. If treatment plant flow has reach 80% of the 0.36 MGD design flow (0.29 MGD) or there have been capacity-related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.
- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

D. ALTERNATIVE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternate power source with which to sufficiently operate the publicly owned treatment works, as defined at 40 CFR § 122.2, which references the definition at 40 CFR § 403.3(o).

E. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with Clean Water Act (CWA) Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either state (Env-Wq 800) or federal (40 CFR Part 503) requirements.
3. The technical standards (40 CFR Part 503 regulations) apply to facilities which perform one or more of the following uses or disposal practices.
 - a. Land Application – The use of sewage sludge to condition or fertilize the soil.
 - b. Surface Disposal – The placement of sewage sludge in a sludge only landfill.
 - c. Fired in a sewage sludge incinerator.
4. The 40 CFR Part 503 conditions do not apply to facilities that place sludge within a municipal solid waste landfill (MSWLF). 40 CFR Part 503 relies on 40 CFR Part 258 criteria, which regulates landfill disposal, for sewage sludge disposed of in a MSWLF. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit, but rather treat the sludge (eg. lagoons, reed beds), or are otherwise excluded under 40 CFR Part 503.6.
5. The permittee shall use and comply with the attached Sludge Compliance Guidance document (**Attachment B**) to determine appropriate conditions. Appropriate conditions contain the following items:
 - a. General Requirements
 - b. Pollutant Limitations
 - c. Operational Standards (pathogen reduction and vector attraction reductions requirements)
 - d. Management Practices
 - e. Record Keeping
 - f. Monitoring
 - g. Reporting

Depending on the quality of material produced by a facility, all conditions may not apply to the facility.

6. If the sludge disposal method requires monitoring, the permittee shall monitor the pollutant concentrations, pathogen reduction, and vector attraction reduction at one of the following frequencies. The frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.
 - a. Less than 290.....1/Year
 - b. 290 to less than 1,500.....1/Quarter
 - c. 1,500 to less than 15,000.....6/Year
 - d. 15,000 plus.....1/Month
7. The permittee shall perform all required sewage sludge sampling using the procedures detailed in 40 CFR Part 503(h).
8. When the permittee is responsible for an annual report containing the information specified in the regulations, the report shall be submitted by **February 19th** of each year. Reports shall be submitted to the address contained in the reporting section of the permit.
9. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge use or disposal or when the sludge is disposed of in a MSWLF. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such cases, the permittee is required only to submit an annual report by **February 19th** of each year containing the following information:
 - a. Name and address of the contractor responsible for sludge use and disposal.
 - b. Quantity of sludge in dry metric tons removed from the facility.

Reports shall be submitted to the address contained in the reporting section of the permit.

F. SPECIAL CONDITIONS

1. pH Limit Adjustment

The permittee may submit a written request to the EPA-New England requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units (SU) found in the applicable National Effluent Limitation Guidelines (Secondary Treatment Regulations found at 40 CFR Part 133) for this facility. The permittee's written request must include the state's approval letter containing an original signature (no copies). The state's letter shall certify that the permittee has demonstrated to the state's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA New England indicating the pH limit range has

been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

G. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

- a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt-out request”).

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the NHDES Monthly Operating Reports (MORs), as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

- b. Submittal of NetDMR Opt-Out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

And

Attn: Compliance Supervisor
New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. All reports required under the permit, including NHDES Monthly Operating Reports, shall be submitted as an attachment to the DMRs. Signed and dated original DMRs and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to NHDES-WD.

H. STATE PERMIT CONDITIONS

1. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES discharge permit is issued by EPA under federal and state law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-

Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.

3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law, and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of the permit as issued by the other agency.
4. Pursuant to New Hampshire Statute RSA 485-A:13,I(c), any person responsible for a bypass or upset at a wastewater treatment facility shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone in the event of a bypass or upset at the wastewater treatment plant. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.
5. The pH range of 6.5 to 8.0 Standard Units (SU) must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water or (2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 – 9.0 SU, which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR 133.102(c).
6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):
 - a. Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:
 1. Any extension of a collector or interceptor, whether public or private, regardless of flow;
 2. Any wastewater connection or other discharge in excess of 5,000 gallons per day (gpd);
 3. Any wastewater connection or other discharge to a wastewater treatment plant (WWTP) operating in excess of 80 percent design flow capacity based on actual average flow for 3 consecutive months;

4. Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity; and
5. Any sewage pumping station greater than 50 gallons per minute (gpm) or serving more than one building.
7. For each new or increased discharge of industrial waste to the POTW, the permittee shall submit, in accordance with Env-Ws 904.14(e), an "Industrial Wastewater Discharge Request Application" approved by the permittee in accordance with Env-Ws 904.13(a). The "Industrial Wastewater Discharge Request Application" shall be prepared in accordance with Env-Ws 904.10.
8. Pursuant to Env-Ws 904.17, at a frequency no less than every five years, the permittee shall submit to NHDES:
 - a. A copy of its current sewer use ordinance. The sewer use ordinance shall include local limits pursuant to Env-Ws 904.04 (a).
 - b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant industrial discharger, its name and address, the name and daytime telephone number of a contact person, product(s) manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.
 - c. A list of all permitted indirect dischargers; and
 - d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
9. In addition to submitting DMRs, monitoring results shall also be summarized for each calendar month and reported on separate Monthly Operations Report Form(s) (MORs) electronically submitted or postmarked no later than the 15th day of the month following the completed reporting period. Signed and dated MORs shall be submitted through NetDMR, or if the permittee has opted out of NetDMR, the permittee shall mail the MOR to:

New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
P.O. Box 95, 29 Hazen Drive
Concord, New Hampshire 03302-0095

Summary of Required Report Submittals*

Required Report	Date Due	Submitted by:	Submitted to:
Whole Effluent Toxicity Test Report (Part I.A.1)	June 30 and December 31 of each year.	Conway Village Fire District	Via NetDMR Or
			Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Collection System Map (Part I.C.4)	Within 30 days of effective date	Conway Village Fire District	Keep on site
Initial Collection System O&M Plan (Part I.C.5.a.)	Within 6 months of effective date	Conway Village Fire District	Via NetDMR Or
			Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services

Required Report	Date Due	Submitted by:	Submitted to:		
			Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095		
Full Collection System O&M Plan (Part I.C.5.b.)	Within 24 months of the effective date	Conway Village Fire District	<table border="1"> <tr> <td data-bbox="1220 433 1850 586"> Via NetDMR Or </td> </tr> <tr> <td data-bbox="1220 591 1850 980"> Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095 </td> </tr> </table>	Via NetDMR Or	Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Via NetDMR Or					
Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095					
O&M Annual Report (Part I.C.6.)	Annually by March 31st	Conway Village Fire District	<table border="1"> <tr> <td data-bbox="1220 985 1850 1138"> Via NetDMR Or </td> </tr> <tr> <td data-bbox="1220 1143 1850 1349"> Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 </td> </tr> </table>	Via NetDMR Or	Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912
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Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912					

Required Report	Date Due	Submitted by:	Submitted to:
			New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Annual Sludge Report (Part I.D.8)	Annually by February 19 (if sludge disposal occurred during the previous calendar year)	Conway Village Fire District	Via NetDMR Or Hard Copies: Environmental Protection Agency Water Technical Unit 5 Post Office Square, Suite 100 (OES04-4) Boston, MA 02109-3912 New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095

* This table is a summary of the reports required to be submitted under this NPDES permit as an aid to the permittee(s). If there are any discrepancies between the permit and this summary, the permittee(s) shall follow the permit requirements.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I – NEW ENGLAND
5 POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912**

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT No.: **NH0100412**

PUBLIC NOTICE START AND END DATES: **July 20, 2011 – August 18, 2011**

NAME AND ADDRESS OF APPLICANT:

**Conway Village Fire District
128 West Main Street
Conway, New Hampshire 03818**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Conway, New Hampshire 03818

RECEIVING WATER: **Saco River (Segment ID: NHRIV600020304-01-01)**

CLASSIFICATION: **B**

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I. PROPOSED ACTION

The Conway Village Fire District has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge treated effluent into the designated receiving water, the Saco River. The current permit was issued to the facility on July 17, 1986 and expired on July 17, 1991. This permit, hereafter referred to as the current permit, was administratively continued pursuant to 40 CFR § 122.6, as a timely and complete application for permit reissuance was filed by the permittee. The draft permit is conditioned to have a term of five years.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The Conway Village Fire District (CVFD) wastewater treatment facility (WWTF) provides secondary treatment to sanitary wastewater collected from residences and a small number of industries in town using a two-stage aerated lagoon system. The facility was upgraded in 1990 and has a design flow of 0.36 million gallons per day (MGD). The treatment plant consists of a series of 7 lagoons followed by a chlorine contact chamber prior to discharge. Wastewater enters the first lagoon (4.2 million gallons), which was the subject of the 1990 upgrade. This lagoon is provided with eight 20-horsepower (HP) floating mechanical aspirator aerator units. Flow is then directed by gravity through a splitter box to four aerated lagoons (930,000 gallons each). These lagoons are aerated with a Hinde subsurface aeration system equipped with 5-HP blowers. Wastewater is then directed to two 45,000-gallon polishing ponds prior to discharge to a chlorine contact tank. The chlorine contact tank has a twenty-minute chlorine contact time at a design flow of 0.36 MGD. The design provides a total detention time of 60 days. The location of the WWTF and a process flow diagram are shown in Figures 1, and 2, respectively. The geographic coordinates of discharge outfall 001 are listed below:

<u>Outfall No.</u>	<u>Description of Discharge</u>	<u>Outfall Location</u>
001	Secondary Wastewater Treatment Plant Effluent	43°58'47.2"N / 71°6'30.9"W

The entire collection system consists of separate sanitary sewers. Information provided in the permittee's re-application states that the facility serves a population of approximately 2,400. Sludge has never been removed from the facility, but if there was a need to remove it, the planned disposal location is the Town of Conway landfill.

CVFD has informed EPA that it plans to tie its wastewater flows into the North Conway WWTF and abandon its existing treatment plant and outfall. This work is expected to be completed by 2013. Upon completion of the tie-in and elimination of the CVFD discharge, the CVFD discharge permit will be terminated.

III. DESCRIPTION OF THE DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters based on 2008-2009 monitoring data can be found in **Appendix A**.

IV. LIMITATIONS AND CONDITIONS

The draft permit contains effluent limitations for five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), pH, *Escherichia coli* (*E. coli*), total residual chlorine (TRC), and whole effluent toxicity (WET). In addition, the draft permit contains monitoring requirements for flow, phosphorus, ammonia nitrogen, hardness; and total recoverable aluminum, cadmium, chromium, copper, lead, nickel, and zinc. The effluent limitations and monitoring requirements may be found in Part I of the draft NPDES permit.

The basis for each limitation and monitoring requirement found in the draft permit is discussed further in this fact sheet.

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. General Statutory and Regulatory background

Congress enacted the Clean Water Act (CWA) “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” (CWA § 101(a)). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into waters of the United States from any point source, except as authorized by specified permitting sections of the CWA, one of which is Section 402 (see CWA §§ 301(a) and 402(a)). Section 402 establishes one of the CWA’s principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the CWA, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” in accordance with certain conditions (see CWA § 402(a)). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements (see CWA § 402(a)(1) and (2)).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits, technology-based effluent limitations and water quality-based effluent limitations (see CWA §§ 301, 303, and 304(b). Also see 40 CFR § Parts 122, 125, and 131). Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted (see CWA §301(b)). As a class, POTWs must meet performance-based requirements, which are based on secondary treatment. The secondary treatment technology guidelines (effluent limits) consist of technology-based requirements expressed in terms of BOD₅, TSS, and pH (see 40 CFR Part 133).

Water quality-based effluent limitations are developed and incorporated into NPDES discharge permits regardless of the decision made with respect to technology and economics in establishing technology-based limits. Specifically, Section 301(b)(1)(C) of the CWA requires achievement of “any more stringent limitation, including those necessary to meet water quality standards... established pursuant to any State law or regulation...” See 40 CFR §§ 122.4(d), 122.44(d)(1) (providing that a permit must contain effluent limits as necessary to protect State water quality standards, “including State narrative criteria for water quality”) (emphasis added) and § 122.45(d)(5) providing in part that a permit incorporate any more stringent limits required by Section 301(b)(1)(C) of the CWA).

The CWA requires that states develop water quality standards for all water bodies within the state (see CWA § 303). Water quality standards consist of three elements: (1) one or more designated use for each waterbody or waterbody segment in the state; (2) water quality criteria consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each waterbody without impairing the designated use(s) of that waterbody; and (3) an antidegradation provision focused on protecting high quality waters and protecting and maintaining the level of water quality necessary to protect existing uses (CWA § 303(c)(2)(a) and 40 CFR Part 131.12). The limits and conditions contained within the draft permit reflect the goal of the CWA and EPA to achieve and then to maintain water quality standards within the receiving water.

The applicable New Hampshire water quality standards can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700 et seq. See generally, Title 50, Water Management and Protection, Chapter 485A, Water Pollution and Waste Disposal Section 485-A. These regulations were readopted effective May 21, 2008.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from a state's water quality standards to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable instream pollutant concentrations. Acute and chronic aquatic life criteria are generally implemented through maximum daily limits and average monthly limits, respectively. When a state has not established a numeric water quality criterion for a specific pollutant that is present in the effluent in a concentration that causes or has the reasonable potential to cause or contributes to a violation of a narrative criterion within a water quality standard, the permitting authority must establish limits in one or more of the following ways: (1) based on a calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated uses; (2) on a case-by-case basis using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or (3) in certain circumstances, based on an indicator parameter (40 CFR § 122.44(d)(1)(vi)(A-C)).

Under Section 301(b)(1) of the CWA, POTWs must have achieved effluent limitations based upon secondary treatment by July 1, 1977. Since all statutory deadlines for meeting technology-based effluent limitations established pursuant to the CWA have expired, the deadline for compliance with technology-based effluent limits for a POTW is the date of permit issuance (40 CFR § 125.3(a)). Extended compliance deadlines cannot be authorized by a NPDES permit if statutory deadlines have passed. The federal regulations governing EPA's NPDES program are generally found in 40 CFR Parts 122, 124, and 136.

B. Introduction

Pursuant to 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to technology-based limits necessary to achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality. In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-

conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality (40 CFR § 122.44(d)(1)(i)). An excursion occurs if the actual or projected instream concentration exceeds the applicable criterion.

The CVFD WWTF discharges treated effluent to the Saco River, which is classified by the State of New Hampshire as a Class B water. Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, and shall contain a dissolved oxygen content of at least 75 percent saturation (see RSA 485-A:8). The following designated uses are assigned to Class B waters: the protection and propagation of aquatic life and wildlife, for swimming and other recreational purposes; and, after treatment, for water supplies.

Sections 305(b) and 303(d) of the CWA require that states complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. The results of the 305(b) assessments are used in the development of the State of New Hampshire's 303(d) lists, which are published every two years and identifies the water bodies which are not meeting (or are not expected to meet) water quality standards, identifies the designated use(s) which is impaired and also the pollutant(s) causing the impairment(s).

The segment of the Saco River into which the CVFD WWTF discharges (NHRIV600020304-01-01), as well as the recreational beach approximately one mile downstream (Smith Easton Recreational Area; NHRIV600020304-10-02), are identified in the *State of New Hampshire Final 2008 Section 303(d) Surface Water Quality List* (NHDES 2008) as not meeting the aquatic life designated use (i.e., this use is impaired). The pollutant listed as causing the impairment and requiring the development of a TMDL is *E. coli*, and the source is listed as unknown (*State of New Hampshire Final 2008 Section 303(d) Surface Water Quality List* (NHDES 2009)).

A statewide bacteria TMDL was approved by EPA on September 21, 2010. The TMDL includes a target bacteria reduction of 20% for Smith Easton Recreational Area, and 22% for the Saco River itself. EPA is required to use this information to establish water quality limits when issuing NPDES permits to facilities which discharge to impaired waters. See generally 40 CFR §122.44 (d). The draft permit includes limitations on *E. coli* that were developed to ensure that the CVFD discharge complies with the TMDL requirements. See Section V.D.3. for the derivation of the *E. coli* limitations.

1. Reasonable Potential

In determining whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above a narrative or numeric criterion within a state water quality standard, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) the variability of the pollutant or pollutant parameter in the effluent; (3) the sensitivity of the species to toxicity testing; (4) where appropriate, the dilution of the effluent in the receiving

water; and (4) the statistical approach outlined in the *Technical Support Document for Water Quality-based Toxics Control, Section 3* (USEPA, March 1991 [EPA/505/2-90-001])(see also 40 CFR § 122.44(d)(1)(ii)).

2. Anti-backsliding

Section 402(o) of the CWA generally provides that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. EPA has also promulgated anti-backsliding requirements which are found at 40 CFR § 122.44(l). Unless applicable anti-backsliding requirements are met, the limits and conditions in the reissued permit must be at least as stringent as those in the previous permit. The limitations and conditions contained within the draft permit satisfy antibacksliding requirements.

3. State Certification

Section 401(a)(1) of the CWA requires that all NPDES permit applicants obtain a certification from the appropriate state agency stating that the permit will comply with all applicable federal effluent limitations and state water quality standards. See CWA § 401(a)(1). The regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates (40 CFR § 124.53(a)). The regulations further provide that, “when certification is required...no final permit shall be issued...unless the final permit incorporated the requirements specified in the certification under § 124.53(e)” (40 CFR § 124.55(a)(2)).

C. Design Flow

The CVFD WWTF has a design flow of 0.36 MGD, which was used in the calculation of the available dilution as well as the effluent limitations for total residual chlorine, whole effluent toxicity, and the mass-based limits for BOD₅ and TSS, in accordance with the requirements found at 40 CFR §122.45(b).

The current permit, issued in 1986, listed a design flow of 0.5 MGD for the CVFD WWTF. At that time, a facility upgrade was under way that would have increased the design flow to 0.5 MGD. EPA decided to reissue the permit at 0.5 MGD on the rationale that this upgrade and design flow increase would occur during the life of the permit. However, the project was not completed, and the design flow of the facility remains at 0.36 MGD. Thus, EPA is reissuing the permit at a 0.36 MGD design flow.

The draft permit maintains the requirement in the current permit for the permittee to submit to EPA and NHDES a projection of loadings, a program for maintaining satisfactory treatment levels, and plans for facility improvements whenever the effluent flow exceeds 80 percent of the facility’s design flow capacity for three consecutive months. The draft permit also maintains the average monthly and maximum daily flow reporting requirements found in the current permit.

D. Conventional pollutants

1. Five-Day Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS)

The draft permit contains average monthly and average weekly effluent limitations for BOD₅ and TSS of 25 mg/l and 40 mg/l, respectively. The maximum daily limitations for BOD₅ and TSS of 45 mg/l in the current permit have been maintained in the draft permit.

The draft permit also contains average monthly (75 lbs/day), average weekly (120 lbs/day), and maximum daily (135 lbs/day) mass limits for BOD₅ and TSS, in accordance with the requirements of 40 CFR 122.45(f) (see **Appendix E**). The monitoring frequency for BOD₅ and TSS has been increased to once per week.

The concentration and mass limitations for BOD₅ and TSS in the draft permit are the same as those in the current permit and are consistent with antibacksliding requirements.

In accordance with the provisions of 40 CFR § 133.102(a)(4)(iii), the draft permit requires that the 30-day average percent removal of BOD₅ and TSS be no less than 85%.

Effluent monitoring data submitted by the permittee from 2006-2008 show that the concentration and mass limitations for BOD₅ and TSS in the current permit have been consistently met (see **Appendix A**).

2. pH

The limitations for pH in the draft permit are based upon state certification requirements and the state's statutes found at RSA 485-A:8 II, requiring that "The pH range for said (Class B) waters shall be 6.5-8.0 except when due to natural causes." The pH limitations in the draft permit (6.5-8.0 Standard Units (SU)) are the same as those in the current permit and so are consistent with antibacksliding requirements, and are at least as stringent as the requirements of 40 CFR § 133.102(c). The permittee shall continue to monitor the pH of the effluent once per day.

The special condition in Part I.E. of the current permit, which allows for a change in the pH limitation when certain conditions are met (i.e., such a change would be considered if the permittee demonstrates to the satisfaction of the NHDES-WD that the instream water quality standard for pH would be protected when the discharge is outside the permitted range), has been maintained in the draft permit. Therefore, Part I.F.2. of the draft permit contains a provision that would allow EPA to modify the pH limits using a certified letter approach in the event NHDES-WD approves an adjustment of the pH limits. Such a change would only be allowed if it has been demonstrated that the revised pH limit range does not alter the naturally occurring pH of the receiving water. The pH limit range shall not be less restrictive than 6.0-9.0 SU, which is the pH limit range specified in the applicable National Effluent Limit Guidelines for POTWs (secondary treatment standards) found at 40 CFR Part 133.

Effluent monitoring data submitted by the permittee from 2008 – 2010 indicates that the pH of the effluent has consistently been within the range of 6.5 – 8.0 SU (see **Appendix A**). The

limitations for pH in the draft permit are sufficiently stringent to ensure that the water quality criteria for pH will not be exceeded as a result of the discharge.

3. *Escherichia coli (E. coli)*

The current permit contains effluent limitations for Total Coliform bacteria. Effective August 31, 1991, revision of State statutes changed the bacteria criteria for freshwater and saltwater receiving waters (N.H. RSA 485-A:8). Accordingly, the current permits limits for Total Coliform have been replaced in the draft permit with limitations for *E. coli* bacteria. Historically, the NHDES-WD has required bacteria limits to be satisfied at end-of-pipe with no allowance for dilution.

There are two sets of *E. coli* bacterial criteria in the State's Statutes (N.H. RSA 485-A:8): one for beach areas, and one for non-designated beach areas. Because Smith Easton Recreational Area, a bathing beach, is located approximately 2 miles downstream of the facility, the beach criteria have been applied to this discharge. Calculation for compliance with the average monthly limit for *E. coli* shall be determined by using the geometric mean.

Effluent monitoring data submitted by the permittee from 2008-2009 indicate one exceedance for the maximum daily total coliform limit (see **Appendix A**). The monitoring frequency in the draft permit has been increased to twice per week. The *E. coli* sample shall be taken at the same time as the daily total residual chlorine sample.

E. Available Dilution, Non-conventional and Toxic Pollutants

Water quality-based effluent limitations for specific toxic pollutants are based on numeric chemical-specific criteria derived from extensive scientific studies. The EPA has summarized and published toxicity criteria for specific toxic pollutants in the *Quality Criteria for Water* (USEPA 1986 [EPA440/5-86-001]), commonly referred to as the "Gold Book". The Gold Book includes acute aquatic life criteria (to protect against the effects of short-term exposure, such as death) and chronic aquatic life criteria (to protect against the effects of long-term exposure, such as impaired growth). The State of New Hampshire adopted the Gold Book criteria (with certain exceptions) into the State's Surface Water Quality Regulations, which were readopted effective May 21, 2008. EPA uses the pollutant-specific criteria contained within the state standards along with the available dilution in the receiving water in the development of water quality-based effluent limitations.

1. Available Dilution

In accordance with New Hampshire's Water Quality Standards (RSA 485-A:8 VI, Env-Wq 1705.02), the available dilution for rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10 flow). The 7Q10 is used for aquatic life and human health criteria for non-carcinogens, while the long-term harmonic mean flow is used for human health (for carcinogens only) in the receiving water (see Env-Wq 1702.44). Furthermore, ten percent of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations (Env-Wq 1705.01).

A site-specific dilution factor was used to develop water quality-based effluent limits in the draft permit. The dilution factor is based on an estimate of the 7Q10 flow in the receiving water at the point of discharge, derived from flow data collected by a United States Geological Survey (USGS) flow gage in the Saco River (USGS Gage No. 01064500, Saco River near Conway, NH), located approximately one river mile downstream from the discharge. Gaged data from 1903-2010 was used, and a 7Q10 flow value at the gage of 95.9 cfs (62 MGD) was calculated.

Accounting for the 7Q10 flow at the point of discharge, the design flow of the facility, and the required 10 % reserve capacity in the receiving water, a dilution factor of 155 was calculated. (see **Appendix E** for calculations)

2. Total Residual Chlorine (TRC)

The acute and chronic aquatic life criteria for total residual chlorine specified in the New Hampshire water quality standards are 19 µg/l and 11 µg/l, respectively (see Env-Wq. 1703.21, Table 1703.1). The current permit requires daily monitoring of total residual chlorine but contains no limits.

To ensure that the acute and chronic criteria are met in the receiving water, the maximum daily and average monthly concentrations of total residual chlorine in the discharge must not exceed 2,964 µg/l and 1,716 µg/l, respectively. These values were determined by multiplying the dilution factor by the criteria, as shown below.

$$TRC_{Acute} = 19 \mu\text{g/l} * 155 = 2,945 \mu\text{g/l} (2.9 \text{ mg/l})$$

$$TRC_{Chronic} = 11 \mu\text{g/l} * 155 = 1,705 \mu\text{g/l} (1.7 \text{ mg/l})$$

The average monthly and maximum daily limitations for total residual chlorine have been set at 1.0 mg/l in the draft permit. These limitations, which are more stringent than the limits calculated above, are based upon best professional judgment (BPJ), as allowed by CWA Section 402(a)(1) and 40 CFR § 125.3

3. Total Phosphorus

The current permit does not require total phosphorus monitoring, and the permit reissuance application submitted in 1999 required no effluent testing. Therefore, no data exist for CVFD's phosphorus discharges. When setting an effluent limit, EPA takes into account the concentration of the pollutant upstream of the discharge and the available dilution in the receiving water. In this case, the dilution factor in the Saco River is quite high (155:1), and data indicate that the river does not have excessive phosphorus levels. This makes it very unlikely that CVFD needs a phosphorus limit at this time. However, given the nutrient criteria development underway in Maine and the emerging concern about phosphorus in New England waters in general, EPA believes it is prudent to monitor CVFD's effluent phosphorus levels in case a phosphorus limit is needed in the future. The draft permit therefore requires total phosphorus monitoring at a frequency of once per month.

4. Whole Effluent Toxicity (WET)

EPA's *Technical Support Document for Water Quality Based Toxics Control* (USEPA 1991 [EPA/505/290-001]) recommends using an "integrated strategy" containing both pollutant (chemical) specific approaches and whole effluent (biological) toxicity approaches to control toxic pollutants in effluent discharges from entering the nation's waterways. EPA Region 1 adopted this "integrated strategy" on July 1, 1991, for use in permit development and issuance. These approaches are designed to protect both aquatic life and human health. Pollutant-specific approaches such as those found in the Gold Book and state regulations, address individual chemicals, whereas whole effluent toxicity (WET) approaches evaluate interactions between pollutants, thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. Furthermore, WET measures the "additive" and/or "antagonistic" effects of individual chemical pollutants, which pollutant-specific approaches do not; thus, the need for both approaches. In addition, the presence of an unknown toxic pollutant can be discovered and addressed through this process.

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts and New Hampshire law states that, "all waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life; ..." (NH RSA 485-A:8, VI and NH Code of Administrative Rules, Part Env-Wq 1703.21). The federal NPDES regulations found at 40 CFR §122.44(d)(1)(v) require whole effluent toxicity limits in a permit when reasonable potential exists for a discharge to cause or contribute to an excursion above state narrative criteria for toxicity. Furthermore, the results of toxicity tests may be used to demonstrate compliance with the "no toxics in toxics amounts" requirement found in both the CWA and in the State of New Hampshire's regulations.

The current policy of EPA Region 1 is to require toxicity testing in all NPDES permits issued to POTWs with dilution factors of less than 1,000:1. The type of whole effluent toxicity test(s) (acute and/or chronic) and the effluent limitation(s) required by the permit are based on the available dilution in the receiving water at the point of discharge. NPDES permits issued to municipal dischargers (i.e., POTWs) having a dilution factor greater than 100 (as is the case with the CVFD WWTF) typically include an acute (LC₅₀) WET limit and require that WET tests be conducted using the daphnid, *Ceriodaphnia dubia* (*C. dubia*) and the fathead minnow, *Pimephales promelas* (*P. promelas*) as the test organisms. The acute limit (LC₅₀) is the percentage of effluent in a sample that must not cause more than a 50 % mortality rate in the test organisms. The draft permit includes an LC₅₀ limit of ≥ 50 %. An LC₅₀ limit of ≥ 50 % means that a sample comprised of 50 % effluent shall not cause mortality to more than 50 % of the test organisms. The permittee shall conduct WET testing once annually, during the month of July.

Additional Analyses

The draft permit includes a requirement for the reporting of several selected parameters, the results of which are determined through analyses conducted on samples of the 100 percent effluent sample in conjunction with WET tests. Specifically, the draft permit includes analysis

and reporting requirements for hardness, ammonia nitrogen as nitrogen, and total recoverable aluminum, cadmium, chromium, copper, lead, nickel, and zinc

If toxicity is found and persists in the effluent, the monitoring frequency and testing requirements may be increased. The permit may also be modified, or alternatively revoked and reissued, to incorporate additional toxicity testing requirements or chemical specific limits. These actions will occur if the Regional Administrator determines the NH standards are not adequately enforced and users of the receiving water are not adequately protected during the remaining life of the permit. Results of these toxicity tests are considered “new information not available at the permit development”; therefore, the permitting authority is allowed to use said information to modify an issued permit under the authority in 40 CFR §122.62(a)(2).

VI. SLUDGE

Section 405(d) of the Clean Water Act (CWA) requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations were signed on November 25, 1992, published in the Federal Register on February 19, 1993, and became effective on March 22, 1993. Domestic sludge that is land applied, disposed in a surface disposal unit, or fired in a sewage sludge incinerator is subject to federal Part 503 technical and to State Env-Wq 800 standards. Part 503 regulations have a self-implementing provision; however, the CWA requires implementation through permits. Domestic sludge that is disposed of in municipal solid waste landfills are in compliance with Part 503 regulations provided the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 CFR Part 258.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA-New England has prepared a 72-page document entitled “EPA Region I NPDES Permit Sludge Compliance Guidance” for use by the permittee in determining their appropriate sludge conditions for their chosen method of sewage sludge use or disposal practices. This guidance document is available upon request from EPA Region 1 and may also be found at:

<http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>. The permittee is required to submit an annual report to EPA-New England and NHDES-WD, by February 19th each year, containing the information specified in the Sludge Compliance Guidance document for their chosen method of sewage sludge use or disposal practices

The permittee is required to submit an annual report to EPA and NHDES-WD by **February 19th** of each year, containing the information specified in the Sludge Compliance Guidance Document attached to the draft permit for the permittee's chosen method of sludge disposal.

VII. INDUSTRIAL USERS

The permittee is presently not required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR §403 and Section 307 of the CWA. However, the draft permit contains conditions that are necessary to allow EPA and the State of New Hampshire to ensure that pollutants from industrial users will not pass through the facility and cause violations of water quality standards in the receiving water, sludge use and disposal difficulties or cause interference with the operation of the treatment facility. The

permittee is required to notify EPA and the State of New Hampshire whenever a process wastewater discharge to the facility from a primary industrial category is planned, (see 40 CFR §122 Appendix A for list) or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of issuance of the permit. The permit also requires the permittee to: (1) report to EPA and NHDES the name(s) of all Industrial Users subject to Categorical Pretreatment Standards under 40 CFR §403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended) who commence discharge to the POTW after the effective date of the permit, and (2) submit to EPA and NHDES copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users.

VIII. OPERATION AND MAINTENANCE

Regulations regarding proper operation and maintenance are found at 40 CFR § 122.41(e). These regulations require, “that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” The treatment plant and the collection system are included in the definition of “facilities and systems of treatment and control” and are therefore subject to the proper operation and maintenance requirements of 40 CFR § 122.41(e).

Similarly, a permittee has a “duty to mitigate” pursuant to 40 CFR § 122.41(d), which requires the permittee to “take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment.”

General requirements for proper operation and maintenance and mitigation have been included in Part II of the draft permit. Specific permit conditions have also been included in Parts I.B, C, and D. of the draft permit. These requirements include mapping of the wastewater collection system, reporting of unauthorized discharges (including sanitary sewer overflows (SSOs)), maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration (I/I) to the extent necessary to prevent SSOs and I/I-related effluent violations at the wastewater treatment plant, and for maintaining alternate power where necessary.

IX. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.* (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA’s action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat (16 U.S.C. § 1802(10)).

The Amendments broadly define “essential fish habitat” (EFH) as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. § 1802(10)). “Adverse impact” means any impact which reduces the quality and/or quantity of EFH (50 CFR § 600.910(a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species’ fecundity), site-specific

or habitat-wide impacts, including individual, cumulative, or synergistic consequences or actions.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b)(a)(A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Atlantic salmon (*Salmo salar*) is the only managed species believed to be present during one or more life stages in the area where the CVFD WWTF discharge outfall is located (in the Saco River).

EPA has determined that the draft permit has been conditioned in such a way so as to minimize any adverse impacts on Atlantic salmon EFH for the following reasons:

- This permit action is a reissuance of an existing NPDES permit.
- The discharge has a very large dilution factor, calculated at 155, using the 7Q10 river flow of the Saco River.
- EPA's evaluation indicates that there is no reasonable potential for the discharge to cause or contribute to an excursion above water quality criteria for aluminum, zinc, nickel, cadmium, chromium, lead, or copper, as the concentrations of these metals in the effluent were well below the maximum allowable concentrations that may be present in the discharge. Acute whole effluent toxicity tests shall be conducted annually to document that the effluent meets water quality criteria and does not present toxicity problems.
- Chlorine presents a threat to this species. Average monthly and maximum daily limitations for total residual chlorine of 1.0 mg/l have been proposed in the draft permit. These water quality-based limits for chlorine are more stringent than those which would be necessary based on state water quality criteria.
- The facility withdraws no water from the Saco River; therefore no life stage of the Atlantic salmon is vulnerable to impingement or entrainment from this facility.
- The draft permit prohibits the discharge from violating state water quality standards.
- The draft permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts.
- The effluent limitations and conditions in the draft permit were developed to be protective of all aquatic life.

EPA believes that the conditions and limitations contained within the draft permit adequately protects all aquatic life, including those with designated EFH in the receiving water, and that further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of

this permit action, or if new information is received that changes the basis for EPA's conclusions, NMFS will be contacted and an EFH consultation will be re-initiated.

As the federal agency charged with authorizing the discharge from this facility, EPA has submitted the draft permit and fact sheet, along with a cover letter, to NMFS Habitat Division for their review.

X. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The USFWS administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

As the federal agency charged with authorizing the discharge from this facility, EPA has conducted a review in support of our consultation responsibilities under section 7 (a)(2) of the Endangered Species Act (ESA) for potential impacts to federally listed species. Based on the information available, EPA has determined that the small whorled pogonia (*Isotria medeoloides*) may be present in the vicinity of the WWTP discharge.

The small whorled pogonia orchid has been identified in Carroll County, New Hampshire, where the CVFD WWTF is located, however it has not been identified in the Town of Conway itself. In addition, the small whorled pogonia is found in "forests with somewhat poorly drained soils and/or a seasonally high water table," according to the USFWS website. This species is not aquatic; therefore it is unlikely that it would come into contact with the facility discharge. Furthermore, the primary threats to this species are habitat destruction and herbivory, factors not affected by this permit action.

EPA is coordinating a review of this finding with USFWS and NMFS through the Draft Permit and Fact Sheet, and consultation under Section 7 of the ESA with USFWS and NMFS is not required.

XI. ANTIDegradation

The New Hampshire water quality standards include an antidegradation provision that states that the existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected (Env-Wq 1708).

The draft permit contains limitations and conditions which are at least as stringent as those contained in the existing permit. The State of New Hampshire has indicated that there will be no lowering of water quality and no loss of existing designated uses in the receiving water as a

result of this permit action, and that additional antidegradation review is not warranted at this time.

XII. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41 (j), 122.44 (l), and 122.48.

The draft permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt-out request”).

In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit <http://www.epa.gov/netdmr> for contact information for New Hampshire.

The Draft Permit requires the permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

The Draft Permit also includes an “opt-out” request process. Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the

permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

XIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the state water pollution control agency with jurisdiction over the receiving water(s) in which the discharge originates either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate state water quality standards or the agency waives its right to certify as set forth in 40 CFR § 124.53. The NHDES is the certifying authority within the State of New Hampshire.

The staff of the NHDES-WD has reviewed the draft permit and advised EPA Region 1 that the limitations are adequate to protect water quality. EPA Region 1 has requested permit certification by the state and expects that the draft permit will be certified. Regulations governing state certification are set forth in 40 CFR §§124.53 and §124.55.

XIV. COMMENT PERIOD, REQUESTS FOR PUBLIC HEARINGS AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to:

Robin Johnson
U.S. Environmental Protection Agency
5 Post Office Square - Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1045; Fax: (617) 918-0045

Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issue proposed to be raised at the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing (if applicable), the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

Information concerning the draft permit may be obtained between the hours of 9:00 am and 5:00 pm, excluding holidays.

7/14/2011

Date:

Stephen Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

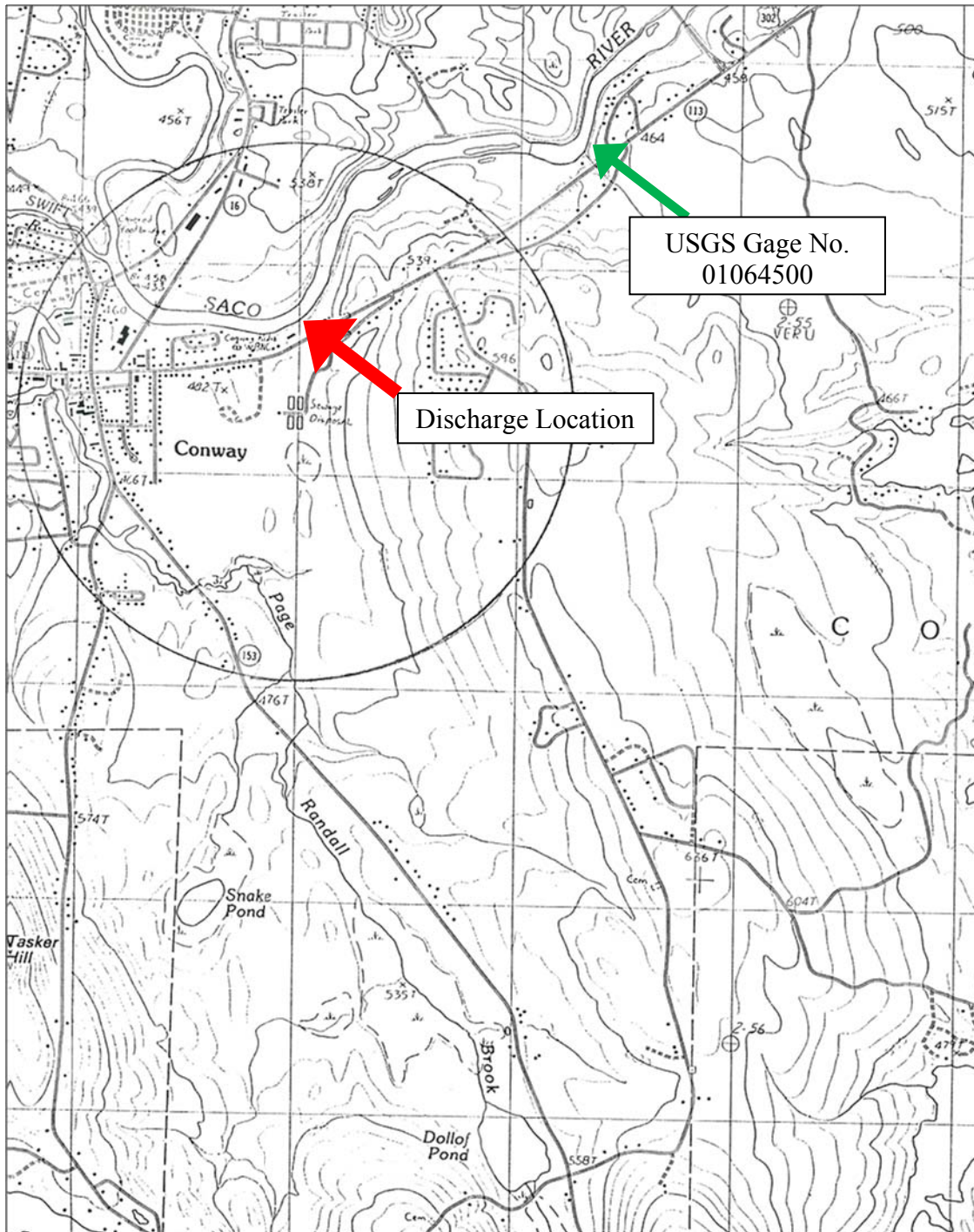


Figure 1 - Location of Conway Village Fire District WWTF.

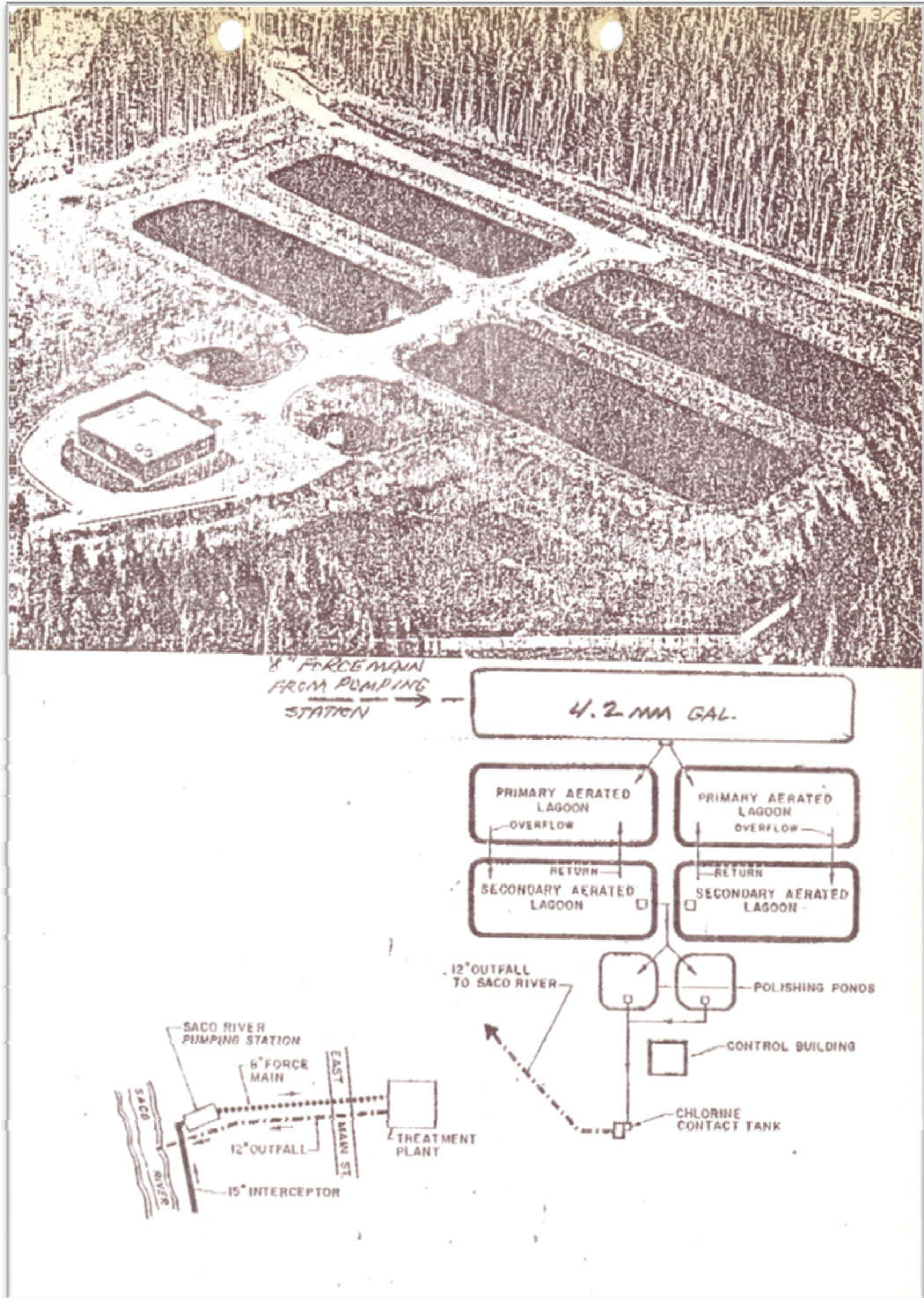


Figure 2 - Conway Village Fire District Process Flow Diagram

Appendix A - Conway Village Fire District WWTF – DMR Effluent Reporting (2008-2009)

Date	Flow (MGD)	BOD ₅ (mg/l)			BOD ₅ (lbs/day)	TSS (mg/l)			TSS (lbs/day)	pH (SU)		Total Coliform (cfu/100 ml)			Total Chlorine Residual (mg/l)
		Avg. Monthly	Avg. Monthly	Avg. Weekly		Max. Daily	Avg. Monthly	Avg. Monthly		Avg. Weekly	Max. Daily	Minimum	Maximum	Avg. Monthly	
Existing Limits	Report	25	40	45	104	25	40	45	104	6.5	8	240	240	240	Report
Jan-08	0.197	11.0	14.0	14.0	18.20	12.5	15.0	15.0	20.4	7.74	7.97	79.5	111.0	111.0	0.65
Feb-08	0.210	12.0	13.0	13.0	22.80	8.0	10.0	10.0	15.6	7.54	7.83	98.3	136.0	136.0	0.67
Mar-08	0.294	11.5	15.0	15.0	27.20	14.5	17.0	17.0	35.9	7.63	7.85	121.0	141.0	141.0	0.89
Apr-08	0.505	16.0	19.0	19.0	73.20	12.0	13.0	13.0	55.4	7.45	7.70	98.2	134.0	134.0	0.64
May-08	0.378	18.5	24.0	24.0	63.60	13.0	16.0	16.0	40.2	7.29	7.58	46.3	51.0	51.0	0.60
Jun-08	0.244	18.5	20.0	20.0	40.00	12.0	14.0	14.0	25.9	6.50	7.34	126.0	137.0	137.0	0.38
Jul-08	0.251	19.5	21.0	21.0	37.20	8.5	11.0	11.0	16.0	6.54	7.99	136.0	153.0	153.0	0.29
Aug-08	0.347	22.0	25.0	25.0	79.00	10.5	13.0	13.0	38.8	6.65	7.75	131.0	148.0	148.0	0.33
Sep-08	0.261	14.0	15.0	15.0	26.00	7.0	9.0	9.0	12.8	6.89	7.18	142.0	184.0	184.0	0.25
Oct-08	0.246	12.0	13.0	13.0	23.00	7.5	9.0	9.0	14.0	7.02	7.23	134.7	150.0	150.0	0.34
Nov-08	0.268	11.5	15.0	15.0	23.50	8.0	11.0	11.0	32.0	7.31	7.84	117.4	155.0	155.0	0.38
Dec-08	0.337	8.5	11.0	11.0	28.10	7.0	9.0	9.0	22.8	7.55	7.71	90.8	113.0	113.0	0.46
Jan-09	0.234	8.5	9.0	9.0	18.80	8.0	9.0	9.0	17.3	7.10	7.59	113.1	128.0	128.0	0.80
Feb-09	0.184	9.5	10.0	10.0	14.80	8.5	12.0	12.0	13.3	7.43	7.67	178.2	188.0	188.0	0.69
Mar-09	0.292	10.0	11.0	11.0	20.30	6.5	8.0	8.0	12.7	7.50	7.75	169.8	212.0	212.0	0.66
Apr-09	0.480	12.5	13.0	13.0	45.10	5.5	6.0	6.0	19.8	7.30	7.67	117.0	156.0	156.0	***
May-09	0.285	13.5	15.0	15.0	31.20	7.5	11.0	11.0	17.9	7.11	7.36	153.0	189.0	189.0	0.50
Jun-09	0.314	12.5	15.0	15.0	25.70	8.0	8.0	8.0	16.8	7.13	7.28	179.9	195.0	195.0	0.45

Date	Flow (MGD)	BOD ₅ (mg/l)			BOD ₅ (lbs/day)	TSS (mg/l)			TSS (lbs/day)	pH (SU)		Total Coliform (cfu/100 ml)			Total Chlorine Residual (mg/l)
		Avg. Monthly	Avg. Monthly	Avg. Weekly		Max. Daily	Avg. Monthly	Avg. Monthly		Avg. Weekly	Max. Daily	Minimum	Maximum	Avg. Monthly	
Existing Limits	Report	25	40	45	104	25	40	45	104	6.5	8	240	240	240	Report
Jul-09	0.406	15.5	17.0	17.0	49.00	5.5	6.0	6.0	17.4	7.03	7.16	172.3	189.0	189.0	0.39
Aug-09	0.333	12.5	13.0	13.0	33.00	8.5	9.0	9.0	22.5	6.89	7.15	117.8	124.0	124.0	0.23
Sep-09	0.221	11.0	14.0	14.0	21.40	8.0	10.0	10.0	15.6	6.61	6.91	123.4	162.0	162.0	0.16
Oct-09	0.233	10.5	15.0	15.0	16.90	9.5	11.0	11.0	15.1	6.89	7.22	263.6	3000.0	3000.0	0.36
Nov-09	0.263	10.5	12.0	12.0	19.60	10.5	15.0	15.0	18.4	7.26	7.57	139.0	168.0	168.0	0.63
Dec-09	0.302	7.0	8.0	8.0	15.60	9.0	10.0	10.0	21.2	7.42	7.61	109.9	142.0	142.0	0.57
Min	0.2	7.0	8.0	8.0	14.8	5.5	6.0	6.0	12.7	6.5	6.9	46.3	51.0	51.0	0.80
Max	0.5	22.0	25.0	25.0	79.0	14.5	17.0	17.0	55.4	7.7	8.0	263.6	3,000.0	3,000.0	0.69
Average	0.3	12.9	14.9	14.9	32.2	9.0	10.9	10.9	22.4	7.2	7.5	131.6	269.4	269.4	0.66

Text Violation

*** Not reported on DMR.

Appendix B - Mass Limits, 7Q10 Flow and Dilution Factor Calculations

1. CALCULATION OF MASS LIMITS

Maximum allowable loads for average monthly, average weekly, and maximum daily BOD5 and TSS are based on the following equation:

$$L = 8.345 * Q * C$$

Where:

L = Maximum allowable load, in lbs/day, rounded to the nearest 1 lbs/day

C = Maximum allowable effluent concentration (concentration limit)

Q = Treatment plant's design flow, in MGD

8.345 = Factor to convert effluent concentration, in mg/l, and plant's design flow, in MGD, to lbs/day

$$\text{Average Monthly Mass Limit (lbs/day)} = 25 \text{ mg/l} * 0.36 \text{ MGD} * 8.34 = 75 \text{ lbs/day}$$

$$\text{Average Weekly Mass Limit (lbs/day)} = 40 \text{ mg/l} * 0.36 \text{ MGD} * 8.34 = 120 \text{ lbs/day}$$

$$\text{Maximum Daily Mass Limit (lbs/day)} = 45 \text{ mg/l} * 0.36 \text{ MGD} * 8.34 = 135 \text{ lbs/day}$$

2. DERIVATION OF 7Q10 FLOW AT OUTFALL 001 AND DILUTION FACTOR CALCULATION

DERIVATION OF 7Q10 FLOW AT OUTFALL 001

The nearest United States Geological Survey (USGS) flow gage to the Conway Village Fire District WWTF is located approximately 1 mile downstream in the Saco River in Conway, New Hampshire (USGS Gage No. 01064500). The entire drainage area contributing flow to the Conway gage is 385 square miles (mi²).

The 7Q10 flow of the Saco River at the Conway Village Fire District WWTF discharge outfall was determined with DFlow 3.1 Software, with a data period of 107 years (1903-2010). The 7Q10 was estimated at 95.9 cubic feet per second, or 62 MGD.

3. DILUTION FACTOR CALCULATION

$$\text{Dilution Factor} = \frac{(Q_{\text{CVFD WWTF}})}{Q_{\text{DF}} * 1.547 \text{ cfs/MGD}} * 0.9$$

Where:

$Q_{CVFD\ WWTP}$ = Estimated 7Q10 flow at the CVFD WWTP, in cfs

Q_{DF} = Design flow of the facility, in MGD

1.547 cfs/MGD = Factor to convert MGD to cfs

0.9 = Factor to reserve 10% of the river's assimilative reserve capacity

$$\text{Dilution Factor} = \frac{(95.9 \text{ cfs}) \times 0.9}{(0.36 \text{ MGD} \times 1.547 \text{ MGD/cfs})} = 154.9 \sim \mathbf{155}$$