

NSRWA

RECEIVED
U.S. E.P.A.

2006 MAR -1 PM 1:33

*Samantha Woods
Executive Director*

ENVIR. APPEALS BOARD

February 27, 2006

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Boards
Colorado Building
1341 G Street, N.W., Suite 600
Washington D.C. 20005

RE: NPDES Permit No. MA0101923
Petition for Review

Dear Clerk of the Board:

Enclosed herewith please find the original and five copies of a Petition for Review and 3 copies of Exhibits for the subject NPDES permit.

Sincerely,

Samantha Woods
Executive Director

RECEIVED
U.S. E.P.A.

2006 MAR -1 PM 1:33

ENVIR. APPEALS BOARD

**BEFORE THE
ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In the Matter of:

Rockland Wastewater Treatment Plant

NPDES Permit No. MA0101923

PETITION FOR REVIEW

FROM

The North and South Rivers Watershed Association, Inc.

P.O. Box 43

Norwell MA 02061

Tel:781-659-8168

FAX:781-659-7915

Dated: February 28, 2006

PETITION FOR REVIEW

Pursuant to 40 CFR § 124.19, North & South Rivers Watershed Association ("Petitioners") submit to the Environmental Appeals Board (the "Board") this Petition for Review, to review or otherwise contest the January, 26 2006 final permit decision of the United States Environmental Protection Agency (the "EPA") to issue a permit to the Town of Rockland (the "Town" or the "Permittee") for a five year renewal for a National Pollutant Discharge Elimination System Permit issued jointly by the EPA pursuant to the Federal Clean Water Act, 33 U.S.C. § 1251 et seq. (the "CWA"), and the Massachusetts Department of Environmental Protection (the "DEP") under the Massachusetts Clean Waters Act, M.G.L. c. 21, § 26 et seq., (the "Act"), Permit No. MA0101923 (the "Permit").

Any permit issued by EPA and DEP to the Permittee must provide for compliance with the applicable requirements of the CWA, the Act and regulations thereunder, 40 CFR §122.4(a); 314 CMR § 3.07(1). Any such permit issued by EPA and DEP must also ensure compliance with the applicable water quality requirements of all affected states. 40 CFR §122.4(d); 314 CMR 3.07(4). Petitioners assert there are certain conditions included in the Permit, and certain conditions omitted from the Permit, based on "a finding of fact or conclusion of law which is clearly erroneous" or on "an exercise of discretion or an important policy consideration which the [Board] should, in its discretion, review". 40 CFR § 124.19(a).

The Petitioners seek review of certain Permit conditions on the grounds that these conditions are based on erroneous findings of fact or conclusions of law (a) whether the

conditions of the Permit and Certification adequately conform to the Massachusetts water quality requirements, specifically, antieutrophication, and discharges which violate permit requirements due to excessive, ongoing, and unresolved inflow and infiltration problems. (b) Whether the conditions of the Permit and Certification adequately ensure compliance with the CWA, the Act and regulations promulgated thereunder, and (c) whether the Permit contains and the Certification requires adequate control mechanisms necessary to meet the conditions of the Permit that prohibit the Permittee from causing violations of the water quality standards in the Receiving Waters.

This appeal addresses the common-sense proposition that a Permit is meaningless if the legal conditions for the grant of the Permit need not be met as soon as the Permit is issued or, at the very least, as soon as possible, within the term of the Permit.

Unfortunately, EPA Region 1 has issued this Permit to the Town of Rockland that will discharge pollutants into French Stream, the receiving water, lacking such constraints. By law, this Permit must regulate and reduce discharge of pollutants that are causing violations of water quality standards in French Stream. Rather than issue a Permit which allows French Stream to meet its water quality standard upon issuance of the Permit, EPA Region 1 has applied compliance schedules and monitoring requirements in hopes of meeting water quality standards at some undetermined time in the future. This is senseless, from any practical, common-sense point of view. Furthermore, there is no legal basis for EPA Region 1 to act in such a manner.

DESCRIPTION OF PETITIONERS

The North and South Rivers Watershed Association, Inc. (NSRWA) is a nonprofit watershed organization located on the South Shore of Massachusetts. The NSRWA was founded in 1970 and has over 1400 members. The mission of the NSRWA is to preserve, restore, maintain and conserve in their natural state, the waters and related natural resources within the watershed. Our goals are to: Protect the watershed and promote responsible growth by working in partnerships to preserve open space, scenic vistas and sensitive natural resources; educate and encourage stewardship of the watershed through public education, outreach and recreation programs; and restore the water quality of the rivers by identifying and correcting adverse impacts. More information about the organization can be found at www.nsrwa.org.

The NSRWA and its members are aggrieved by the Permit because the Permit directly conflicts with our goals to restore the water quality of the rivers in our watershed. As a direct result of the discharge of the Rockland Wastewater Treatment Plant, French Stream, which is a tributary to the North River, will continue to not meet its water quality standards and continue to be assessed and listed as impaired water. The NSRWA qualifies for representational standing, because it is an organization dedicated to this river and adequately represents the interests of its members. In this capacity, the NSRWA provided comments to the EPA and MADEP on July 7, 2005 (NSRWA Comment Letter, Exhibit A) enumerating several concerns about the Permit and its ability to allow French Stream to meet its designated uses.

Receiving Waters and Facility Background

French Stream (Segment MA94-03) headwaters stem from the southeast side of the former Weymouth Naval Air Station, travels through Rockland, through Studleys Pond to the confluence with the Drinkwater River in Hanover before entering Forge Pond and eventually flowing into the North River at the Hanover/Pembroke border. This segment length is 6.1 miles and classified as a Class B, Warm Water Fishery. Class B waters are designated as a habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. The watershed is relatively small, 8.7 square miles in a relatively flat coastal plain. Land use estimates (top three) for the watershed:

Forest..... 39%

Residential..... 32%

Open Land..... 10%

French Stream is listed on the 2002 Integrated List of Waters in Category 5, an impaired waterway. This segment was impaired due to pathogens, unknown toxicity, nutrients and organic enrichment/low DO. Therefore, a TMDL is required (MassDEP 2001, Exhibit B).

French Stream's 7Q10 flow is estimated to be 0.04 CFS (EPA Fact Sheet Permit #MA0101923, pg. 5, Exhibit C).

The Rockland Wastewater Treatment Plant is an advanced secondary wastewater treatment plant with a design flow of 2.5 mgd and seasonal phosphorus removal and nitrification. Chlorination (with dechlorination) provides disinfection. The effluent is reaerated by passing over a cascade and then flows to a 700 foot man-made channel which in turn flows into the French Stream.

The Use Assessment for Aquatic Life (MassDEP 2001, Exhibit B) states that “A total of 22 whole effluent toxicity tests were conducted on the Rockland WWTP effluent (outfall #001) between September 1999 and June 2004 using *C.dubia*. The LC₅₀'s ranged from 36.6 to 100% effluent. **Acute toxicity was detected in six tests of the 22 tests with LC₅₀'s ranging from 36.6 to 73.6% effluent. Of the 18 valid chronic tests, the C-NOEC's ranged from 12.5 to 100% effluent and 10 of the tests (including the six acutely toxic events) had C-NOEC results <88% effluent**“(Emphasis added).

The data from this report shows that the effluent exhibits acute (27% of the time) and chronic toxicity (55% of the time). Note that some of the toxicity exceedances are with diluted effluent. In French Stream, during seasonal low flows in addition to 7Q10, the stream is effluent dominated more than half the year and this effluent is contributing to the streams inability to meet its water quality designation

Additional data were summarized in the same report (MassDEP 2001, Exhibit B) on in-stream Dissolved Oxygen and % Saturation. “The DO in French Stream upstream of the Rockland WWTP discharge (stations FS103 and FS102) ranged from 6.1 to 8.9 mg/L with saturations between 72 and 91%. These data represent both mid day and pre-dawn measurements. The DO in the river downstream from the Rockland WWTP discharge (station FS101) ranged from 5.4 to 7.4 mg/L with saturations between 62 to 86%. **These data however do not represent pre-dawn conditions**”(Emphasis Added). These data indicate less dissolved oxygen and % saturation downstream of the discharge. These data did not sample during the worst case scenario for these parameters (pre-dawn) thus it is likely pre-dawn DO concentrations may be below the MA water quality standard for Class B waters of 5 mg/l . Specific conductivity was almost twice as

high downstream of the discharge when compared with upstream measurements. The concentration of total phosphorus showed similar trends with upstream in-stream total phosphorus ranging from 0.024 to 0.10 mg/L and concentrations downstream of the WWTP discharge ranging from 0.10 to 1.3 mg/L. The concentration of total phosphorus collected in the unnamed tributary receiving the Rockland WWTP discharge ranged from 0.15 to 0.25 mg/L. The phosphorus levels downstream of the WWTP are consistently higher than the recommended concentrations found in the EPA's ecoregional criteria and those found in the EPA's Quality Criteria for Water 1986 (the "Gold Book").

The MassDEP 2001 report concludes "While the *in situ* water quality data did not indicate impairment, elevated levels of total phosphorus were detected in the river downstream from the Rockland WWTP discharge and the presence of acute and chronic toxicity in the Rockland WWTP discharge is also of concern." and goes on to note that "chlorine/septic odors were occasionally noted by survey crews at the two stations downstream from the discharge."

The report concludes "The *Primary Contact Recreational Use* is assessed as impaired for French Stream because of elevated fecal coliform bacteria counts. The *Secondary Contact Recreational* and *Aesthetics* uses are assessed as support but are identified with an alert status because of the occasional chlorine/septic odors in the river downstream from the Rockland WWTP discharge.

Findings, Conclusions or Conditions Objected To or Believed To Be in Error

1. Phosphorus

On Page 14, Section F. of the Permit under Compliance Schedules (Exhibit D), EPA states “No later than five years from the effective date of this permit, the permittee shall achieve compliance with the final cold weather limits for ammonia as nitrogen (October 1 through March 31 and April 1 through May 31) and summer total phosphorus limit (May 1- September 30). During the interim period, monitoring and reporting of total phosphorus and ammonia as nitrogen shall be performed in accordance with the requirements in Part A.1.”

EPA states in the next paragraph, “During the interim period, the permittee shall achieve an interim average monthly total phosphorus limit of 1 mg/L during April 1- October 31, shall further optimize the removal of total phosphorus using existing equipment pursuant to requirements 1 and 2 below, and will be subject to an earlier compliance date for achieving the summer total phosphorus limit if it is determined to be feasible pursuant to the requirements 1 and 2 below.”

For this Permit EPA has established a phosphorus limit of 0.2 mg/L for the period April 1-October 31. Because EPA does not know if the permittee can achieve the limit of 0.2 mg/L for phosphorus EPA has established an interim phosphorus limit of 1 mg/L for the period April 1-October 31. EPA has also established in this permit a final cold weather limit for ammonia as nitrogen and defers the meeting of this and the phosphorus limit to a compliance schedule which allows the Permittee not to achieve compliance for the five year duration of the Permit.

If EPA has determined that a phosphorus limit of 0.2 mg/L will be the minimum required for French Stream to meet its water quality standard, EPA cannot put that limit in the Permit and allow the Permittee the length of the Permit cycle or longer to meet that limit. Likewise with the final cold weather limit for ammonia as nitrogen, EPA cannot establish the limit and not require the Permittee to meet it. Furthermore EPA Region 1 has failed to demonstrate that the 0.2 mg/L will be sufficient for French Stream to meet its water quality standard.

Not only does EPA not provide evidence its proposed effluent limitations will allow French Stream to meet its minimum statutory water quality standards, EPA guesses at what might work, and then allows for a five year compliance schedule to arrive at what might work.

The Petitioners are skeptical at best of EPA holding the Permittee to the terms of this five year compliance schedule. The Permittee has been operating its Plant under an administrative consent order since July of 1995, today in February of 2006, French Stream is no closer to achieving its water quality standard. To allow the Permittee the full five year permit cycle to meet the limits of the Permit is to invite further permit violations, which will assure additional insults to the already impaired waters of French Stream.

The Permit also fails to place total mass loading limits in the permit. The Facility exceeded its monthly flow limitations for a full 8 months in 2005 (Exhibit E). The lack of loading limits in the Permit ignores the impact of loading to the stream and downstream impoundments, such as Forge Pond. Given the excessive flows due to I/I

from this Facility, these loads may be excessive and contribute to the stream's impairment. As noted in the fact sheet – the 7Q10 for French Stream is 0.04 cfs. It is important to note that there is essentially no dilution of this effluent during 7Q10 events.

In its Response to Public Comments, response #9 (Exhibit F) EPA states the following “Also you are correct in pointing out that phosphorus limits in this permit may not ultimately be stringent enough to achieve Massachusetts water quality standards. This was stated in the fact sheet, but it was decided that in the absence of numerical criteria, a TMDL, or recent water quality information, that the state’s technology-based “highest and best” treatment limit would be applied”

Water quality based effluent limitations require otherwise as pointed out by EPA in their response to comments during the public comment period on the Hudson Wastewater Treatment Facility “The establishment of water quality based limits, unlike technology based limits, are not based on treatment capabilities.” (Assabet River NPDES Permits-Response to Comments, page #4 response #6, Exhibit G) US EPA further states on Page # 7 Comment # 3, “In addition to technology based controls, permits must contain any more stringent limitations for particular pollutants that are necessary to meet MAWQS. A water quality based effluent limitation must be calculated at levels to ensure achievement of MAWQS, regardless of the availability or effectiveness of technologies or the cost dischargers would incur to meet those limits (Assabet River NPDES Permits-Response to Comments, page #7 response #3, Exhibit G).” EPA further states on Page # 18, 19 Response # 12 last sentence, “Finally, The Agencies note that permits must include limits as stringent as necessary to meet Massachusetts WQS irrespective of technological feasibility.” (Assabet River NPDES Permits-Response to Comments, page

#19 response #12 Exhibit G) Furthermore, 40 C.F.R. § 122.4(d) prohibits permit issuance “when imposition of conditions cannot *ensure* compliance with the applicable water quality requirements.”

Therefore the Petitioners contend that the limits put forth in this permit regarding phosphorus and final cold weather limits for ammonia as nitrogen fail to satisfy the regulatory requirements of 40 C.F.R. § 122.4(d), which prohibits issuing a permit when permit conditions cannot ensure compliance with applicable water quality standards.

2. Inflow & Infiltration

Inflow and Infiltration is problematic at the Plant, and has been since the early 1990’s. In July of 1995 the Permittee was issued an Administrative Consent Order (ACO) by regulatory authorities which required a town-wide I/I reduction plan. The overall purpose of this plan was to control and reduce the unnecessary flows entering the Plant (Administrative Consent Order, 1995, pg. 11, 5.10 Exhibit H). On August 31, 2004 a Project Evaluation Form (PEF) was put forward to initiate a Comprehensive Wastewater Management Plan (CWMP) for the Rockland Plant (Response to Comments, Exhibit F).

In Part III, page 1-1 of the PEF the following is stated, “The Rockland WWTF is currently experiencing the following concerns:

- The existing WWTF is aging and does not have the hydraulic capacity to accept peak flow,
- Current influent BOD loadings exceed the design average loading,
- The existing collection system has excessive infiltration and inflow, and

- The community is in a growth mode with many new developments proposed.

In the ten year time span between the 1995 Administrative Consent Order and the 2004 Project Evaluation Form for the Rockland CWMP, little if any I/I reduction has been achieved. Given this fact the petitioners contend that EPA Region 1 has failed to satisfy the regulatory requirements of 40 C.F.R. § 122.4(d), which prohibits issuing a permit when permit conditions cannot ensure compliance with applicable water quality standards. As pointed out above, despite more than a decade of studies and plans I/I continues to plague the Rockland Plant causing violations of the Permittee's discharge permit. Further evidence of the ongoing I/I problem is enumerated as follows:

In a Letter dated October 25, 1996 (Exhibit I) the company in charge of operating the plant, PSG, describes a heavy rainfall that resulted in pumping of untreated wastewater to the discharge at the outfall reparation steps and raising the facility's chlorination prior to discharge.

In the Response to Comments Rockland WWTP Pg 1 Background Information (Exhibit F) a high flow management plan is described that "involves storing flow in off-line tankage and returning this flow for full secondary treatment after the high flow event. On two occasions during the past four and one half years, the quantity of flow has exceeded the storage capacity, resulting in the discharge of partially treated wastewater to the plant outfall, where it combined with fully treated effluent and was discharged."

The 2004 PEF Section C – Environmental Criteria pg. 1-4 (Response to Comments, Exhibit F) also notes that "From an environmental standpoint, the high flow management plan can result in the discharge of partially treated wastewater to the French

Stream. This obviously would have short term environmental impacts on the receiving water including exceedances of the NPDES permit limits, aquatic toxicity, excessive nutrient loadings, depletion of dissolved oxygen, and bacterial exceedances.” The PEF also states “There have been two periods since January 2000 when influent flow has exceeded 80% of the design flow (2.0 mgd) for 90 consecutive days, and two other periods that have approached this criterion as presented in Appendix C.”

In 2005, Monthly Daily Average Total Flows in the plant exceeded their permit limitation (2.5 MGD) 8 months out of 12 (Exhibit E). The Monthly Discharge Monitoring report for March 2005 (Exhibit J) describes yet another violation where the facility was overwhelmed in a rain event and forced to discharge partially treated effluent to French Stream and consequently violations of the permit for Flow, Total Residual Chlorine Daily Maximum (57 time the allowed TRC in the permit), BOD Daily Maximum and BOD lbs/day and TSS. Instead of reducing I/I it would appear it is at least as bad as it was in 1995 when the consent order was first administered, if not worse, and results in continuing and more frequent violations of their permit.

In 2004, the plant agreed to accept the hook-up of a large out-of-town customer (over 1,400 employees), in Hingham, that will add significant sewage to an already overwhelmed plant. A sum of approximately \$600,000 was provided to the facility to hook up and provide funding to improving the infrastructure (pers. comm. with sewer superintendent John F. Loughlin, February 22, 2006). However, the sewer commission has no I/I bank and it is not apparent whether the funding provided will truly offset the additional sewage to the facility and decrease I/I to the system.

EPA Region 1 appears to be attempting to divide its responsibilities in regard to

long running permit violations resulting from the ongoing I/I problems at the Rockland Plant. EPA Region 1 dedicates nearly two pages of the permit acknowledging and describing I/I related violations and problems (NPDES Permit 2006, p#.11 thru 12, Exhibit D) then prescribes plans to be followed and reports to be filed regarding these violations. The petitioners contend that EPA Region 1 has failed to satisfy the regulatory requirements of 40 C.F.R. § 122.4(d), which prohibits issuing a permit when permit conditions cannot ensure compliance with applicable water quality standards.

In response to NSRWA comments regarding I/I EPA states, “The EPA compliance program and MassDEP facility inspectors are closely tracking Rockland’s ongoing high flow and I/I reduction plans. Should additional compliance schedules become necessary, they will be issued in the form of an enforcement order” (P#3. Response 1, Response to Public Comments NPDES # MA0101923, Exhibit F). The plant is already operating under an enforcement order which DEP issued in 1995 and which has resulted in little to no progress on this issue and there is already a record of long-standing frequent violations.

An enforcement order is a discretionary action which may be taken in the future, however it does not insure compliance. It is the responsibility of EPA to ensure that this permit, as written, will allow French Stream to meet its water quality standard. If the Permittee through this permit is only required to monitor and report gross discharges of partially treated effluent, the stream will not meet its water quality standard. Allowing the discharger to phase in compliance over time would implicitly sanction pollutant discharges that violate applicable state water quality standards.

It appears in this case that EPA permit writers are trying to side step the thorny

issue of I/I related permit violations by deferring their authority to the compliance division. The permit writers address and provide ineffective remedies for the problems in the permit, indicating it is within the scope of their authority to address I/I as part of the permitting process. If addressing I/I related violations is within the scope of this permit, then this permit must insure they do not occur, otherwise this permit is in violation of 40 C.F.R. § 122.4(d) and does not meet the conditions of Part I.A.I. line a. of this permit “The discharge shall not cause a violation of the water quality standards of the receiving waters”.

Exhibits:

Exhibit A: NSRWA Comment letter on Draft Permit MA0101923

Exhibit B: South Shore Coastal Watersheds 2001 Water Quality Assessment Report (Draft), Massachusetts Department of Environmental Protection.

Exhibit C: EPA Fact Sheet Permit #MA0101923

Exhibit D: NPDES Permit No. MA0101923, January 26, 2006

Exhibit E: Summary of Monthly Daily Average Total Flows, January, 2005 – December 2005.

Exhibit F: Response to Public Comments Rockland Wastewater Treatment Plant NPDES No. MA0101923

Exhibit G: Assabet River NPDES Permits-Response to Comments

Exhibit H: Copy of the Administrative Consent Order for the Town of Rockland effective July 11, 1995.

Exhibit I: Letter dated October 25, 1996 to DEP from PSG re: October Rain Event –
High Flows.

Exhibit J: Monthly Discharge Monitoring Report for March, 2005

Exhibit A: NSRWA Comment letter on Draft Permit MA0101923



*Samantha Woods
Executive Director*

July 7, 2005

Doug Corb
U.S. EPA
MA Office of Ecosystem Protection
1 Congress Street, Suite 1100-CMP
Boston, MA 02114-2023

Paul Hogan
Department of Environmental Protection
Division of Watershed Management
627 Main Street, 2nd Floor
Worcester, MA 01608

Public Notice MA-030-05
Permit Numbers: MA0101923- Rockland Wastewater Treatment Plant

Dear Mr. Corb:

The North and South Rivers Watershed Association (NSRWA) staff have reviewed the draft NPDES permit for the Rockland Wastewater Treatment Plant (WWTP) which discharges to French Stream, this stream is a headwater tributary to the North River watershed. French stream is listed as an impaired and listed for unknown toxicity, nutrients, organic enrichment/low DO, and pathogens.

There have been important additions to the draft permit, which will provide increased protection to the receiving waters of French Stream. However, the NSRWA is concerned about several elements of the Rockland WWTP draft discharge permit. Our concerns are enumerated below:

Flow/Dilution

- The facility has a design flow of 2.5 MGD, and a peak design flow of 6 MGD. Actual peak flows have been noted as high as 12 MGD and average annual flows also are in excess of the facilities design flow. Monthly Discharge Monitoring reports indicate that there is significant Infiltration and Inflow, which contributes to the plant exceeding its design flows. The draft discharge permit requires that an Infiltration and Inflow plan be developed. We request that the new discharge permit require the I/I plan include a timeline with reasonable milestones for decreasing Infiltration and Inflow to 10%. Clearly, there is a need to address the I/I as partially treated sewage is being directed to the outfall during times of high flows.

BOD and TSS limits

- The new discharge permit requires May 1 – September 30th BOD and TSS limits. The limits should be extended to include the entire growing season, April 1st through October 31st.

Nutrients

- The new phosphorus limit of 0.2 mg/L is an improvement however it is based on technology limits not on the carrying capacity of the stream itself. Because this stream is listed as impaired for nutrients a TMDL will be required. In order to assist in understanding what the true capacity of the stream is, we request that monitoring up and downstream of the point source be required as part of the permit in order to assist in collection of information that will be useful in determining the TMDL. In addition, total and soluble nitrogen and dissolved oxygen should be assessed instream, both upstream and downstream of the outfall to aid in determining the effluent impact on eutrophication within the stream. We request that this instream monitoring be added to the permit. As with the BOD and TSS limits, we request that the 0.2 mg/L seasonal limits for phosphorus, ammonia, and dissolved oxygen be extended to include the entire growing season from April through October.

Copper

- This facility has had elevated copper concentrations in its effluent and has been under an Administrative Consent Order since March of 2002. The draft discharge permit has established new copper limitations for this discharge. Copper can be toxic to aquatic organisms in relatively low concentrations. We would ask that there be an assessment of the feasibility of reducing copper from the influent water. The most common cause of copper in wastewater is due to the pH of drinking water corroding copper pipes in homes. If the pH can be adjusted at the source, there will be less risk of elevated copper concentrations in the wastewater stream.

Thank you for the opportunity to comment on the draft discharge permit. Please feel free to call us at 781-659-8168 should you have any questions about our comments.

Sincerely,



Samantha Woods
Executive Director

Exhibit B: South Shore Coastal Watersheds 2001 Water Quality Assessment Report
(Draft), Massachusetts Department of Environmental Protection.

SOUTH SHORE COASTAL WATERSHEDS 2001 WATER QUALITY ASSESSMENT REPORT

Picture to be inserted

**COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
STEPHEN R. PRITCHARD, SECRETARY
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
ROBERT W. GOLLEDGE, JR., COMMISSIONER
BUREAU OF RESOURCE PROTECTION
GLENN HAAS, ACTING ASSISTANT COMMISSIONER
DIVISION OF WATERSHED MANAGEMENT**



FRENCH STREAM (SEGMENT MA94-03)

Location: From the headwaters on the southeast side of the South Weymouth Naval Air Station, Rockland, through Studleys Pond to the confluence with Drinkwater River, Hanover.

Segment Length: 6.1 miles

Classification: Class B, Warm Water Fishery.

Land-use estimates (top 3, excluding water) for the 8.7 mi² subwatershed (map inset, gray shaded area):

- Forest39%
- Residential.....32%
- Open Land.....10%

French Stream is listed on the 2002 Integrated List of Waters in Category 5. This segment was impaired due to pathogens, unknown toxicity, nutrients and organic enrichment/low DO. Therefore, a TMDL is required (MassDEP 2003a).

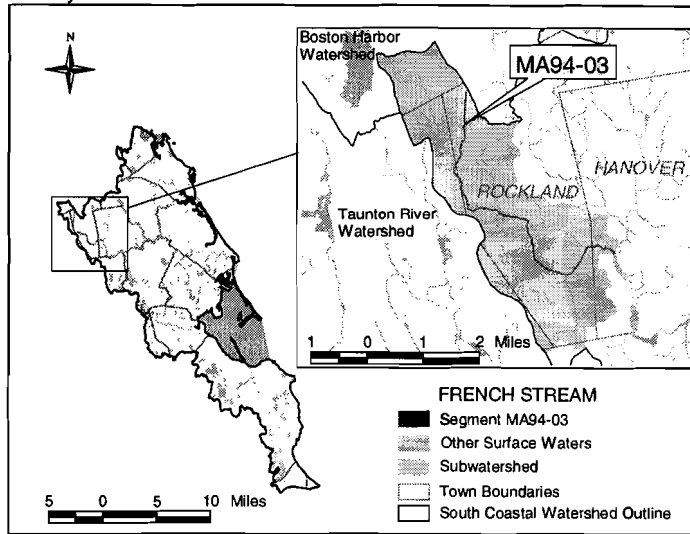
There is one site awaiting a NPL decision located in this subwatershed. The site description was excerpted from the EPA website (EPA 2005):

The South Weymouth Naval Air Station (SOWEY NAS) was administratively closed on September 30, 1997 under the Defense Base Closure and Realignment Act of 1990 (BRAC), Public Law 101-510, as part of the BRAC Commission's 1995 Base Closure List (BRAC IV). The facility was operationally closed on September 30, 1996. Activities performed at the site included aircraft maintenance, refueling, personnel training and housing, and administrative support services. In addition, the U.S. Coast Guard operates a buoy maintenance depot on the property through an agreement with the Navy. The wastes generated by the facility were reportedly disposed of in three on-site landfills. The West Gate landfill operated from 1969 to 1972, and the Rubble Disposal area and the Small Landfill operated from 1972 until the mid-1980s. Flammable liquid wastes reportedly were burned in the on-site fire training area, and small amounts of waste battery acid, possibly containing lead, may have been disposed of in a tile leachfield. At the Coast Guard's buoy depot, lead-based paint from buoys was reportedly sandblasted from 1972 until 1986. A Phase I Remedial Investigation was completed in July 1998. Field work for a Phase II RI was completed in June 2000. The Navy has completed the Final Phase II Remedial Investigation (RI) reports for all seven CERCLA sites which include the Small Landfill, Rubble Disposal Area, West gate Landfill, Fire Fighting Training Area, Tile Leach Field, Sewage Treatment Area, and Abandoned Bladder Tank Fuel Storage Area. [NOTE: Two of the RI sites are located in the Old Swamp River drainage area – the Rubble Disposal Area and the Small Landfill. Four RI sites are located along an unnamed tributary to French Stream. From upstream to downstream these sites include the Sewage Treatment Area, the Abandoned Bladder Tank Fuel Storage Area, the West Gate Landfill, and the Tile Leach Field. The remaining RI site, the Fire Fighting Training Area (FFTA), is located on French Stream. The Navy considers the FFTA to be adequately characterized based on an assessment of analytical data collected over the past decade and site-specific risk calculations (Tetra Tech 2001).]

Two additional sites, Building 81 and Building 82 were being investigated as petroleum sites under the Massachusetts Contingency Plan. In August, 2001, because chlorinated solvents were detected in soil and groundwater samples, both sites were transferred to CERCLA. An innovative technology (Fenton's reagent for chlorinated solvents) pilot study was unsuccessful at Building 81. The Navy completed draft Remedial Investigation Work Plans for both sites in September 2002.

AOC 108 was transferred from the Environmental Baseline Survey (EBS) program to the CERCLA program because chlorinated solvents were detected in groundwater samples. The Navy planned to submit a draft Remedial Investigation Work Plan in June 2005.

A Draft Final RI was completed by the United States Coast Guard (USCG) in December 2000 for the USCG



Buoy Depot as well as a draft FS in March 2001 and an Engineering Evaluation/Cost. The USCG completed the storm water system and was supposed to start the swale removal and restoration in mid-December 2004.

Within the last two years, The Village Center Plan has been developed by Lennar Partners, through a planning process with the communities of Abington, Rockland and Weymouth, the Tri-Town Development Corporation and local, regional, state and federal planning experts, agencies and elected officials, for redeveloping the former South Weymouth Naval Air Station. This mixed-use, smart growth re-use plan is a twelve-year plan for redeveloping the former South Weymouth Naval Air Station.

WMA WATER WITHDRAWAL SUMMARY (APPENDIX E, TABLE E5):

There are no WMA water withdrawals in this segment. However, there is one acre of land that is classified in the Land-Use theme as cranberry bog in this subwatershed (UMass Amherst 1999). For the purpose of this report, a conservative estimate of water use for this bog area is less than 0.01 MGD.

NPDES WASTEWATER DISCHARGE SUMMARY (APPENDIX E, TABLE E1):

The Town of Rockland is authorized (MA0101923 issued in August 1999) to discharge from the Rockland Wastewater Treatment Plant (WWTP) a flow of 2.5 MGD (average monthly) of treated sanitary and industrial wastewater via outfall #001 to the French Stream. This advanced activated sludge facility performs nitrification for seasonal ammonia-nitrogen reduction (May 1 to 31, 7.5 mg/l and June 1 to September 30, 1.5 mg/l) and total phosphorus reduction by chemical addition (May 1 to September 30, 1.5 mg/l). The ammonia-nitrogen concentrations in the effluent between September 1999 and June 2004 ranged from <0.05 to 11.00 mg/L (n=22)(TOXTD database). The pH (6.5 to 8.3 SU) of the effluent between September 1999 and June 2004 ranged from 6.8 to 7.8 SU (n=24)(TOXTD database). The Rockland WWTP uses sodium hypochlorite for disinfection. The TRC [0.0124 mg/L (average monthly) and 0.0214 mg/L (maximum daily) permit limits] measurements in the effluent between September 1999 and June 2004 were all <0.05 mg/L (n=24)(TOXTD database). The facility's whole effluent toxicity limits are $LC_{50} \geq 100$ and $C-NOEC \geq 88\%$ effluent using *Ceriodaphnia dubia*. Toxicity testing for this facility is required four times/year.

USE ASSESSMENT

AQUATIC LIFE

Habitat and Flow

MDFW and DWM noted that instream habitat quality in the upper reach of French Stream near North Avenue, Rockland was limited (the overall habitat assessment score was 94/200) (MA DFWELE 2001). None of the habitat parameters scored in the optimal category. Alteration was present in the form of channelization; both bank vegetative cover and riparian zone widths were only marginal, sediment deposition and embeddedness were noted and the somewhat limited channel flow status resulted in limited velocity/depth combinations and only occasional riffle habitat.

Downstream from Summer Street in Rockland, the character of French Stream changes from a riffle/run dominated system to a slow moving deeper flat water system as it meanders through a large wetland area. For a short distance upstream of its confluence with the Drinkwater River, French Stream returns to a riffle/run type habitat.

Biology

MDFW and DWM conducted backpack electrofishing at one station (#387) in French Stream, at North Avenue, in September 2001 (Richards 2003). Sampling at this station, yielded two species of fish, 16 American eel (*Anguilla rostrata*) and seven redbin pickerel (*Esox americanus americanus*). Both species are considered macrohabitat generalists. Redfin pickerel are moderately tolerant to water quality degradation but are considered by DWM biologists to be tolerant to habitat degradation. While the lack of fish species diversity in French Stream is consistent with the findings of some other coastal plain streams it is unclear whether this is a natural condition or the result of habitat and water quality degradation. The absence of fluvial or intolerant species should be noted. Although no RBP III analysis was conducted, a cursory evaluation of the benthic community in French Stream near North Avenue, Rockland (Station FRS-B) in May 2000 revealed low abundance and diversity (SaintOurs 2005).

Toxicity

Ambient

The Rockland WWTP staff collected French Stream water approximately 0.4 miles upstream of the WWTP's discharge at the Summer Street bridge for use as dilution water in the facility's whole effluent toxicity tests (Kotouch 2004). Survival of *C. dubia* exposed (7-day) to the river water between September 1999 and June of 2004 (n=22 tests) ranged from 80 to 100% with the exception of one test event (survival =60% in September 2002 test event). It should be noted however that when whole effluent toxicity testing of the Rockland WWTP discharge was also being tested with *Pimephales promelas*, survival of *P. promelas* was \leq 75% in 14 of the 23 tests conducted between March 1994 and June 2000 with survivals ranging from 18 to 73%.

Effluent

A total of 22 whole effluent toxicity tests were conducted on the Rockland WWTP effluent (outfall #001) between September 1999 and June 2004 using *C. dubia*. The LC₅₀'s ranged from 36.6 to 100% effluent. Acute toxicity was detected in six tests of the 22 tests with LC₅₀'s ranging from 36.6 to 73.6% effluent. Of the 18 valid chronic tests, the C-NOEC's ranged from 12.5 to 100% effluent and 10 of the tests (including the six acutely toxic events) had C-NOEC results <88% effluent.

Chemistry-water

DWM conducted water quality monitoring (DO and % saturation, temperature, pH, conductivity, alkalinity, hardness, chlorides, nitrate-nitrite nitrogen, ammonia nitrogen and/or total phosphorus) at the following four locations in French Stream between June and October 2001 (Appendix A, Tables A6 and A7 and Appendix C, Table C3).

at North Avenue crossing, Rockland (Station FS103)

at Summer Street crossing, Rockland (Station FS102)

approximately 300 feet downstream/northeast from Rockland WWTP discharge canal confluence, Rockland (Station FS101)

approximately 30 feet upstream of confluence with Drinkwater River, Hanover (Station FS104)

Additionally, one sample was collected by DWM and analyzed for nitrate-nitrite nitrogen, ammonia nitrogen, and total phosphorus from the unnamed tributary receiving the Rockland WWTP discharge (station FS105). These data are summarized below.

The Rockland WWTP staff collected French Stream water approximately 0.4 miles upstream of the WWTP's discharge at the Summer Street bridge for use as dilution water in the facility's whole effluent toxicity tests (Kotouch 2004). Test results ranging between September 1999 and June of 2004, maintained by DWM in the TOXTD database, are also summarized below.

DO and % saturation

The DO in French Stream upstream of the Rockland WWTP discharge (stations FS103 and FS102) ranged from 6.1 to 8.9 mg/L with saturations between 72 and 91%. These data represent both mid day and pre-dawn measurements. The DO in the river downstream from the Rockland WWTP discharge (station FS101) ranged from 5.4 to 7.4 mg/L with saturations between 62 to 86%. These data however do not represent pre-dawn conditions.

Temperature

While the maximum temperature of French Stream at the most upstream sampling location (station FS103) was only 18.0°C, higher temperatures (up to 27°C) were found further downstream (station FS102) which likely reflects the effect of the Studleys Pond impoundment.

pH, hardness, and alkalinity

The pH of French Stream measured by DWM ranged from 6.5 to 6.9 SU while pH of the stream at Summer Street reported in the Rockland toxicity test reports ranged from 6.6 to 7.6 SU (n=24) (TOXTD). Hardness and alkalinity of French Stream upstream of the Rockland WWTP discharge ranged from 31 to 46 mg/L and 13 to 22 mg/L, respectively. Alkalinity of the stream at Summer Street reported in the Rockland toxicity test reports ranged from 11 to 23 mg/L (n=22). Downstream from the discharge the hardness measured by DWM ranged from 60 to 97 mg/L while alkalinity ranged from 22 to 41 mg/L.

Specific conductivity

Specific conductivity of French Stream upstream of the Rockland WWTP discharge (stations FS103 and FS102) ranged from 183 to 282 $\mu\text{S}/\text{cm}$. Downstream from the discharge the conductivity was higher ranging from 356 to 578 $\mu\text{S}/\text{cm}$ (station FS101).

Suspended Solids

The suspended solids concentrations ranged from <1.0 to 16.0 mg/L (n=22) (TOXTD).

Ammonia-Nitrogen

With the exception of two samples (exclusive of qualified data), no detectable concentrations of ammonia-nitrogen were found in French Stream. The two samples with detectable levels of ammonia-nitrogen (0.06 and 0.08 mg/L) were collected downstream from the Rockland WWTP discharge (station FS101). The ammonia-nitrogen concentrations in the stream at Summer Street reported in the Rockland toxicity test reports ranged from <0.10 to 0.16 mg/L (n=22) (TOXTD).

Total Phosphorus

The concentration of total phosphorus in French Stream upstream of the Rockland WWTP discharge (stations FS103 and FS102) ranged from 0.024 to 0.10 mg/L (average concentration = 0.05 mg/L). The total phosphorus in the stream downstream from the Rockland WWTP discharge (station FS101) ranged from 0.10 to 1.3 mg/L (average concentration = 0.34 mg/L). Near the mouth of French Stream (Station FS104) the concentration of total phosphorus ranged from 0.076 to 0.084 mg/L. The concentration of total phosphorus collected in the unnamed tributary receiving the Rockland WWTP discharge (station FS105) ranged from 0.15 to 0.26 mg/L.

TRC

The total residual chlorine measurements were all <0.05 mg/L (n=24) (TOXTD).

Chemistry-sediment

Surficial sediment samples were collected in June/July 2004 at five locations in the upper reach of French Stream in the vicinity of Spruce Street in Rockland (near the South Weymouth Naval Air Station) as part of the Phase II Environmental Baseline Survey to assess potential impacts of solid waste (construction and demolition debris) to French Stream and its sediments (Stone & Webster 2004). These samples were all analyzed for acid volatile sulfide (AVS), simultaneously extracted metals (SEM), total organic compounds (TOC), polycyclic aromatic hydrocarbons (PAHs), grain size, and other target analytes and compounds. At the most upstream sampling point just upstream of Spruce Street (station SD03-301(0-0.5)) the surficial sediment was comprised primarily of fines (53.81%) and sand (45.19%) with a 46.1% solids content. Surficial sediments in French Stream as far as approximately 500' downstream from Spruce Street (stations SD03-302(0-0.5), SD03-303(0-0.5), and SD03-304(0-0.5)) were dominated by sand (>59%) and fines (ranging between 10.91 and 40.36%). These samples ranged from 50.2 to 73.3% solids. One sampling location (station SD03-305(0-0.5)) downstream from Spruce Street but just upstream from a culvert along the western side of French Stream was comprised primarily fines (62.98%) and sand (34.86%) and was comprised of 39.8% solids. The SEM/AVS ratios were all less than 1 (ratios less than 1 indicate the metals are not likely be toxic to aquatic organisms) with the exception of one sample where sulfides were below detection (SEM/AVS ratio = 1.12 for station SD03-303(0-0.5) (Stone & Webster 2004). Several analytes (primarily PAH contaminants in sediment sample from station SD03-303(0-0.5)) exceeded ecological benchmark values and corresponding site background data (Stone & Webster 2004).

The *Aquatic Life Use* for French Stream is assessed as impaired based primarily on best professional judgment. The instream habitat quality in the upper reach of the river was fairly poor (deposition and embeddedness were noted) and both the fish and benthic communities were observed to have low abundance and diversity. Although there has been good survival of *C. dubia* exposed to the river water, historically there was often poor survival of *P. promelas* although this test organism has not been utilized in recent whole effluent toxicity tests for the Rockland WWTP. While the *in situ* water quality data did not indicate impairment, elevated levels of total phosphorus were detected in the river downstream from the Rockland WWTP discharge and the presence of acute and chronic toxicity in the Rockland WWTP

discharge is also of concern.

PRIMARY CONTACT AND SECONDARY CONTACT RECREATION AND AESTHETICS

DWM conducted bacteria sampling (fecal coliform, E coli. and Enterococci) at three locations in French Stream between June and October 2001 (Appendix A, Table A7). The stations and fecal coliform bacteria data are summarized below.

- at North Avenue crossing, Rockland (Station FS103)
- at Summer Street crossing, Rockland (Station FS102)
- approximately 300 feet downstream/northeast from Rockland WWTP discharge canal confluence, Rockland (Station FS101)

All of the fecal coliform bacteria samples (excluding duplicate samples) analyzed during the primary contact recreational season (1 April to 15 October) (n=9) collected from the French Stream exceeded 200 cfu/100 mls (ranging from 230 to 2,000 cfu/100 mls). Six of the nine samples (67%) exceeded 400 cfu/100 mls. The geometric mean of all the fecal coliform bacteria data (excluding duplicate samples) was 403 cfu/100 mls (n=12 with counts ranging from 71 to 2,000 cfu/100 mls). Higher bacteria counts were associated with wet weather sampling conditions. It should also be noted that there is a cow pasture along the French Stream in the vicinity of the Rockland WWTP discharge. Cows in the pasture have direct access to the stream and discharge canal (MassDEP 2001a).

Field observations were made by DWM sampling staff during the surveys conducted in French Stream between June and October 2001. With the exception of isolated areas of trash/debris no objectionable conditions (odors, oils) were noted during any of the surveys upstream of the Rockland WWTP discharge (stations FS103 and FS102) (MassDEP 2001a and MA DFWELE 2001). Chlorine/septic odors were occasionally noted by survey crews at the two stations (FS101 and FS104) downstream from the discharge.

The *Primary Contact Recreational Use* is assessed as impaired for French Stream because of elevated fecal coliform bacteria counts. The *Secondary Contact Recreational* and *Aesthetics* uses are assessed as support but are identified with an alert status because of the occasional chlorine/septic odors in the river downstream from the Rockland WWTP discharge.

Exhibit C: EPA Fact Sheet Permit #MA0101923

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND
ONE CONGRESS STREET, SUITE 1100 (CPE)
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

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

NPDES PERMIT NO.: MA0101923

DATE OF PUBLIC NOTICE: June 9, 2005

NAME AND ADDRESS OF APPLICANT:

Board of Sewer Commissioners
P.O. Box 330
Rockland, MA 02370

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Rockland Wastewater Treatment Plant
South End of Concord Street
Rockland, MA 02370

RECEIVING WATER: French Stream
South Coastal Watershed (MA94-03)

CLASSIFICATION: B (warm water fishery)

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

The above named applicant has requested that the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection (DEP) reissue its NPDES permit to discharge 2.5 million gallons per day (MGD) of treated municipal and industrial wastewater from an advanced secondary treatment facility to a man-made channel to the French Stream.

Municipal Wastewater Treatment Facility [also referred to as "Publicly Owned Treatment Works" or POTW Discharges] Effluent Limits Regulatory Basis

The Massachusetts Surface Water Quality Standards, 314 CMR 4.00, include the requirements for the regulation and control of toxic constituents and require that EPA criteria established pursuant to Section 304(a) of the CWA shall be used unless site specific criteria are established. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion [40 CFR §122.44(d)(1)]. An excursion occurs if the projected or actual instream concentrations exceed the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the species to toxicity and where appropriate, the dilution of the effluent in the receiving water.

Also note that according to EPA regulations 40 CFR § 122.44(l), when a permit is reissued, effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit, unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued.

River Flow and Available Dilution Calculation

Water quality based limitations are established with the use of a calculated available dilution. Title 314 CMR 4.03(3)(a) requires that the effluent dilution be calculated based on the receiving water 7Q10 flow. The 7Q10 is the lowest observed mean river flow for 7 consecutive days, recorded over a 10 year recurrence interval. A revised dilution was calculated from data obtained from the U.S. Geological Survey (USGS) Streamflow Statistics web site, using the Streamstats v2.0 program. The resultant recalculated 7Q10 is 0.04 CFS. Additionally, the discharge design flow is used to then calculate the available effluent dilution as required by 40 CFR §122.45(b)(1).

Dilution based upon the design flow (2.5 MGD) of the facility:

$$\begin{aligned} DF &= (7Q10 \text{ Flow} + \text{WWTF Design Flow}) / (\text{WWTF Design Flow}) \\ &= (0.04 \text{ CFS} + 3.9 \text{ CFS}) / 3.9 \text{ CFS} = 1.01 \end{aligned}$$

Exhibit D: NPDES Permit No. MA0101923, January 26, 2006

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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Rockland
Board of Sewer Commissioners

is authorized to discharge from the facility located at

Rockland Wastewater Treatment Plant
South End of Concord Street
Rockland, MA 02370

to receiving water named

French Stream

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

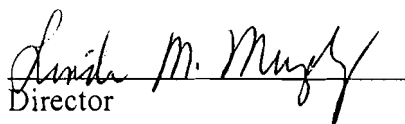
This permit shall become effective 60 days after signature.

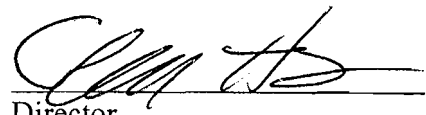
This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on August 4, 1999.

This permit consists of 16 pages in Part I including effluent limitations, monitoring requirements, Attachments A through C and 35 pages in Part II including General Conditions and Definitions.

Signed this 26 day of January, 2006


Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA


Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

In such cases, the permittee is required only to **submit an annual report by February 19** containing the following information:

- Name and address of contractor responsible for sludge disposal
- Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

F. COMPLIANCE SCHEDULES

No later than five (5) years from the effective date of this permit, the permittee shall achieve compliance with the final cold weather limits for ammonia as nitrogen (October 1 through March 31 and April 1 through May 31) and summer total phosphorus limit (May 1 - September 30). During the interim period, monitoring and reporting of total phosphorous and ammonia as nitrogen shall be performed in accordance with the requirements in Part A.1.

During the interim period, the permittee shall achieve an interim average monthly total phosphorus limit of 1 mg/l during April 1-October 31, shall further optimize the removal of total phosphorus using existing equipment pursuant to requirements 1 and 2 below, and will be subject to an earlier compliance date for achieving the summer total phosphorous limit if it is determined to be feasible pursuant to the requirements 1 and 2 below.

During the interim period there is no cold weather interim limit for ammonia as nitrogen.

Each year on the anniversary of the effective date of the permit, the permittee shall submit a report detailing progress toward compliance with the final cold weather limits for ammonia and the summer total phosphorus limit, including a projection as to whether the final compliance date will be achieved.

1. Phosphorus removal optimization requirement

Upon the effective date of the permit, the permittee shall begin to develop a plan for determining the lowest effluent phosphorus concentration achievable by the existing facility. The plan shall include, at a minimum, the use of multiple dosing points for chemical addition, various dosage rates, increased monitoring of influent and effluent phosphorus concentrations, and a plan for minimizing influent phosphorus loading to the treatment facility. The permittee shall submit the plan within three (3) months of the effective date of the permit and implement the plan within three (3) months of its submittal, or upon approval by the agencies, whichever is sooner. The study shall continue for one full phosphorus removal season (i.e the study shall be performed during the months of April, May, June, July, August, September, and October).

Exhibit E: Summary of Monthly Daily Average Total Flows,
January, 2005 – December 2005.

**Rockland Wastewater Treatment Plant
Summary of Monthly Daily Average Total Flows January 2005 - December 2005**

Permitted Monthly Daily Average Total Flow - 2.5 MGD

Month Monthly Daily Avg Reported (MGD)

| | |
|--------|-----|
| Dec-05 | 3.3 |
| Nov-05 | 3.4 |
| Oct-05 | 4.3 |
| May-05 | 3.2 |
| Apr-05 | 3.4 |
| Mar-05 | 3.7 |
| Feb-05 | 3.3 |
| Jan-05 | 3.4 |

Data taken from Monthly Discharge Monitoring Reports for NPDES Permit #MA0101923

Exhibit F: Response to Public Comments Rockland Wastewater Treatment Plant NPDES

No. MA0101923

NO PROCEED MA/daily 11bs of
flow x 22 = 165

3475 per copper

**RESPONSE TO PUBLIC COMMENTS
Rockland Wastewater Treatment Plant
NPDES No. MA0101923**

On June 9, 2005, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit developed pursuant to an application from the Rockland Board of Sewer Commissioners for the reissuance of a permit to discharge treated municipal wastewater to the French Stream via Outfall 001 with a design flow of 2.5 million gallons per day. The public comment period for this draft permit expired on July 8, 2005. Comments were received from the North and South Rivers Watershed Association (NSRWA), the Town of Rockland, and the Riverways Program-Massachusetts Department of Fish and Game.

After a review of the comments, EPA has made a final decision to issue the permit authorizing this discharge. The following response to comments describes the changes that have been made to the permit from the draft and briefly describes and responds to the comments on the draft permit. Clarifications which EPA considers necessary are also included below. The comment letters are part of the administrative record and they may be paraphrased herein. A copy of the final permit may be obtained by writing or by calling Doug Corb, EPA Massachusetts Municipal NPDES Permits Program (CMP), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1565.

Background Information

There were a number of comments submitted regarding high flow issues, including inflow/infiltration (I/I), plant operations, and plant bypasses. In order to expedite the response to those comments we have summarized the current situation at the facility and the expected measures to be taken by the facility to resolve these issues.

As described in the fact sheet, the facility has a long term average flow capacity of 2.5 MGD and a maximum daily flow capacity of 6.0. During wet weather, the facility has received daily flows of up to 12 MGD due to inflow and infiltration. The permittee has developed a high flow management plan which involves storing flow in off-line tankage and returning this flow for full secondary treatment after the high flow event. On two occasions during the past four and one half years, the quantity of flow has exceeded the storage capacity, resulting in the discharge of partially treated wastewater to the plant outfall, where it combined with fully treated effluent and was discharged. The current permit requires that this partially treated flow be sampled, but does not specifically authorize this discharge, which is therefore in violation of the permit. Although the high flow management plan developed by the permittee maximizes the currently available treatment and storage capacity, it is clearly an interim measure pending removal of significant quantities of I/I and /or increasing the flow capacity of the treatment facilities.

4. *Perform detailed evaluation of the most feasible alternatives for wastewater management and develop a recommended plan.*

This report will provide a roadmap for the community to adequately address current and future wastewater needs in a timely fashion, while concurrently managing growth within the community.

North and South Rivers Watershed Association (NSRWA)

Comment 1

Flow/Dilution: The facility has a design flow of 2.5 MGD, and a peak design flow of 6 MGD. Actual peak flows have been noted as high as 12 MGD and average annual flows also are in excess of the facilities design flow. Monthly Discharge Monitoring Reports indicate that there is significant Infiltration and Inflow, which contributes to the plant exceeding its design flows. The draft discharge permit requires that an Infiltration and Inflow [I/I] plan be developed. We request that the new discharge permit require the I/I plan include a timeline with reasonable milestones for decreasing Infiltration and Inflow to 10%. Clearly, there is a need to address the I/I as partially treated sewage is being directed to the outfall during times of high flows.

Response 1

The EPA compliance program and the MassDEP facility inspectors are closely tracking Rockland's ongoing high flow and I/I reduction plans. Should additional compliance schedules become necessary, they will be issued in the form of an enforcement order.

The permittee has a high flow management plan which uses surplus tankage for storage and pump back to the headworks for full treatment during periods when the plant design flow is exceeded. There have been two occurrences of partially treated effluent being discharged from the Rockland WWTP between January of 2001 and August of 2005. These events were March 22, 2001 and March 28, 2005. There have been a total of 5 storage and pump back events during the same four and one half year period. These and all other storm flows have been captured and received full secondary treatment.

The two partially treated flow events received primary settling, secondary aeration (with minimal biomass) and secondary settling as well as disinfection, in the offline second stage activated sludge facilities. The high flow management plan requires additional effluent sampling during such events along with reporting to EPA and MassDEP within 24 hours.

Response 7

Such information is provided to both the EPA and MassDEP under the bypass reporting requirements in 40 CFR §122.41(m). Because bypasses from sanitary sewers may not be authorized as a permit condition, they are not tracked in PCS. The reports to the agencies are a matter of public record and are available for review during EPA's regular business hours.

Comment 8

Just as important a need concerning bypass events is an increase in monitoring and testing during the bypass event. With monitoring set to 2/week for pollutants such as BOD, ammonia, and TSS and even less frequently for phosphorus, copper and aluminum, and Whole Effluent Toxicity in the permit and set standards about when and where the sampling should occur; it is quite probable that the blended sewage will not be tested for these pollutants of concern during most if any of the bypass events. While bypasses are not permitted it appears they do occur and the permit should not overlook this reality. We strongly urge requirements for increased monitoring during bypass events that will capture information about the pollutant loads and concentrations in the partially treated effluent for all pollutant parameters. Given the capacity of the plant for peak flows, the flow triggering a bypass event must be quite significant. Even if the concentrations of pollutants in the effluent are within limitations the loads could be orders of magnitude above loads at design flow and this information should be gathered.

Response 8

There have been only two bypass events, both during high flow periods in March (see response 1). The High Flow Management Plan calls for additional BOD and TSS sampling during bypass events.

Comment 9

The addition of phosphorus concentration limits that begin to reflect EPA Ambient Water Quality Criteria for Ecoregion XIV is an important step to addressing the nutrient impairment of the receiving waters in the absence of specific State nutrient criteria or a TMDL for the French Stream.

It seems unlikely the seasonal concentration of phosphorus assigned will allow French Stream to meet Gold Book guidance given the nominal dilution of the effluent in the stream though the reduction in allowable phosphorus concentration in the effluent is a good start toward reducing impacts to the system from nutrients. However concentration limits may not be sufficient limitations for the Rockland discharge. The plant's annual monthly average flow exceeded the design flow of 2.5 MGD during 2003 and there are many months with averaged flows well above design flow. This information suggests setting concentration limits for phosphorus will not be sufficient and a load limit is also needed to be more protective of this impaired waterway.

The problem is well illustrated by the flows recorded during April of 2004 when the average flow was 4.0 MGD. At 4.0 MGD the load of phosphorus, at the allowed seasonal concentration, would be 33 lbs or nearly 40% greater than the load at 2.5 MGD at this same concentration. This is a significant increase in phosphorus, during the growing season, to an effluent dominated waterway that is listed as impaired due to organic enrichment and nutrients.

We strongly encourage load limits, for both seasonal limits, in the permit to compensate for the higher flows the discharge monitoring data show to be a frequent occurrence.

Response 9

As you note, the facility has exceeded its design flow. The final permit includes an annual average flow limitation of 2.5 MGD, meaning that I/I must be reduced in order to achieve this limit, which will be done pursuant to the compliance schedule.

Also, you are correct in pointing out that the phosphorus limits in the permit may not ultimately be stringent enough to achieve Massachusetts water quality standards. This was stated in the fact sheet, but it was decided that in the absence of numerical criteria, a TMDL, or recent water quality information, that the state's technology-based "highest and best" treatment limit would be applied. This limit is expressed as a monthly average concentration limit, not as a mass limit, so mass limits will not be included in the final permit. Mass reporting requirements will be included however, so that this information will be readily available for any future water quality studies.

Also, as was stated in the response to comment number 3, we expect to re-visit the phosphorus limitation during the term of this permit.

Comment 10

The April high flows also raises another issue concerning the phosphorus limitations added to this permit. The seasonal, lower phosphorus concentration limit is invoked from May 1 through September 30. The Fact Sheet does not discuss how the beginning and end dates for these lower limits were determined. Recent draft permits, such those for the towns of Concord and Billerica, have seasonal phosphorus limits that begin on April 1st with an end date of October 31st. Given this is a coastal stream and likely to have weather some what tempered by its proximity to the coast that could result in an earlier start to the growing season, the small flows of the French Stream, and the known nutrient problem in the stream, was consideration given to having a the longer warm seasonal limitation such as assigned to the Concord and Billerica plants? We would strongly advocate for the longer summer seasonal concentration and load limitations for this facility.

Response 10

As discussed in the response to comment number 3, the 0.2 mg/l limitation for phosphorus, when final, will be in effect during the months of April and October.

Town of Rockland, Massachusetts

Department of Environmental Protection
Clean Water State Revolving Fund (CWSRF)
Calendar Year 2005 Project Evaluation Form

Wastewater Facilities Plan

August 31, 2004

AUG 31 2004

Project Evaluation Form

PART III - Project Narrative

Section A - Project Summary

Background

The Town of Rockland is located in the South Coastal Watershed in southeastern Massachusetts as presented in Appendix A. It is bounded to the north by Weymouth to the east by Norwell and Hanover, to the south by Hanson and to the west by Abington and Whitman. The community, with a population of about 17,670, is nearly 100% sewered. The Rockland/Abington Reservoir provides water to the community and is located in the north eastern corner of town. Appendix B presents a map of the sewer service area.

The Rockland Wastewater Treatment Facility has been in operation since 1980 and receives wastewater from a variety of industrial, commercial, and domestic sources. The WWTF is a secondary facility designed as a 2-stage activated sludge system. It was designed to treat a daily average flow of 2.5 million gallons per day (mgd) and a peak flow of up to 6.0 mgd. Since 1985 the first stage process tanks have been bypassed and the facility has employed a single stage activated sludge/nitrification process with nitrification and phosphorus removal performed seasonally. The Rockland WWTF discharges its effluent to a tributary to the French Stream. From there it flows to the Indian Head River and eventually into Massachusetts Bay.

The Rockland WWTF is currently experiencing the following concerns:

- The existing WWTF is aging and does not have the hydraulic capacity to accept peak flow,
- Current influent BOD loadings exceed the design average loading,
- The existing collection system has excessive infiltration and inflow, and
- The community is in a growth mode with many new developments proposed.

The Rockland NPDES permit (MA0101923) Part I.A.3.e. states:

“When the effluent discharged for a period of 90 consecutive days exceeds 80% of the design flow, the permittee shall submit to EPA and MA DEP a projection of loadings up to that time when the design capacity of the treatment facility will be reached, and a program for reaching satisfactory treatment levels consistent with approved water quality management plans.”

There have been two periods since January 2000 when influent flow has exceeded 80% of the design flow (2.0 mgd) for 90 consecutive days, and two other periods that have approached this criterion as presented in Appendix C. This spring, from March 6 through June 15, 2004 the plant flow exceeded 2.0 mgd. The previous spring, from

February 22 through July 2, 2003 the plant flow exceeded 2.0 mgd for 131 consecutive days. Data in Appendix C reveals a direct correlation between rainfall and plant flow, due to the excessive infiltration and inflow in the collection system. In extreme cases, the wastewater treatment facility does not have the capacity to pump and treat the peak flows; forcing the operators to pump flow to any/all off-line process tanks, if available before pumping directly to the outfall with minimal treatment.

With continued growth within the community, both average annual and maximum month flows continue to increase, thus potentially increasing the frequency and duration of this condition.

In July 1995, the town was issued an Administrative Consent Order by the MA DEP which required a town-wide inflow/infiltration (I/I) reduction plan. The overall purpose of this plan was to control and reduce the unnecessary flows entering the treatment system. Along with an I/I analysis, a Supplemental Sewer System Evaluation Survey was completed. Since 1995, Rockland has continued efforts to remain on track with implementing the I/I reduction plan. 2003

In addition, a second Administrative Order was issued in November 2001 related to the level of copper entering and discharged from the POTW. The Town has submitted the required reporting related to this ACO. Tier II order

Project Objective

The objectives for the Town of Rockland Comprehensive Wastewater Management Plan include the following:

1. Assess current conditions including an evaluation of existing wastewater treatment plant influent flows and loads by component (e.g. residential, commercial, industrial, and infiltration/inflow), existing water supply and demands, and an assessment of the condition and capacity of the existing wastewater treatment facility.
2. Assess future conditions including population projects, wastewater flow and load projections and infiltration/inflow removal efficiencies. Estimate when the design capacity of the treatment facility will be reached and develop a program for reaching satisfactory treatment levels for submission to DEP and EPA.
3. Identify and evaluate alternatives to manage existing and projected wastewater flows and loads including optimization of the existing collection and treatment facilities, upgrade and expansion of the existing wastewater treatment facility, water reuse, water conservation and development of an I/I bank.
4. Perform detailed evaluation of the most feasible alternatives for wastewater management and develop a recommended plan.

This report will provide a roadmap for the community to adequately address current and future wastewater needs in a timely fashion, while concurrently managing growth within the community. Appendix D presents the detailed scope for the first phase of planning.

Basis of Cost Estimate

The cost estimate of \$400,000 is based on the level of effort required for similar Comprehensive Wastewater Management Plans performed across the state. Since Rockland is nearly 100% sewered, the needs analysis is not required, but the focus of the report will be more on the assessment of existing collection and treatment facilities and development of future flows and loads to the treatment facility. Site assessment for a groundwater discharge location to supplement the current surface water discharge to the French Stream may be investigated. It is proposed that the project be conducted in phases with the first phase evaluating existing and future conditions and identifying alternatives for wastewater management. The second phase would screen and evaluate the alternatives identified, resulting in a cost-effective wastewater management solution for the community.

Section B – Public Health Criteria

Although at the present time no immediate public health concern exists, the potential for sanitary overflows, raw sewage backup and POTW malfunction are looming as development continues in the community and the collection system and treatment facility ages.

The wastewater treatment plant can hydraulically pump approximately 7.0+ mgd through the influent pump station and the effluent pump station, but the secondary treatment process may or may not be maintained. Knowing that the plant saw an average day flow in excess of 12 mgd in March 2001, and that average day flow approached 8.0 mgd in the spring of the last two years, a permanent plan to manage high flows must be established. The facility has in place standard operating procedures for high flow management to maintain all treatment processes, retain the secondary biomass, prevent any employee or public injuries, and protect the public health of the community. Under extreme flow conditions, raw wastewater is pumped from the manhole just upstream of the facility and is discharged to off-line secondary aeration tanks. When off-line tanks are filled to capacity, flow is pumped to the outfall. This procedure prevents sewage from backing up into the system and affecting homeowners and also prevents washout at manholes into the woods by the influent building. Although this high flow management procedure was not required in the Spring of 2004, it has been utilized in the past. With the average annual flow increasing with development in the community, the frequency and duration of these events may increase overtime. The ongoing infiltration and inflow reduction program, however, may provide some relief.

The discharge from the treatment facility to the French Stream ultimately flows to the Indian Head River, North River and Massachusetts Bay passing through the towns of Hanson, Pembroke, Hanover, and Scituate. Downstream from where the WWTF discharges there are boating areas and swimming. A site map and map displaying the surface waters from French Stream to Massachusetts Bay are in Appendix A.

Section C - Environmental Criteria

From an environmental standpoint, the high flow management plan can result in the discharge of partially treated wastewater to the French Stream. This obviously would have short term environmental impacts on the receiving water including exceedances of the NPDES permit limits, aquatic toxicity, excessive nutrient loadings, depletion of dissolved oxygen, and bacterial exceedances. Providing a more permanent solution to manage high flows on-site and provide a consistent level of treatment to these flows would be beneficial to the environment.

A review of influent BOD values show influent loads in excess of the design capacity for influent BOD. Although this has not resulted in effluent violations of BOD, the situation must be assessed and modifications made to the treatment processes, if necessary, to accommodate this additional load. If this situation is not addressed, the continued upward trend of influent loading could ultimately result in NPDES permit violations.

Section D - Project Effectiveness

By undertaking this project now, the community is pro-actively addressing a situation which will only get worse with time. Again, although the immediate public health and environmental concerns are comparatively minor, the potential exists for more serious events to occur. By clearly assessing the current situation, short-term and long-term improvements can be identified and evaluated and the community can move forward in a cost-effective manner, to address the issues at hand. Appropriate decisions regarding growth in the community can be made by better understanding the current conditions in the collection and treatment systems.

Section E – Program and Implementation Criteria

It is proposed that the project be performed under the Guidelines of Comprehensive Wastewater Management Planning. Since the community is nearly 100% sewerred, the focus of the wastewater management plan will be the assessment of the existing collection and treatment systems, assessment of current and projected wastewater flows and identification and evaluation of wastewater management alternatives.

This CWMP will fulfill the requirements under the NPDES permit that requires action when the effluent discharged for a period of 90 consecutive days exceeds 80% of the design flow. And will ensure that procedures are in place to maintain permit compliance as flow to the plant approaches the design capacity.

Addressing the issues at this plant will moderately address regional problems through the investigation of sewerred of needs areas outside of the community boundaries and through water quality improvements downstream of the plant discharge.

Infiltration and inflow is an issue that continues to be addressed in the community. This report will summarize the work performed to date, assess the effectiveness of the projects implemented and consider additional projects which could maximize the reduction of I/I while minimizing the cost of this work.

Exhibit G: Assabet River NPDES Permits-Response to Comments

Assabet River NPDES Permits - Response to Comments

On June 11, 2004, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP") (together, the "Agencies") released for public comment draft permits for the Hudson Wastewater Treatment Facility ("Hudson WWTF"), Marlborough Westerly Waste Treatment Works ("Marlborough WWTW"), Westborough Wastewater Treatment Plant ("Westborough WWTP") and the Maynard Water Pollution Control Facility ("Maynard WPCF") (collectively, "Permittees" or "POTWs"). The draft permits were subject to a public comment period from June 11, 2004 to July 28, 2004. During the comment period, public hearings were held on July 13, 2004 in Hudson, Massachusetts and July 14, 2004 in Westborough, Massachusetts. The Response to Comments below encompass written comments submitted to EPA and DEP during the public comment period and comments made during the public hearings.

Comments were received from the Town of Hudson ("Town" or "Hudson") in letters dated June 28, 2004 and July 14, 2004:

Comment No. 1: The Board of Selectmen's address should be 78 Main Street.

Response No. 1: This correction is made for the Final Permit.

Comment No. 2: The Town of Hudson has a significant problem with the requirement that the permittee complete an evaluation of dam removal/sediment remediation by March 2007. The Town of Hudson is opposed to including this requirement as part of the permit or as an obligation of the communities absent the financial participation of the Army Corps of Engineers, and the project management participation of DEP and/or EPA. No single government or organizational entity at the local level is capable of conducting the study. The role of the Assabet River Consortium was to complete the Comprehensive Wastewater Management Planning (CWMP) process only. The MADEP has the authority and capability and should conduct the study.

Response No. 2: The sediment remediation study ("Remediation Study") is important to meet the objectives outlined in the recently approved Total Maximum Daily Load for the Assabet River ("TMDL"). The TMDL requires the "removal of total phosphorus from POTW effluents to 0.1 mg/l during the growing season and a 90% reduction of phosphorus sediment flux" in order to meet water quality objectives for the Assabet River. TMDL at p. 7. However, the Agencies agree that DEP is better suited to coordinate the Remediation Study. Unlike the Assabet River Consortium ("Consortium"), which is an informal association representing the interests of impacted communities, DEP is positioned to solicit and evaluate input from all active stakeholders in the permitting process. Also in contrast to the Consortium, DEP will provide the institutional stability and resources necessary to guide the study to completion. The Agencies, therefore, have decided not to require in the Final Permit that the Consortium complete the Remediation Study.

Although the Remediation Study is no longer a permit requirement, the Agencies believe that it is important for the communities to participate in the study. The TMDL's waste load allocations for the POTWs are based on the reasonable assurance that significant (90%) sediment phosphorus reductions will occur. If it becomes evident that substantial sediment phosphorus reductions will not occur, then the Agencies will likely be obligated to pursue more stringent effluent limitations on the POTWs at the next permit issuance. To account for this potential, it is strongly recommended that future facility upgrades allow for the addition of technology if further reductions in the phosphorus effluent limits are necessary. In any case, there is strong incentive for the communities to work with MADEP and others to advance efforts to reduce the sediment phosphorus flux.

Significant state and federal funds will be contributed to the cost of the Remediation Study. The Towns of Hudson, Maynard, Westborough, Northborough, Shrewsbury and Marlborough have entered into a binding Memorandum of Understanding ("MOU") to assure that the study is funded to completion. The MOU outlines funding responsibilities as well as a procedure for managing the Remediation Study, which will be completed pursuant to a contract to be entered into with the Army Corp of Engineers. EPA and the Organization for the Assabet River ("OAR") are both members of the formal Study Coordination Team. Expected state and federal contributions combined with the MOU enhance the likelihood that the Remediation Study will be completed in a timely manner. A major step in understanding the sediment problem is already underway through a \$200,000 cooperative effort with the US Geological Survey to inventory the amount and quality of the sediment behind the major dams on the Assabet River. In addition, \$500,000 was recently secured through special State legislation for evaluating sediment remediation options.

Comment No. 3: Hudson requests that the Agencies reduce the lower limit of the pH range from 6.5 to 6.0, because performance history indicates that a limit of 6.5 will be difficult to consistently achieve. In addition, the change in the lower limit of the pH range from 6.0 to 6.5 conflicts with the phosphorus limits. Due to the imposition of an aluminum limit, alum cannot be used for phosphorus removal. The alternative of using ferric chloride results in a lowering of pH which will make it difficult to achieve the increased pH limit.

Response No. 3: The Agencies understand the conflict between these limits but believe that the 6.5 s.u. limit on the lower end of the pH range is necessary to ensure that pH levels in the receiving water meet the MAWQS minimum pH criterion of 6.5 s.u. Since at design discharge flows the percentage of the 7Q10 flow that is comprised of wastewater effluent is expected to approach 100% (see Consortium Response No. 25 below), there is insufficient base flow to buffer a low pH discharge. If wastewater is being discharged at a pH of 6.0 s.u. during low flow conditions, there is a reasonable potential that the minimum criterion value of 6.5 s.u. will not be met.

Alternatives for addressing the conflict include using poly-aluminum chloride, which has proven effective for other wastewater discharges with similar conflicts or pursuing site specific criteria for aluminum, which might provide some relief from the state wide criteria. Please also see Hudson Response No. 6 below.

Comment No. 4: We cannot comply with the alarm requirements and the respective reporting conditions for chlorine without significant modifications to the existing facilities. Since the long-term plan for treatment plant improvements may include an alternate disinfection system, we request that this requirement be removed.

Response No. 4: As noted in the Fact Sheet, chlorine and chlorine compounds can be extremely toxic to aquatic life. The Total Residual Chlorine ("TRC") limit is based on national criteria recommendations promulgated by EPA and adopted by Massachusetts as a part of its water quality standards. See EPA National Recommended Water Quality Criteria (2002) and 314 C.M.R. § 4.05(5)(e). There was one violation of the TRC limit between May 2001 and December 2003. Because the Agencies have concluded that there is a reasonable potential for the Hudson WWTF to exceed MAWQS relative to chlorine, the Agencies are required to include a limit in the Final Permit, as well as reasonable reporting and monitoring requirements.

The alarm and reporting requirements for TRC are intended to timely warn the Town of system interruptions or malfunctions and to notify the Agencies of such incidents. Given the daily variability of flow in the Hudson WWTF as well as the variability of chlorine demand of wastewater, periodic grab samples alone cannot sufficiently determine whether effluent chlorine and bacteria levels are in compliance with limits.

We have included a schedule in the Final Permit that allows for necessary modifications to be completed as part of the overall treatment plant improvements. If the treatment plant improvements eliminate the need for the use of chlorine, the need to alarm the chlorination and dechlorination system is obviously negated. The Agencies cannot, however, eliminate the alarm and reporting requirements for chlorine based on the mere possibility that the Town will in the future adopt a disinfection system that does not utilize the chemical. In evaluating disinfection options, the Town should note that future permit requirements for monitoring chlorination and dechlorination systems will likely require continuous monitoring.

Comment No. 5: The 0.1 mg/l phosphorus limit for total phosphorus as defined in the permit is unacceptable. Even with a 60-day rolling average, any single major deviation could cause a permit violation. We request that a median average or an alternative method which would exclude extreme excursions be established for calculating the rolling average.

Response No. 5: Water quality-based limits that are developed to protect against chronic impacts such as eutrophication are typically established as monthly average limits. The 60-day rolling average limit for phosphorus possesses advantages over monthly averaging because it provides the permittee with flexibility to deal with occasional, perhaps unavoidable excursions above limits, while at the same time necessitating that such exceedances are short-term and that low levels of effluent discharges are maintained overall. Short-term exceedances of the phosphorus limit are unlikely to result in a significant response in the receiving water relative to aquatic plant growth. Longer term exceedances capable of eliciting a response in plant growth would likely result in a violation of the rolling average limit. The rolling average also ensures that any reduction in treatment efficiency is responded to quickly. A median limit would allow for up to 50% of the sampling results to exceed the 0.1 mg/l limit. This frequency of excursions would not ensure that water quality criteria are met in the peak growing season. See Maynard

Response No. 7 for the Agencies' rationale regarding the imposition of a monthly median limit for the transitional month of April.

Comment No. 6: The Town requests that the aluminum limit be removed from the permit until more data is obtained to substantiate the basis for the limit and determine the ability of the facility to achieve the expected removal.

Response No. 6: The basis for the aluminum limit is found in the MAWQS, which requires an ambient chronic criterion of 87 µg/l for the pollutant. Over the past two years, the average monthly aluminum discharge from the Hudson WWTF has ranged from 143 µg/l to 575 µg/l, which constitutes a reasonable potential to cause or contribute to an excursion above MAWQS. Accounting for dilution, the Agencies determined that a monthly average aluminum limit of 278 µg/l would be sufficient to comply with MAWQS.

The establishment of water quality-based limits, unlike technology-based limits, are not based on treatment capabilities. The Permittee may wish to pursue development of a site specific aluminum criterion, although other municipal treatment facilities, e.g. Milford, MA, have demonstrated the ability to achieve both low phosphorus limits and low aluminum limits. The Agencies also note that the elimination of the aluminum limit, an existing permit condition, would violate the anti-backsliding provisions of the Clean Water Act ("CWA") and the applicable NDPES regulations.

Comment No. 7: The Town objects to the reduction of the total copper limit to 17 µg/l and notes that meeting the current limit of 50 µg/l has been difficult and inconsistent. The current interim limit imposed by EPA should remain in effect until such time as the treatment facility upgrade is completed.

Response No. 7: MAWQS require that EPA criteria established pursuant to Section 304(a) of the CWA be used for toxic constituents, including copper, unless site specific criteria have been established. Discharge Monitoring Reports ("DMRs") for the Hudson WWTF from May 2001 to December 2003 indicate a monthly average copper value of 40 µg/l and highest daily maximum values of 57 µg/l and 220 µg/l, which constitute a reasonable potential of the Hudson WWTF discharge to cause or contribute to an exceedance of the water quality-based chronic copper criterion of 17 µg/l. The Agencies are therefore obligated to include the limit. Water quality-based limits are established on the basis of achieving water quality standards and not on treatment capabilities. As indicated at Attachment C to the Draft Permit, the copper limit is based on ambient, hardness dependant chronic criteria. Please also see Westborough Response No. 7.

The same copper limit was contained in the permit issued on December 14, 2000. The interim limit of 50 µg/l referenced above was imposed through an administrative compliance order in connection with the existing permit for the Hudson WWTF. It is not stringent enough to meet applicable MAWQS, and it is therefore not appropriate for inclusion in the Final Permit.

Comment No. 8: The Town objects to the November 1 to May 31 ammonia limit of 10 mg/l and requests ammonia be a report only requirement.

Response No. 8: The MAWQS incorporate by reference EPA's national recommended water quality criteria for toxics, including ammonia. Please see Hudson Response No. 7 above. Current EPA criteria guidance for ammonia emphasizes the toxicity of ammonia during the colder periods of the year and the need to ensure that limits necessary to achieve applicable ambient criteria are established. The ambient chronic criterion for November through March is 7.9 mg/l and for April and May is 5.9 mg/l. The ammonia limit of 10 mg/l for November through May in the Draft Permit reflects an adjustment for flow dilution. The previous permits did not require the POTWs to nitrify (convert ammonia to nitrate) during the winter period. Permit limits are necessary to ensure that nitrification required in the summer period is continued in the winter period in order to achieve the ambient criteria levels. In the absence of nitrification, municipal wastewater effluent after secondary treatment is generally in the range of 15-20 mg/l of ammonia, which would constitute a reasonable potential to cause or contribute to an exceedance of the water quality criterion for ammonia toxicity. A monitor only requirement would not ensure that the ambient criteria are met.

Comment No. 9: The Town objects to the increase in sampling frequency and the associated financial burden.

Response No. 9: Of the eleven parameters included in both this permit and the previous permit, the sampling frequency was increased only for two, specifically phosphorus and ammonia.

The summer period sampling frequency for phosphorus was increased from twice per week to three times per week. The increase in frequency is appropriate given the significance of the phosphorus-driven water quality impairment of the Assabet River. However, phosphorus concentrations are not expected to change significantly prior to the upgrade of the treatment facility. Prior to that time, increased sampling frequency is likely to be of limited utility. The final permit therefore retains the two-per week phosphorus sampling frequency until completion of the treatment facility upgrade.

The Agencies acknowledge that the Town will incur costs in order to comply with the ammonia sampling requirements proposed in the Draft Permit. Nevertheless, because of the potential for ammonia-related toxicity in the receiving waters, the Agencies have retained both the winter and summer period sampling frequencies for ammonia in the Final Permit. Please see Hudson Response No. 8. Given the extreme toxicity of ammonia to aquatic life as well as the variability of ammonia levels in Hudson's effluent, the Agencies believe that the sampling frequency will provide a timely and representative picture of the discharge with respect to the pollutant. As mentioned, increased sampling frequency for the winter period is consistent with the new national emphasis on preventing ammonia toxicity during colder periods. Finally, the Agencies note that the other three Permittees will also be monitoring twice per week in the summer period and once per week in the winter period. Uniformity in sampling frequency will allow the Agencies to develop a representative picture of ammonia impacts on the river as whole.

Please also see Responses to Environmentalist Comments Nos. 11 and 19 below with respect to increases in sampling requirements from the Draft Permit to the Final Permit.

Comment No. 10: The specific compliance dates identified in the permit (items 3, 5 and 6) should be modified to reflect a time limit from the issuance date of the permit.

Response No. 10: Compliance schedules are permitted under federal and state law, but must require compliance "as soon as possible." See 40 C.F.R. § 122.47(a)(1). The Agencies included a compliance schedule in order to account for the planning and construction of plant upgrades necessary to comply with the new phosphorus limitations.

While the Town has not articulated any specific impediments or detailed alternatives to meeting the compliance milestones in the Draft Permit, the Assabet River Consortium has endeavored to do so. See Assabet River Consortium Comment No. 22. In light of the lag between the issuance of the Draft Permit and Final Permit, the Agencies believe that it is appropriate to modify the final compliance date to reflect a time limit (54 months) from the issuance date of the Final Permit. This revised schedule gives the Town 30 months to finish construction after design is completed. The interim milestones have also been modified in order to clarify the requirements with respect to planning, design and construction. The interim milestones are also required to ensure consistency with federal regulations concerning schedules in permits. See 40 C.F.R. § 122.47(a)(3)(ii). The Town's ability to complete construction prior to the deadline is enhanced by the generous schedule included in the Final Permit for completing design. In the Agencies' experience, the planning, design and construction of treatment plant upgrades are typically completed in approximately 48 months. In light of that fact, the Agencies believe that the schedule contained in the Final Permits is reasonable.

The compliance milestone and date identified in item #3 has been removed from the Final Permit.

Comment No. 11: On page 5 of the Fact Sheet there is reference to the permittee conducting an analysis of phosphorus accumulation in the impoundments. The Town takes exception to the inclusion of such studies in the permit requirements and request that these references be deleted.

Response No. 11: The language in the Fact Sheet refers to potential future requirements and not to a specific requirement of the Final Permit. The statement in the Fact Sheet addresses an issue where there is a significant level of uncertainty and where additional data may be useful. Section 308 of the CWA may be an appropriate mechanism for obtaining additional data.

Comments were received from the Town of Maynard in letters dated July 9, 2004 and July 26, 2004:

Comment No. 1: We are currently not using any aluminum-based coagulants. There are cost implications associated with this increased testing and we are not aware of any problems with our discharge of this constituent.

Response No. 1: A footnote has been added to the permit indicating that sampling for aluminum is only required if aluminum-based coagulants are being utilized. If no aluminum-based coagulants are being utilized, the discharge monitoring values for aluminum should be reported as "no discharge."

Comment No. 2: Ammonia monitoring has been increased from once monthly to once per week (November 1 to May 31). There are cost implications associated with the increased testing and we are not aware of any problems with our discharges of this constituent. Maynard has historically reported concentrations of ammonia well below our current limit as a result of the large quantity of RBC media relative to ammonia load. Historically, the ammonia has averaged 2 - 4 mg/l over the long term indicating a very stable effluent quality.

Response No. 2: Although Maynard WPCF effluent may currently be discharging below permitted limits, an ammonia limit and attendant monitoring are necessary to ensure that that Maynard continues to nitrify in the winter period, which it is currently not required to do. In the absence of nitrification, municipal wastewater effluent after secondary treatment is generally in the range of 15-20 mg/l of ammonia, a level which has the reasonable potential to cause or contribute to an exceedance of the water quality criterion for ammonia toxicity. Please see Hudson Response No. 9 for further discussion of the Agencies' rationale for increased ammonia monitoring.

Comment No. 3: A phosphorus limit of 0.1 mg/l is extremely stringent and EPA has not presented compelling evidence demonstrating the need or benefits associated with achieving this low level. What funding mechanisms or priorities will EPA be providing to assist with the cost?

Response No. 3: In addition to technology-based controls, permits must contain any more stringent limitations for particular pollutants that are necessary to meet MAWQS. A water quality-based effluent limitation must be calculated at levels to ensure achievement of MAWQS, regardless of the availability or effectiveness of technologies or the costs dischargers would incur to meet those limits. A water quality-based effluent limitation for a pollutant also must be consistent with any available waste load allocation approved by EPA in connection with a TMDL for that pollutant and receiving water. 40 C.F.R. § 122.44(d)(1)(vii)(B).

The Assabet River suffers from eutrophication, which is a process of nutrient accumulation and ecosystem change that can occur in aquatic ecosystems. In the Assabet River, cultural, or man-made, eutrophication has occurred in the presence of excessive nutrient loadings and impoundments. As a result of water quality problems associated with eutrophication, the Assabet River was placed on a list of impaired waterbodies requiring water quality improvement, known as a Section 303(d) list. Specifically, the Assabet River, designated as a Class B waterbody, has been observed to frequently fail to meet applicable numerical MAWQS, including dissolved oxygen concentration, and applicable narrative criteria, including aesthetics, bottom pollutants and alterations and nutrients. Under the CWA, Massachusetts is required to develop a Total Maximum Daily Load ("TMDL") allocation plan for all priority waterbodies on the Section 303(d) list.

As discussed, DEP developed a TMDL for the Assabet River that established maximum load (for non-point sources) and waste load (for point sources) allocations the waterbody can receive and still meet MAWQS relating to eutrophication. EPA approved the TMDL on September 23, 2004. The TMDL and the supporting water quality data demonstrate the need for the 0.1 mg/l phosphorus limit.

Response No. 12: The removal of TSS mass limits, adoption of a 12-month rolling average and adjustment of the seasonal period to account for higher stream flows will not meet MAWQS.

Effluent limitations for TSS and CBOD₅/BOD₅ for November through March are based on secondary treatment requirements. The calculation of the TSS limit is included as Attachment A to the Fact Sheet. A similar calculation was used to derive CBOD₅/BOD₅ limits.

TSS and CBOD₅/BOD₅ limitations for April through October are water quality-based limits. Traditionally, DEP evaluated flow in NPDES permits by applying design flow (the average annual flow) as a monthly average flow limit. As part of a policy change requested by DEP, flow limits in NPDES permits are now expressed as a 12-month rolling average, rather than a monthly average based on average annual flow. See June 12, 2000, "MADEP-DWM NPDES Permit Program Policies Related to Flow and Nutrients in NPDES Permits" ("DEP Flow Policy"). The purpose of the change was to allow some variation in WWTP flows in response to wet weather, and in recognition that the flow rate used as a monthly average is in most cases presented in the treatment plant planning documents as an annual monthly average. Agreeing to revise the flow limit from a monthly average based on average annual flow to a 12-month rolling average caused concern that there could be a significant net increase of pollutants discharged to the receiving water, particularly during higher flow months when the monthly average discharge flow exceeds the annual average flow. To prevent further degradation of the receiving water, the Agencies agreed to add mass limits based on the then current average annual design flow of the facility for both BOD₅ and TSS as a permit condition to ensure that existing controls on mass discharges are maintained.

NPDES regulations allow for the exercise of best professional judgment on the part of the permit writer to establish mass limits. See e.g. *In re City of Port St. Joe*, 7 E.A.D. 275, 293-93 (EAB 1997) (observing that "The NPDES regulations do not provide guidance to the Regions on how to establish appropriate mass limits for a POTW, except for the general direction that "in the case of POTWs, permit effluent limitations, standards, or prohibitions shall be based on design flow"); "Training Manual for NPDES Permit Writers" at 26 (EPA May 1987). Here, the Agencies concluded that mass limits are necessary in light of the continuing severe impairment of the receiving waters caused by the POTW effluent discharges. The receiving waters are listed under Category 5 on the Massachusetts Year 2002 List of Impaired Waters ("Section 303(d) List"), a ranking reserved for the most severely impaired waters in the state. Segments of the receiving water show impairment for suspended solids, nutrients, organic enrichment and low dissolved oxygen, among others. The Agencies believe that removing the mass limits for CBOD₅/BOD₅ and TSS has a reasonable potential to cause or contribute to further violations of standards with respect to the listed pollutants and has a potential to result in further degradation of the receiving waters. See 314 C.M.R. § 4.04. The Permittee has not offered evidence to satisfy the antidegradation review procedures necessary to justify such an outcome in non-attainment waters such as the Assabet River. See "Massachusetts Antidegradation Review Procedure for Discharge Requiring a Permit Under 314 CMR 3.03" (1993). The Agencies have also considered and rejected the alternative of using a 12-month rolling average to calculate mass loadings. Use of the average annual flow furthers the objective of the permit requirement, which is to maintain not only the overall magnitude of pollutant loadings, but also the frequency and

duration of such loadings, subsequent to the change in flow policy. As the Agencies are obligated to include reasonable limitations and conditions that are necessary to ensure compliance with MAWQS, the mass limits, as well as the measuring period, have been retained. See 33 USC § 301(b)(1)(C); 40 CFR § 122.44(d)(1)(i). It should also be noted that the DEP Flow Policy itself contemplates the imposition of mass limits in conjunction with the revised flow designation. See DEP Flow Policy at p. 1.

In addition, the mass limits for BOD₅/CBOD₅ cannot be made less stringent without violating applicable anti-backsliding provisions.

Finally, the Agencies note that permits must include limits as stringent as necessary to meet Massachusetts WQS irrespective of technological feasibility.

Comment No. 13: The proposed 0.1 mg/l total phosphorus limit may not be consistently achieved even if the best available process technology were installed. Therefore, the permit requirements should be modified to 0.2 mg/l, until a technology demonstration-testing program is performed. At that time, the permit's total phosphorus limit could be modified to reflect best documented performance. It is also recommended that seasonally-tiered limits for phosphorus be provided in the spring and fall, and the lowest limit of 0.2 mg/l apply only in the warmer summer months (that is July and August).

Response No. 13: Please see Maynard Response Nos. 3, 4 and 7 above.

Comments were received from the Assabet River Consortium in a letter dated July 14, 2004:

Comment No. 1: The Draft NPDES Permits cap wastewater treatment plant flow based on a 12-month rolling average basis, when the regulators clearly understand the design year flow projection for the service areas are expected to exceed their current permit limits. As was presented in the CWMP Phase II Documents, a multi-million-dollar premium is required to discharge flow in excess of the permitted capacity to a local groundwater discharge site. The cost-benefit of this requirement is not supported by the CWMP or the TMDL.

~~Three of the WWTFs would be over their allotted flow based on build-out projections in the approved CWMP Phase I Document and approved CWMP Phase II Document, preventing economic development in these areas of the communities. Given the Commonwealth's current position on sustainable/smart growth we would expect the regulatory agencies to be promoting growth in this primarily commercial and industrial areas of the Consortium communities, located along major transportation corridors, some of which currently have water and sewer infrastructure in place. The proposed cap in WWTF flows is counter to the sustainable/smart growth initiative.~~

Use attainability, minimal impacts of an increased discharge, economic development, and the non-existence of less environmentally damaging feasible alternatives are all points to be expanded upon and presented in the CWMP Phase III Document and CWMP Phase IV Document to meet the requirements of 314 C.M.R. 4.00. A re-opener clause should be included

Exhibit H: Copy of the Administrative Consent Order for the Town of Rockland effective July 11, 1995



Commonwealth of Massachusetts
Executive Office of Environmental Affairs

**Department of
Environmental Protection**
Southeast Regional Office

William F. Weld
Governor

Trudy Coxe
Secretary, EOEAA

David B. Struhs
Commissioner

COPY

July 14, 1995

Mr. Michael McDonald, Chairman
Rockland Sewer Commission
P.O. Box 330
Rockland, MA 02370

Dear Mr. McDonald:

Enclosed please find an original copy of the signed Administrative Consent Order for the Town of Rockland with the effective date of July 11, 1995.

Thank you for all your cooperation in this matter.

Very truly yours,

Brian Donahoe
Deputy Regional Director

BD/lm

cc: Kopelman & Paige
101 Arch Street
Boston, MA
ATTN: Anne Hyland

E.P.A.
JFK Federal Building
Boston, MA 02203
ATTN: Steve Couto

DEP - SERO
ATTN: George Crombie
Joseph Shepherd

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of)
Town of Rockland) Administrative Consent Order
) Number: NPDES Permit No. MA0101923
) NOTICE OF NONCOMPLIANCE
) ACO SE 95-1007

I. THE PARTIES

- 1.1 The Department of Environmental Protection (hereinafter the "Department") maintains its principal offices at One Winter Street, Boston, Massachusetts and also operates a regional office at 20 Riverside Drive, Lakeville, Massachusetts. The Department's authority to issue this Administrative Consent Order and Notice of Noncompliance ("Consent Order") is conferred by the Massachusetts Clean Waters Act, M.G.L., c.21, §§ 26-53.
- 1.2 The Town of Rockland, a municipal corporation located in Plymouth County and duly organized under the laws of the Commonwealth of Massachusetts, with its principal offices located at the Rockland Town Hall, Rockland, Massachusetts, is the owner of a publicly owned treatment works (the "Facility") from which it discharges pollutants from a point source to the French Stream.
- 1.3 The Town of Rockland Sewer Commission (the "Commission") was established under Section 11 of Chapter 338 of the Acts of 1913, and is responsible for operating the Rockland Wastewater Treatment Plant ("the Facility"). The Commission maintains its principal offices at the facility located at Concord Street, Rockland, Massachusetts.
- 1.4 The Town of Rockland Sewer Commission shall hereafter be referred to as "the Permittee".

II. PURPOSE

- 2.1 The purpose of this Consent Order is to define and establish the steps to be taken, and the establishment of a schedule for compliance, to

ensure that the operation of Rockland's Wastewater Treatment Plant is in compliance with all applicable State and federal requirements, in particular, the discharge limitations for copper and chlorine as provided in the Permittee's NPDES permit issued jointly by the U.S. EPA and the Department.

III. STATEMENT OF FACTS

- 3.1 The Department is a duly constituted agency of the Commonwealth of Massachusetts, established pursuant to M.G.L. c. 21A, §7, and is responsible for the implementation and enforcement of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§26-53 and the regulations promulgated thereunder at 314 CMR 3.00. The Department and the United States Environmental Protection Agency (EPA) pursuant to the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., jointly administer a regulatory program within the Commonwealth of Massachusetts requiring that any discharges into the surface waters of the Commonwealth be in conformity with jointly issued discharge permits.
- 3.2 The Department, pursuant to 314 CMR 1.00 et seq., administers a regulatory program within the Commonwealth of Massachusetts requiring that all discharges into the surface waters of the Commonwealth be in conformity with surface water discharge permits jointly issued by the Department and the EPA.
- 3.3 The Permittee owns, operates and maintains through the use of a private contractor a sewerage system consisting of a common sewer system which collects and transports sewage and other wastes from properties connected thereto to a wastewater treatment facility ("the facility"). The facility was designed and approved to discharge 2.5 million gallons per day ("MGD") of treated wastewater and presently discharges approximately 1.7 MGD to the French Stream.
- 3.4 The Permittee was issued NPDES Permit No. MA0101923 (the "Permit") on August 4, 1993 jointly by the Department ("DEP") and the U.S. Environmental Protection Agency ("EPA").

- 3.5 The Permittee, by letter dated September 2, 1993 appealed the copper and chlorine limits contained in the 1993 Permit and requested an evidentiary hearing on these limitations. By letter dated September 17, 1993, the EPA denied the request for an evidentiary hearing on the 1993 Permit.
- 3.6 In a petition dated October 14, 1993, the Permittee appealed the denial of the request for an evidentiary hearing to the Environmental Appeals Board. Due to the request for an evidentiary hearing on the 1993 Permit, the appealed limitations were stayed until the appeal was denied by the Environmental Appeals Board.
- 3.7 By opinion dated August 19, 1994, the Environmental Appeals Board denied the petition for review of the Region's (EPA) denial of the request for an evidentiary hearing on the 1993 Permit.
- 3.8 The discharge of pollutants to the waters of the Commonwealth constitute violations of M.G.L. chapter 21, sec 43(2), which provides:
- No person shall discharge pollutants into waters of the Commonwealth nor construct, install, modify, operate, or maintain an outlet for such discharge or any treatment works, without a currently valid permit issued by the director. No person shall engage in any other activity that may reasonably be expected to result, directly or indirectly, in discharge of pollutants into waters of the Commonwealth, nor construct, effect, maintain, modify or use any sewer extension or connection, without a currently valid permit issued by the director, unless exempted by the regulation by the director.
- 3.9 The French Stream is a Class B waterway and warm water fishery, located in the South Shore Coastal Drainage Area. Pursuant to 314 CMR 4.00, Mass Water Quality Standards, waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife and for primary and secondary contact recreation.
- 3.10 The Department finds that the Permittees' direct discharge to surface waters interferes with the beneficial uses assigned these waters in the Surface Water Quality Standards.

3.11 M.G.L., c.21, § 44(1) provides in pertinent part:

Whenever it appears to the Department that there are discharges of pollutants, without a required permit, or that such discharges are in violation of a permit issued under this chapter, or in contravention of any regulation, standard or plan adopted by the Department, the Department may order the discharger to...take other appropriate action under rules and regulations adopted by the director subject to the provisions of chapter thirty A, and to cease and desist making or allowing further discharges beyond a specified date until compliance with the order is fully achieved. Issuance of an order under this paragraph shall not be deemed an election to forego any action for criminal or civil penalties under section forty-two.

3.12 According to the discharge monitoring reports ("DMRs") submitted to the DEP and EPA by the Permittee, as required by the Permit, the Permittee's discharge from the Facility to the French Stream has violated the permit's effluent limitations for copper (monthly average and maximum daily) and chlorine residual (maximum daily) since August 19, 1994. Prior to the final decision of the Environmental Appeals Board referred to in paragraph 3.7 above, the Commission submitted plans for interim plant and process modifications designed to address the chlorine residual violation. Said interim plans were approved by the Department and constructed by the Commission. The approved interim dechlorination system became fully operational on March 1, 1995 and, as of the date of this Consent Order, the Facility is operating in compliance with the Permit's effluent limitations for chlorine residual.

3.13 On January 24, 1995, the Town of Rockland was issued an amended Administrative order from the Department's Division of Solid Waste restricting the disposal of Solid Waste to "Residential only" at its Municipal landfill located at Beech Street in the Town of Rockland. Prior to that date, the Permittee disposed of its residuals generated at its wastewater facility at the Beech street location along with other municipal refuse.

3.14 In accordance with M.G.L. c.21, § 26-53, c.83, §7, and c.111 § 17, and the Department's Policy on the

Redundancy Requirements for Sludge Disposal, dated Jan. 4, 1984; the permittee needs to have a primary and secondary disposal option for its residuals.

IV. DEFINITIONS

- 4.1 The terms in this Consent Order shall have the same meaning as provided in the M.G.L. c. 21, § 26-53 and regulations promulgated thereunder unless the context clearly indicates otherwise.

V. DISPOSITION AND ORDER

- 5.1 As a result of discussions which have taken place between the Department and the Permittee (collectively "the parties") and without adjudication of any fact or law set forth above, the parties have agreed to negotiate this Consent Order, rather than expend the time and resources necessary to adjudicate this matter. This Consent Order represents the full and final agreement between the parties concerning the operation of the wastewater treatment plant. This Consent Order shall not constitute, be construed as, or operate as an admission that the Permittee has violated any law or regulation.
- 5.2 Nothing in this Consent Order shall be construed as or operate as, barring, diminishing, adjudicating, or in any way affecting any legal or equitable right of the Department to issue any future Order with respect to the subject matter covered by this Consent Order, or in any way affecting any other claim, action, suit, cause of action, or demand which the Department may initiate.
- 5.3 This Consent Order also serves as, and meets the requirements of, a Notice of Noncompliance, as described in M.G.L. c. 21A § 16 and regulations promulgated thereunder of 310 CMR 5.00. The Department hereby determines, and the Permittee hereby agrees, that the deadlines set forth in this Consent Order constitute reasonable times to perform the acts expressly agreed to in this Consent Order and that the activities required pursuant to this Consent Order otherwise meet the requirements of Chapter 21.
- 5.4 The activities conducted pursuant to this Consent

Order are subject to approval by the Department and shall be performed in accordance with Massachusetts General Laws Chapter 21, § 26-53, 314 CMR 3.00, and all other applicable Federal, State and local laws. Any non-compliance with the requirements and provisions of applicable Federal, State and local laws, regulations and approvals which delays the achievement of any performance deadline set by this Consent Order shall constitute a violation of this Consent Order.

- 5.5 All engineering work performed pursuant to this Consent Order shall be under the general direction and supervision of a qualified (experienced in wastewater treatment plant management and design), registered professional engineer. Any contractual relationship between the Permittee and the engineer subsequent to this Consent Order shall require the engineer, as a condition of the contract, to implement work consistent with the provisions of this Consent Order. The Permittee shall provide the Department with a signed copy of any existing contractual agreements between the Permittee and the engineer within thirty (30) days of the effective date of this Consent Order. And the Permittee shall provide the Department with a signed copy of any subsequent contractual agreements between the Permittee and the engineer or between the Permittee and any subsequent engineer within thirty (30) days of execution.
- 5.6 This Consent Order shall apply to and be binding upon the Permittee and its successors and assigns. No change in ownership of the wastewater treatment plant will alter in any way the responsibility of the Permittee under this Consent Order. The Permittee agrees to provide a signed copy of this Consent Order to any successor or assign.
- 5.7 The Permittee shall not violate this Consent Order and shall not allow its successors, agents, or contractors to violate this Consent Order.
- 5.8 This Consent Order, its attachments, together and not separately, constitute the agreement and understanding between the Department and the Permittee regarding the Permittees' obligations under this Consent Order. This Consent Order incorporates by reference Attachment I, attached hereto. The requirements provided by Attachment I and any submittals required therein and approved by DEP including deadlines for performance, are

enforceable pursuant to this Consent Order

5.9 The Permittee agrees to submit within ninety (90) days from the effective date of this Consent Order, to the DEP for its review and approval and a copy to the EPA, a Scope of Work ("SOW") which shall at a minimum, but not be limited to, all of the items set forth in Attachment I.

5.10 The SOW shall also include a recommended schedule, not to exceed three (3) years, for implementation of the following tasks:

- a. A townwide inflow/infiltration (I&I) reduction plan adopted and implemented within a recommended timeline to control and reduce the unnecessary flows entering the treatment system.
- b. A review and/or revision of the Permittee's Sewer Use Ordinance and Intermunicipal Agreements to assist in the ability to comply with all applicable State and Federal requirements.
- c. A plan for growth control to ensure that the capacity of the wastewater treatment facility is not exceeded. This should include, but not be limited to limiting additional hook-ups, reduction in I&I, water conservation and recycling, and industrial source reduction.
- d. A plan for the implementation of short term and long term residuals management and disposal. These plans must be submitted to the Department for approvals.

5.11 The Permittee shall take all steps necessary to plan, design and construct facilities and obtain all permits necessary to adequately treat and dispose of all wastewater collected by the Town's sewerage system. The discharge quality shall meet or surpass requirements of 314 CMR 3.00 and 314 CMR 4.00 for discharge to surface waters. In carrying out this requirement, the Permittee shall undertake the planning, design and construction of the improvements to the wastewater treatment plant pursuant to this Consent Order in accordance with the following schedule:

- a. No later than August 1, 1996, the Permittee shall submit final design plans to the

Department for its approval of a permanent dechlorination system or an alternative disinfection system either of which shall be designed to achieve compliance with the coliform and residual chlorine limits in the permit.

- b. Within sixty (60) days after the Department's approval of design plans, submitted pursuant to 5.11a; the Permittee shall award the contract to implement such plans.
- c. By April 1, 1997, the Permittee shall complete construction and be operating the wastewater treatment plant upgrades in accordance with all approved DEP and EPA permits.

5.12 The Department and its agents and employees shall have the right to enter upon the wastewater treatment plant, without notice, to monitor the Permittee's compliance with this CONSENT ORDER and all applicable environmental laws and regulations.

5.13 If, at any time, there exists at the wastewater treatment plant a condition that results in a threat to the public health, safety, or the environment, the Department may seek any relief it deems appropriate.

VI. FORCE MAJEURE

6.1 If any event occurs which delays or will delay a performance date established by this Consent Order, which event was beyond the control and without the fault of the Permittee and any entity it controls, including its contractors and consultants, and which event could not have been prevented or avoided by the exercise of due care, foresight, or due diligence on the part of the Permittee or any entity it controls, including its contractors and consultants, the Permittee shall immediately, and in any event within fifteen (15) days of such occurrence, notify the Department in writing of the anticipated length of the delay, the cause of the delay and the steps or measures to be taken to prevent or minimize the delay, including a timetable by which the Permittee intends to implement such steps or measures. Upon receiving the approval of the Department, the Permittee shall implement such steps or measures as are approved by the Department to avoid or

minimize any delay. Nothing in this Paragraph shall excuse any noncompliance by the Permittee with the provisions of this Consent Order.

6.2 If the Permittee notifies the Department of the occurrence of an event which delays or will delay a performance date established by this Consent Order, and if the Permittee otherwise complies with the requirements of Paragraph 6.1 of this Section, and if the Department determines that the delay has been or will be caused by circumstances beyond the control and without the fault of the Permittee, or any entity it controls, including its contractors and consultants, and can not or could not have been overcome by the exercise of due diligence, due care or foresight, the Department shall, pursuant to its sole discretion, extend the time for performance hereunder for a period of time equal to the length of the delay.

6.3 If the Permittee disagrees with the Department's determination pursuant to Paragraph 6.2 of this Section, and if the parties are unable to reach an agreement that the delay has been or will be caused by circumstances beyond the control and without the fault of the Permittee or any entity it controls, including its contractors and consultants, and can not or could not have been overcome by the exercise of due diligence, due care or foresight by the Permittee or any entity it controls, including its contractors and consultants, then subject to the provisions of Article IX the matter may be submitted by any party to the Massachusetts Superior Court for resolution. If the Court determines that the delay has been or will be caused by circumstances beyond the control and without the fault of the Permittee and any entity controlled by the Permittee, including its consultants and contractors, and that the delay can not or could not have been overcome by the exercise of due care, foresight, or due diligence by the Permittee or any entity controlled by the Permittee, including its consultants and contractors, stipulated penalties shall not be due for the period of time the delay continues due to circumstances beyond the control and without the fault of the Permittee.

6.3 In any proceeding pursuant to Paragraph 6.3 of this Section, the Permittee shall bear the burden of proving: 1) that the delay has been or will be caused

by circumstances beyond the control and without the fault of the Permittee and any entity controlled by the Permittee, including its consultants and contractors; 2) and that neither the Permittee, nor any entity controlled by the Permittee, including its contractors and consultants, could have prevented or avoided such delay by the exercise of due care, foresight, or due diligence on the part of the Permittee or any entity controlled by the Permittee, including its contractors and consultants; and 3) the number of days of the delay caused by such circumstances.

- 64 Unanticipated or increased costs or expenses associated with the implementation of the actions required under this Consent Order or changed financial circumstances shall not, for the performance of the actions required by this Consent Order, be considered circumstances beyond the control and without the fault of the Permittee.

VII. STIPULATED PENALTIES

- 7.1 In the event the Permittee, or its employees, agents, or contractors, violates the timeframes for compliance set out in Attachment 1 or the requirements of Section 5.11, herein, the Permittee agrees to pay stipulated penalties in accordance with the following schedule:
- a. For each day of each violation of schedules set forth above in Section V and any schedules submitted by the Permittee and approved by the Department pursuant to Attachment I and this Consent Order, I, the Permittee shall pay stipulated penalties as follows:

| <u>Period of Violation</u> | <u>Penalty per day</u> |
|----------------------------|------------------------|
| 1st through 30th day | \$ 500 per day |
| 31st through 90th day | \$1000 per day |
| 91st day and thereafter | \$2000 per day |

- 7.2 All stipulated penalties shall be paid without demand before the fifteenth (15th) day of the month following the month in which the violations occurred by means of a certified check payable to the Commonwealth of Massachusetts Environmental Challenge Fund at the following address:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
One Winter Street
Boston, MA 02211

- 7.3 The name of the Permittee and the Administrative Consent Order reference number shall be printed clearly on the face of the check.

VIII. ADMINISTRATIVE PENALTIES

- 8.1 Failure by the Permittee to comply with any Department rule or regulation, except as otherwise specifically provided for in this Consent Order, may result in the assessment of administrative penalties by the Department in the amount of up to twenty-five thousand dollars (\$25,000) per day, per violation, in accordance with M.G.L. c. 21 § 42 and/or M.G.L., C. 21A §16.

IX. DISPUTE RESOLUTION

- 9.1 The Department and the Permittee shall attempt to resolve informally any disagreements concerning implementation of this Consent Order or any work required hereunder.
- 9.2 If the Permittee objects to any written approval, disapproval, claim, demand or determination of the Department (including a determination pursuant to the force majeure section of this Consent Order made in accordance with this Consent Order), the Permittee shall notify the Department in writing of its specific objections within seven (7) days of receipt of the Department's writing. In response, the Department shall set a date for the completion of dispute resolution and notify the Permittee of such date either by writing, facsimile or oral communication followed by a writing. Such date shall be no sooner than seven (7) days after the Department receives the written notice of objections, and no later than thirty (30) days after such receipt of notice, or such longer period as the parties hereto agree upon in writing.
- 9.3 The Permittee and the Department then shall attempt to resolve the objections and may engage in discussions, meetings, fact-finding and any other activities which facilitate resolution of

the objections. At any time, the Department may require the Permittee to submit to the Department a more complete written statement of its objections and the factual and legal basis for such objections.

9.4 After the dispute has been resolved or the date for completion of dispute resolution has passed, the Regional Director, or his/her designee, shall issue a written statement setting forth the agreement or his or her findings and the final determination in the matter. Such agreement or determination will be effective upon the receipt of such written statement by the Permittee.

9.5 The Permittee shall undertake all the work required by the agreement or the Department's final determination. Failure of the Permittee to undertake such work shall be a violation of this Consent Order.

9.6 Entering objections pursuant to this section shall not be cause for delay of the implementation of any work not specifically the subject of the written notice of objections. Deadlines for other work which is specifically the subject of the written notice of objections shall be extended an amount of days equal to the number of days from the date of the Department's initial writing to the date of the agreement or the Department's final determination.

X. WAIVER OF RIGHTS TO ADJUDICATORY PROCESS

10.1 The Permittee consents to the Department's issuance of this Consent Order and admits to the jurisdiction and authority of the Department to issue such Consent Order. The Permittee understands, and hereby waives its rights to an adjudicatory hearing before the Department, to a tentative decision by the Department, and to judicial review, rehearing, re-argument and reconsideration by courts of competent jurisdiction of the issuance and/or the terms of this Consent Order. The Permittee also hereby waives its rights to notice of rights to administrative process or judicial review in connection with this ACO.

XI. NON WAIVER

- 11.1 Failure on the part of the Department to complain of action or non-action on the part of the Permittee shall not constitute a waiver by the Department of any of its rights hereunder. Furthermore, no waiver by the Department of any provision herein shall be construed as a waiver of any other provision herein.

XII. SEVERABILITY

- 12.1 If any term or provision of this Consent Order or the application thereof, to any person or circumstance, shall, to any extent, be invalid or unenforceable, the remainder of this Consent Order, and the application thereof, shall not be affected thereby, and each remaining term and provision shall be valid and enforceable to the fullest extent permitted by law.

XIII. SUBMISSIONS

- 13.1 Submissions required by this Consent Order shall be made in writing to the following:

TO THE DEPARTMENT:

George Crombie
Regional Director, SERO
Department of Environmental Protection
20 Riverside Drive
Lakeville, Massachusetts 02347

Jeffrey Gould
Water Pollution Control Section Chief
Department of Environmental Protection
20 Riverside Drive
Lakeville, Massachusetts 02347

AND

David A Fierra, Director
Water Management Division
U.S. Environmental Protection Agency
P.O. Box 8127
Boston, Massachusetts 02108

TO THE TOWN:


Rockland Sewer Commission
P.O. Box 330
Rockland, MA 02370

III. EFFECTIVE DATE

13.1 This Consent Order shall be effective on the date signed by the Department.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:



George Crombie, Regional Director (SERO)

Date:

7/11/95

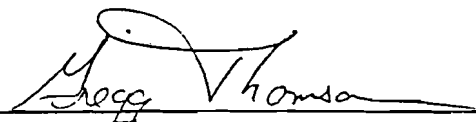
TOWN OF ROCKLAND

SEWER COMMISSION

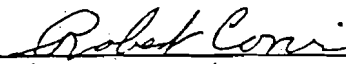
By:



Michael McDonald, Chairman



Gregg Thompson



Robert Corvi

Date:

July 7 1995

ATTACHMENT I
SCOPE OF WORK

The Scope of Work (SOW) shall include, at a minimum, the following items.

I. WATER SUPPLY

The permittee shall prepare and submit a written technical report ("Report") to the DEP within twelve (12) months of DEP's approval of the SOW with a copy to the EPA which evaluates the drinking water supply's corrosion control program and the need to implement new, additional and/or revised treatment if the evaluation suggests that the existing treatment is not considered optimal. The Report shall also include specific tasks to be performed and a schedule for the implementation of such tasks. As part of the evaluation, the permittee should address, but not be limited to, the following:

- A. Determination of the percent of copper in the wastewater that is attributed to the public water supply.
- B. An evaluation (consisting of a desktop and/or demonstration study) of various corrosion technologies currently available, including at a minimum, each of the following, applied separately and where appropriate in combination with one another to achieve optimal corrosion control for that particular water system:
 - (1) Alkalinity and pH adjustment
 - (2) Calcium hardness adjustment; and
 - (3) Phosphate or silicate based corrosion inhibitors.
- C. An assessment of how these various treatment options may impact certain water quality parameters (e.g. lead, copper, alkalinity, pH, calcium, trihalomethanes, disinfection byproducts, etc...) within the water system.
- D. Identification of chemical, physical and other feasibility constraints which may limit the application of a particular treatment option for the given system.

It should be noted that some of these items may have already been addressed under the requirements of EPA's Lead and Copper Rule (40 CFR 141.80 thru 141.82) for public water systems (EPA's Lead and Copper Rule Guidance Manual, Volume II: Corrosion Control Treatment).

II. PRETREATMENT

A. LOCAL LIMITS EVALUATION

The Permittee shall prepare and submit a written technical report ("Report") to the DEP within twelve (12) months of DEP's approval of the SOW with a copy to the EPA which evaluates the existing local limit for copper and the need to revise the limit if the evaluation reveals that more stringent limits are necessary. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activate sludge inhibition, worker health and safety and collection system concerns. Justifications and conclusions should be based on actual plant data if available and should be included in the report. The Permittee shall carry out the local limits evaluation in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (Dec., 1987). The Report shall also include specific tasks to be performed and a schedule for the implementation of such tasks.

B. TECHNOLOGY/PRETREATMENT EVALUATION

The Permittee shall evaluate, or require each of the POTW's Significant Industrial Users (SIUs) to evaluate, industry-specific treatment technology(ies) necessary to assure compliance with the local limits calculated for the pollutants of concern in A. above. The evaluation of the industry-specific treatment technology(ies) need at **each SIU facility** shall include but not be limited to the following information:

- (1) The name and location of the site.
- (2) A general description of the major products manufactured and unit operations carried out at the facility.
- (3) An evaluation of the wastewater characteristics discharged to the POTW (including sampling data performed on the final discharge(s) to the sewer(s)).
- (4) A thorough discussion of all treatment technology options which have potential to significantly reduce the levels of the pollutants of concern

including those which assure compliance with the calculated local limits for the identified pollutants of concern.

- (5) An identification of, and rationale for, the recommended method of treatment including a discussion of the technical and economic feasibility. This shall also include an evaluation as to the expected levels in the final effluent the selected technology will achieve.
- (6) A list of each alternative technology considered but not selected. For each alternative rejected explain the rationale.
- (7) A timetable for making reasonable and measurable progress towards the installation of the chose treatment technology.

C. POLLUTION PREVENTION EVALUATION

In addition to the technology/pretreatment evaluation required in B. above, the POTW shall develop, or require each of the POTW's SIUs to develop, a Waste Minimization Plan for the purpose of further reducing the copper loadings from each SIU through pollution prevention/source reduction alternatives. At a minimum, the Scope of Work for the Waste Minimization Plan shall, for each SIU, include but not be limited to the following information:

- (1) The name and location of the site.
- (2) A general description of the major products manufactured and unit operations carried out at the facility.
- (3) A process flow diagram of the unit operations focusing on quantity and type of hazardous wastes, raw materials, and final products produced at the site.
- (4) An evaluation of source reduction approaches available to the generator which are potentially viable for the reduction of copper in the facility's wastestream. The evaluation shall consider each of the following areas:
 - (a) Raw materials input changes
 - (b) Operational process changes
 - (c) Product quality changes
 - (d) Administrative steps taken to reduce copper including but not limited to:

- (1) Inventory control
- (2) Employee Award Programs
- (3) In-house Policies
- (4) Employee Training
- (5) Corporate or Management Committee
- (6) Other Programs or Approaches

The evaluation shall also consider and discuss the following for each approach evaluated:

- (a) Expected change in the amount of copper generated
 - (b) Technical feasibility
 - (c) Employee health and safety implications
- (5) A specification of and rationale for source reduction measures selected which will be implemented by the generator.
 - (6) An evaluation of the effects of the chosen source reduction methods on emissions and discharges to other media.
 - (7) A list of each alternative considered but not selected for a detailed evaluation as a potentially viable source reduction approach. For each alternative rejected explain the generator's rationale.
 - (8) A timetable for making reasonable and measurable progress towards implementing the selected source reduction measures. It shall also include an implementation schedule for completing the evaluation of potentially viable source reduction approaches.

III. WASTEWATER TREATMENT PLANT

The Permittee shall prepare and submit to the DEP within twelve (12) months of DEP's approval of the SOW and a copy to the EPA a technical report ("Report") which evaluates the ability of the wastewater treatment facility through operational and/or design changes (i.e. additional treatment) to remove the influent copper to the degree necessary to comply with its Permit's effluent limit. The Report shall also include specific tasks to be performed and a schedule for the implementation of such tasks. The report shall, at a minimum, include the following:

- A. A quality assurance/quality control program to ensure that proper sampling and analytical techniques are being employed to ensure that the results are accurate at the levels required by the permit's effluent limits (i.e. clean techniques are used and the analytical equipment used is capable of reaching the detection levels required by the permit's effluent limit).
- B. An evaluation, including monitoring where necessary, of all sources of copper entering the POTW, including but not limited to the following:
 - (1) Influent
 - (2) Wastes transported to the POTW (i.e. septage, leachate, industrial/commercial wastes, etc.)
 - (3) Chemicals used at the POTW
- C. A monitoring program to track copper removal through the various unit processes at the POTW (i.e. influent, primary effluent, secondary effluent, final effluent).
- D. An evaluation (including monitoring) of the impact of sidestreams (i.e. sludge processing) on the copper content of the final effluent.
- E. An evaluation of the POTW's ability to achieve greater removals of copper through operational changes, including but not limited to chemical addition, and/or installation of additional treatment.
- F. Development of capital and operational costs for implementing any improvements necessary at the POTW to reduce the copper content in the effluent.
- G. Development of a schedule for implementing any improvements necessary at the POTW to reduce the copper content in the effluent.

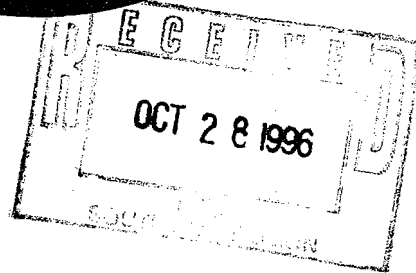
Exhibit I: Letter dated October 25, 1996 to DEP from PSG re: October Rain Event –
High Flows.

October 25, 1996



Your water and wastewater partner

Jeffrey Gould, Section Chief
Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347



RE: Rockland, MA Wastewater Plant
NPDES Permit No. MA0101923 - Discharge 001A

October 20-22 Rain Event - High Flows

Dear Mr. Gould:

As stated in 314 CMR Department of Water Pollution Control Regulations Section 12.07[3] and 314 CMR 3.00 Massachusetts Surface Water Discharge Program 3.19[20][e], I am writing to inform you of the conditions experienced at the Rockland Wastewater Treatment Facility from late Sunday October 20th through Tuesday October 22nd.

A severe rain storm caused heavy rainfall to hit the Rockland area. This storm dumped approximately 8.5 inches of rainfall causing severe flooding and ground saturated conditions in the town. The facility experienced flows in excess of the peak design capacity of 6.0 MGD for several days.

The influent flows to the facility rose to over 14 million gallons at peak times Sunday and Monday. This is estimated based on the additional equipment that was brought in to handle the pumping operations. A total of six additional pumps were used: three six-inch trash pumps, two four-inch trash pumps, and one six-inch submersible pump. A total of more than 1800 feet of discharge hoses were set up to maintain pumping operations. Also, a total of approximately one million gallons of off-line tanks were filled to capacity for flow equalization purposes and for partial treatment of the incoming wastewater that could not be fully treated.

We were able to pump through the facility at a rate of nearly 8 MGD and have this wastewater fully treated with all activated sludge systems being maintained. The remaining wastewater could not be fully treated with secondary treatment due to

Professional Services Group, Inc.

Rockland

P.O. Box 247

Rockland, Massachusetts 02370

(617) 878-1863 Fax: (617) 871-1909

limitations in our influent pump station capacity. This excess wastewater was pumped to meet our discharge at the outfall reaeration steps. Chlorination of the facility's effluent was raised to insure for adequate disinfection.

There was a brief period on Monday morning when flows bubbled out of the manhole at the plant entrance due to surcharged conditions. This occurred on Monday Oct. 21st between the hours of 11:00 AM and 2:00 PM.

Bisulfite addition was suspended for three days so that the chlorine added could be utilized for disinfection of all flows, therefore we are reporting three daily chlorine residual exceedences.

The DEP hotline number was called on Sunday night at 8:00 PM to leave word that a partial bypass condition was to occur and a period of reduced treatment to follow. Mr. Jay Naparstek was informed of the conditions on Sunday evening as well as Mr. Joseph Shepherd of the Southeast Office on Monday Oct. 21st. Total suspended solids data collected for Oct 20th and 22nd were 19.8 and 9.2 mg/L and were in compliance with our NPDES permit. BOD data is still pending completion of the tests at this time. Fecal coliform data collected also indicated process compliance.

A survey of the town found an excessive amount of surface flooding due to poor drainage and saturated conditions. Many areas has manholes submerged under a few feet of water for several hours.

Full treatment operations without any bypassing of flows were resumed at 9:00PM Tuesday Oct. 22nd.

The flows for the Oct. 19th through Oct. 24th are as follows:

| | | |
|--|-----------------|-----------------------|
| Oct. 19 th - Max. 2.7MG | Min. 1.2MG | Total - 1.97MG actual |
| Oct. 20 th - Max. 12.5MG est. | Min. 1.15MG | Total - 9 MG est. |
| Oct. 21 st - Max. 14+MG est. | Min. 8+ MG est. | Total - 10+ MG est. |
| Oct 22 nd - Max. 9 MG est. | Min. 7 MG est. | Total - 8 MG est. |
| Oct 23 rd - Max. 6.5 MG est. | Min. 5.6 MG | Total - 6 MG est |
| Oct 24 th - Max. 5.85 MG | Min. 4.55 MG | Total - 4.6 MG actual |

Should you need any additional information, please don't hesitate to call me. In advance, thank you.

Very truly yours,



Aram Varjabedian, Project Manager
Professional Services Group

Exhibit J: Monthly Discharge Monitoring Report for March, 2005



Town of Rockland
Post Office Box 330
MASSACHUSETTS 02370
SEWER COMMISSION

Tel. (781) 878-1964
Fax (781) 871-1909

William Stewart, *Chairman*
Walter Simmons, *Vice-Chairman*
Gerald Esposito, III, *Commissioner*

April 11, 2005

Jeffrey Gould
South Coastal Watershed
Department of Environmental Protection
20 Riverside Drive
Lakeville, Ma 02347

RE: March 2005 Discharge Monitoring Report
NPDES Permit # MA0101923 001A

Dear Mr. Gould:

Enclosed please find the March 2005 Monthly Discharge Monitoring Report for the Rockland Wastewater Treatment Facility. All permit parameters were achieved during this reporting period except for the following:

- Monthly Daily Average Total Flow of 2.5 MGD exceeded with a flow of 3.7 MGD
- Total Residual Chlorine, - Daily Maximum of 21.4 ug/L exceeded on 3/28
- BOD, - Daily Maximum of 30 mg/L exceeded on 3/28
- BOD, - lbs/day Daily Maximum of 626 lbs/day exceeded on 3/28 and Monthly Average of 417 lbs/day exceeded
- TSS, - lbs/day Daily Maximum of 626 lbs/day exceeded on 3/28

High flow conditions (inflow, infiltration and snow melt) due to heavy rainfall (approximately 4 inches) from 3/28 to 3/29 caused influent plant flows to exceed the peak design flow of 6.0 MGD. As per the conditions set forth in the NPDES permit; fecal coliform, settleable solids, and total residual chlorine samples were collected and analyzed every four hours starting on 3/29 from 2:30am to 10:30pm. The High Flow Management procedure was reviewed and approved by Dan Granz (Environmental Engineer) of the EPA and Dave Burns of the DEP who were on sight during this high flow event.

The sodium bi-sulfite addition was shut off once sewage flows filled all of the available off-line plant tanks and auxiliary pumping to the outfall was necessary. The chlorine residual was above the TRC limit in our discharge permit from 10:30pm on 3/29 until 3:45am on 3/30. The facility did not have any fecal coliform or settleable solids exceedences during these periods.

Notifications by telephone were made to both the EPA and DEP when plant conditions were exceeding the peak design flow and partial treatment was to occur. An effluent quality report was generated and faxed to your office on 4/6/05. A copy of each report is included with this submittal.

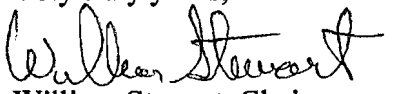
On March 28, 2002 the Town of Rockland received an amended Administrative Order that requires the Town annually report measures taken to achieve compliance with the effluent limitations for copper contained in the NPDES permit and interim effluent limitations for copper. Specific conditions are outlined in the A.O. for year one with an annual report due each November. We continue to evaluate copper removal and are attempting to achieve full compliance through chemical precipitation. The interim effluent limits for daily maximum copper is 18.7 ug/L and monthly average copper concentration is 13.2 ug/L. An asterisk on the DMR denotes that copper is still an Administrative Order with the interim effluent copper limits. The daily maximum copper for this reporting period was 13.0 ug/L and the monthly average was 9.1 ug/L.


Please note that we are still performing a trial with ferrous chloride and polymer as the chemical coagulants to reduce the level of copper discharging from the WWTF and are currently evaluating all of the results.

The Rockland Aquarion Operating staff at the wastewater facility performed all laboratory analytical work during the month of March with the exception of Copper, BOD, TSS, Nitrogen Ammonia, and Total Phosphorus which was performed by Rhode Island Analytical Laboratory of Warwick, RI.

Should you need any additional information, please do not hesitate to call me. In advance, thank you.

Very truly yours,


William Stewart, Chairman
Rockland Sewer Commission


Anthony Olivadesa, Project Manager
Aquarion Operating Services

PERMITTEE NAME/ADDRESS (Include Facility Name/Location (D/Offices))
 NAME TOWN OF ROCKLAND SEWER COMMISSN
 ADDRESS P O BOX 330
 ROCKLAND
 MA 02370

FACILITY ROCKLAND WWTP
 LOCATION ROCKLAND
 ATTN: ROBERT CORVI, CHAIRMAN, S.C.
 MA 02370

MAJOR (SUBR S)
 F - FINAL
 SANITARY & INDUSTRIAL

*** NO DISCHARGE ***
 NOTE: Read instructions before completing this form.

| PARAMETER | QUANTITY OR LOADING | | | QUALITY OR CONCENTRATION | | | NO. EX | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|--|---------------------------|---------|---------|--|---------|---------|-----------|-----------------------|-------------|
| | AVERAGE | MAXIMUM | UNITS | MINIMUM | AVERAGE | MAXIMUM | | | |
| BOD, 5-DAY (20 DEG. C) | 429 | 1843 | (26) | 11 | 12 | (19) | 3 | 02/07 | 24 |
| 00310 1 1 0 | 417 | 626 | LB/S/DY | 20 | 20 | MG/L | | TWICE/ WEEK | COMP 24 |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | 7.0 | 7.4 | (12) | 0 | 01/01 | GR |
| PH | ***** | ***** | ***** | ***** | ***** | ***** | | DAILY | GRAB |
| 00400 1 0 0 | ***** | ***** | ***** | 6.5 | 8.3 | SU | | DAILY | GRAB |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | 7 | 26 | (19) | 1 | 02/07 | 24 |
| SOLIDS, TOTAL SUSPENDED | 288 | 1409 | (26) | 20 | 20 | MG/L | | TWICE/ WEEK | COMP 24 |
| 00530 1 1 0 | 417 | 526 | LB/S/DY | 20 | 20 | MG/L | | TWICE/ WEEK | COMP 24 |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | 0.0 | 0.1 | (25) | 0 | 01/01 | GR |
| SOLIDS, SETTLEABLE | ***** | ***** | ***** | 0.1 | 0.3 | ML/L | | DAILY | GRAB |
| 00545 1 0 0 | ***** | ***** | ***** | 2.4 | 2.8 | (19) | 0 | 02/07 | 24 |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | REPORT | REPORT | MG/L | | TWICE/ WEEK | COMP 24 |
| NITROGEN, AMMONIA TOTAL (AS N) | ***** | ***** | ***** | 9.1 | 13.0 | (28) | 0 | 04/30 | 24 |
| 00610 1 2 0 | ***** | ***** | ***** | 13.2 | 18.7 | UG/L | | ONCE/ MONTH | COMP 24 |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| COPPER, TOTAL (AS CU) | 3.7 | ***** | (03) | ***** | ***** | ***** | 1 | 01/99 | RC |
| 01042 1 0 2 ADMIN | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| FLOW, IN CONDUIT OR THRU TREATMENT PLANT | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| 50050 1 0 0 | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| EFFLUENT GROSS VALUE | ***** | ***** | ***** | ***** | ***** | ***** | | CONT IN RECORD | RC |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER | Signature of Robert Corvi | | | Signature of William Stewart | | | TELEPHONE | | |
| Typed Name | Robert Corvi | | | William Stewart | | | DATE | | |
| TYPED OR PRINTED | Rockland Sewer Commission | | | Signature of Principal Executive Officer | | | DATE | | |
| NAME/TITLE PRINCIPAL EXECUTIVE OFFICER | William Stewart, Chairman | | | Signature of Principal Executive Officer | | | DATE | | |
| TYPED OR PRINTED | Rockland Sewer Commission | | | Signature of Principal Executive Officer | | | DATE | | |

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) * = A-D Condition - Interim Copper Limits
 REPORT MAXIMUM, MINIMUM, AVERAGE DAILY RATES AND TOTAL FLOWS FOR EACH OPERATING DATE WITH DMR. SEE 001B
 FOR MET DATA. TRC: VALUE BELOW 50 UG/L SHALL BE REPORTED AS 0. VALUE INDICATED BY: Rick Kotand
 TYPED OR PRINTED
 COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) * = A-D Condition - Interim Copper Limits
 REPORT MAXIMUM, MINIMUM, AVERAGE DAILY RATES AND TOTAL FLOWS FOR EACH OPERATING DATE WITH DMR. SEE 001B
 FOR MET DATA. TRC: VALUE BELOW 50 UG/L SHALL BE REPORTED AS 0. VALUE INDICATED BY: Rick Kotand

NAME TOWN OF ROCKLAND SEWER COMSSSN
 ADDRESS P O BOX 330
 ROCKLAND MA 02370

MA0101923
 PERMIT NUMBER

001 A
 DISCHARGE NUMBER

MAJOR (SUBR S)
 F - FINAL
 SANITARY & INDUSTRIAL

FACILITY ROCKLAND WWTP
 LOCATION ROCKLAND MA 02370
 ATTN: ROBERT CORVI, CHAIRMAN, S. C.

| MONITORING PERIOD | | | | | | |
|-------------------|----|-----|----|------|----|-----|
| YEAR | MO | DAY | TO | YEAR | MO | DAY |
| 05 | 03 | 01 | | 05 | 03 | 31 |

*** NO DISCHARGE 1-1 ***
 NOTE: Read instructions before completing this form.

| PARAMETER | SAMPLE MEASUREMENT / PERMIT REQUIREMENT | QUANTITY OR LOADING | | | QUALITY OR CONCENTRATION | | | | NO. EX | FREQUENCY OF ANALYSIS | SAMPLE TYPE |
|-----------------------------------|---|---------------------|---------|-------|--------------------------|----------|----------|----------|--------|-----------------------|-------------|
| | | AVERAGE | MAXIMUM | UNITS | MINIMUM | AVERAGE | MAXIMUM | UNITS | | | |
| CHLORINE, TOTAL RESIDUAL | SAMPLE MEASUREMENT | ***** | ***** | | 0.0 | ***** | 1230 | (28) | 1 | 36/31 | GR |
| 50060 1 0 0 | PERMIT REQUIREMENT | ***** | ***** | *** | 12.4 | ***** | 21.4 | UG/L | | DAILY | GRAB |
| EFFLUENT GROSS VALUE | | | | **** | MD AVG | | DAILY MX | UG/L | | | |
| COLIFORM, FECAL GENERAL | SAMPLE MEASUREMENT | ***** | ***** | | 4 | 3 | 111 | (13) | 0 | 03/07 | GR |
| 74055 1 0 0 | PERMIT REQUIREMENT | ***** | ***** | *** | 200 | 400 | 400 | #/100 ML | | THREE/ | GRAB |
| EFFLUENT GROSS VALUE | | | | **** | MD GED | WKLY GED | DAILY MX | 100ML | | WEEK | |
| BOD, 5-DAY PERCENT REMOVAL | SAMPLE MEASUREMENT | ***** | ***** | | 91.5 | ***** | ***** | (23) | 0 | 01/30 | CA |
| B1010 K 0 0 | PERMIT REQUIREMENT | ***** | ***** | *** | B5 | ***** | ***** | PER/0 | | ONCE/ | CALCT |
| PERCENT REMOVAL | | | | **** | MD AVG | | | CENT | | MONTH | |
| SOLIDS, SUSPENDED PERCENT REMOVAL | SAMPLE MEASUREMENT | ***** | ***** | | 94.5 | ***** | ***** | (23) | 0 | 01/30 | CA |
| B1011 K 0 0 | PERMIT REQUIREMENT | ***** | ***** | *** | B5 | ***** | ***** | PER/0 | | ONCE/ | CALCT |
| PERCENT REMOVAL | | | | **** | MD AVG | | | CENT | | MONTH | |
| | SAMPLE MEASUREMENT | | | | | | | | | | |
| | PERMIT REQUIREMENT | | | | | | | | | | |
| | SAMPLE MEASUREMENT | | | | | | | | | | |
| | PERMIT REQUIREMENT | | | | | | | | | | |
| | SAMPLE MEASUREMENT | | | | | | | | | | |
| | PERMIT REQUIREMENT | | | | | | | | | | |

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 William Stewart, Chairman
 Rockland Sewer Commission
 TYPED OR PRINTED

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 knowing violations.

William E. Stewart
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE 781-878-1964
 DATE 05 04 11
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 REPORT MAXIMUM, MINIMUM, AVERAGE DAILY RATES AND TOTAL FLOWS FOR EACH OPERATING DATE WITH DMR. SEE 001B FOR WET DATA. TRC: VALUE BELOW 50 UG/L SHALL BE REPORTED AS 0. Validated by: *Robert...*

EFFLUENT QUALITY REPORT

Date: April 6, 2005

ROCKAND WPCF
P.O. BOX 330
ROCKLAND, MA 02370

NPDES PERMIT # MA0101923
OUTFALL # 001

PROJECT MANAGER: ANTHONY OLIVADESA (AQUARION OPS)

MONITORING PERIOD: MARCH 2005

PARAMETERS EXCEEDED:

Part I.A.4.c (1) providing adequate notice to the Director for any anticipated impact of change on the quantity or quality of the effluent discharged from the POTW. Higher than design influent and effluent wastewater flows and the discharge of partially treated sewage on 3/29/05.

EFFLUENT:

Flow, MGD – Average Monthly Flow of 2.5 MGD exceeded.

Actual Results: 3.7 MGD

Total Residual Chlorine (TRC), ug/L – Daily Maximum of 21.4 ug/L exceeded on 3/29/05.

Actual Results: 1230 ug/L

CAUSE OF EXCEEDENCE / CORRECTIVE ACTIONS:

High flows due to over 3.7 inches of rainfall from 3/28 to 3/29. The total rainfall for this reporting period was over 5.5 inches. Inflow, infiltration and snow melt caused influent plant flows to exceed peak design flow of 6.0 MGD and the High Flow Management Plan was implemented during this period. Peak flows exceeded 7.0 MG on both 3/28 and 3/29. Once all empty tanks at the facility were filled using two 6-inch trash pumps the primary treated flow was chlorinated and redirected to the outfall per the High Flow Management Plan and all sampling procedures were followed per the NPDES permit. The high flow management procedure was reviewed and approved by Dan Granz (Environmental Engineer) of the EPA and Dave Burns of the DEP who were on sight during this high flow event.

EFFLUENT QUALITY REPORT

Date: April 6, 2005

ROCKAND WPCF
P.O. BOX 330
ROCKLAND, MA 02370

NPDES PERMIT # MA0101923
OUTFALL # 001

PROJECT MANAGER: ANTHONY OLIVADESA (AQUARION OPS)

MONITORING PERIOD: MARCH 2005

PARAMETERS EXCEEDED:

EFFLUENT:

BOD, mg/L – Daily maximum limit of 30 mg/L exceeded on 3/28/05.

Actual Results: 34 mg/L

BOD, lbs/day – Daily maximum of 626 lbs/day exceeded on 3/28/05.

Actual Results: 1843 lbs/day

BOD, lbs/day – Monthly average of 417 lbs/day exceeded.

Actual Results: 429 lbs/day

TSS, lbs/day – Daily maximum of 626 lbs/day exceeded on 3/28/05.

Actual Results: 1409 lbs/day

CAUSE OF EXCEEDENCE / CORRECTIVE ACTIONS:

The BOD and TSS exceedences were due to high flows (over 3.7 inches of rainfall) from 3/28 to 3/29. Inflow, infiltration and snow melt caused the influent plant flows to exceed the peak design flow of 6.0 MGD and the High Flow Management Plan was implemented during this period.

Winter DMR Data Check
 Rockland
 3/1/2005 TO 3/31/2005

| Date | FLOW-TOT MGD | BOD-EFF MG/L | BOD-EFF-WK MG/L | BOD-EFF LBS | BOD-EFF-WK LBS | BOD-RAW-HD MG/L | BOD-RAW-HD LBS | BOD-RAW-HD LBS | PH MAX SU |
|-----------|-----------------|-----------------|--------------------|----------------|-------------------|--------------------|-------------------|-------------------|--------------|
| 3/1/2005 | 2.744 | | | | | | | | 7.1 |
| 3/2/2005 | 2.583 | 8.1 | | 174 | | 160 | 3,447 | 3,447 | 7.2 |
| 3/3/2005 | 2.548 | | | | | | | | 7.1 |
| 3/4/2005 | 2.436 | | | | | | | | 7.2 |
| 3/5/2005 | 2.531 | | 8.9 | | 196 | | | | 7.1 |
| 3/6/2005 | 2.709 | | | | | | | | 7.2 |
| 3/7/2005 | 2.685 | 8.9 | | 155 | | 190 | 4,255 | 4,255 | 7.2 |
| 3/8/2005 | 3.558 | | | | | | | | 7.2 |
| 3/9/2005 | 3.542 | 9.0 | | 266 | | 170 | 5,022 | 5,022 | 7.0 |
| 3/10/2005 | 3.414 | | | | | | | | 7.1 |
| 3/11/2005 | 3.205 | | | | | | | | 7.0 |
| 3/12/2005 | 3.622 | | 8.0 | | 210 | | | | 7.1 |
| 3/13/2005 | 3.795 | | | | | | | | 7.1 |
| 3/14/2005 | 3.537 | 3.0 | | 88 | | 82 | 2,419 | 2,419 | 7.1 |
| 3/15/2005 | 3.543 | | | | | | | | 7.0 |
| 3/16/2005 | 3.579 | 5.1 | | 152 | | 120 | 3,582 | 3,582 | 7.1 |
| 3/17/2005 | 3.563 | | | | | | | | 7.0 |
| 3/18/2005 | 3.447 | | | | | | | | 7.2 |
| 3/19/2005 | 3.555 | | 4.1 | | 120 | | | | 7.2 |
| 3/20/2005 | 3.678 | | | | | | | | 7.2 |
| 3/21/2005 | 3.444 | 10.0 | | 287 | | 140 | 4,021 | 4,021 | 7.1 |
| 3/22/2005 | 3.452 | | | | | | | | 7.2 |
| 3/23/2005 | 3.210 | 14.0 | | 375 | | 150 | 4,016 | 4,016 | 7.2 |
| 3/24/2005 | 3.050 | | | | | | | | 7.1 |
| 3/25/2005 | 4.192 | | | | | | | | 7.2 |
| 3/26/2005 | 3.598 | | 12.0 | | 331 | | | | 7.2 |
| 3/27/2005 | 3.502 | | | | | | | | 7.2 |
| 3/28/2005 | 6.500 | 34.0 | | 1,843 | | 88 | 4,770 | 4,770 | 7.1 |
| 3/29/2005 | 6.425 | | | | | | | | 7.1 |
| 3/30/2005 | 6.035 | | | | | | | | 7.4 |
| 3/31/2005 | 5.705 | 11.0 | | 523 | | 87 | 4,139 | 4,139 | 7.4 |
| Average | 3.658 | 11.2 | 8.2 | 429 | 214 | 132 | 3,963 | 3,963 | 7.1 |
| Minimum | 2.436 | 3.0 | 4.1 | 88 | 120 | 82 | 2,419 | 2,419 | 7.0 |
| Maximum | 6.500 | 34.0 | 12.0 | 1,843 | 331 | 190 | 5,022 | 5,022 | 7.4 |
| Geo Mean | 3.53 | 9.04 | 7.65 | 278.34 | 201.2 | 126.3 | 3888.94 | 3888.94 | 7.14 |

Rockland

3/1/2005 TO 3/31/2005

| Date | EFF-TSS MG/L | TSS-EFF-WK MG/L | TSS-EFF-LB LBS | TSS-EFF-WK LBS | SS-EFF ML/L | EFF-SS-WK ML/L | RAW-HD-TSS MG/L | Raw-HD-TSS LBS | NH3-EFF-WK MG/L | NH3-EFF MG/L |
|-----------|-----------------|--------------------|-------------------|-------------------|----------------|-------------------|--------------------|-------------------|--------------------|-----------------|
| 3/1/2005 | | | | | 0 | | | | | |
| 3/2/2005 | 4.3 | | 93 | | 0 | | 140 | 3,016 | | 1.50 |
| 3/3/2005 | | | | | 0 | | | | | |
| 3/4/2005 | | | | | 0 | | | | | |
| 3/5/2005 | | 5.0 | | 111 | 0 | 0 | | | 2.20 | |
| 3/6/2005 | | | | | 0 | | | | | |
| 3/7/2005 | 3.7 | | 83 | | 0 | | 180 | 4,031 | | 2.70 |
| 3/8/2005 | | | | | 0 | | | | | |
| 3/9/2005 | 5.3 | | 157 | | 0 | | 140 | 4,136 | | 1.80 |
| 3/10/2005 | | | | | 0 | | | | | |
| 3/11/2005 | | | | | 0 | | | | | |
| 3/12/2005 | | 4.5 | | 120 | 0 | 0 | | | 2.25 | |
| 3/13/2005 | | | | | 0 | | | | | |
| 3/14/2005 | 5.3 | | 156 | | 0 | | 140 | 4,130 | | 1.80 |
| 3/15/2005 | | | | | 0 | | | | | |
| 3/16/2005 | 4.0 | | 119 | | 0 | | 110 | 3,283 | | 2.80 |
| 3/17/2005 | | | | | 0 | | | | | |
| 3/18/2005 | | | | | 0 | | | | | |
| 3/19/2005 | | 4.7 | | 138 | 0 | 0 | | | 2.30 | |
| 3/20/2005 | | | | | 0 | | | | | |
| 3/21/2005 | 6.7 | | 192 | | 0 | | 140 | 4,021 | | 4.60 |
| 3/22/2005 | | | | | 0 | | | | | |
| 3/23/2005 | 2.0 | | 54 | | 0 | | 120 | 3,213 | | 0.99 |
| 3/24/2005 | | | | | 0 | | | | | |
| 3/25/2005 | | | | | 0 | | | | | |
| 3/26/2005 | | 4.4 | | 123 | 0 | 0 | | | 2.80 | |
| 3/27/2005 | | | | | 0 | | | | | |
| 3/28/2005 | 26.0 | | 1,409 | | 0 | | 130 | 7,047 | | 3.70 |
| 3/29/2005 | | | | | 0 | | | | | |
| 3/30/2005 | | | | | 0 | | | | | |
| 3/31/2005 | 7.0 | | 333 | | 0 | | 78 | 3,711 | | 1.60 |
| Average | 7.1 | 4.6 | 288 | 123 | 0 | 0 | 131 | 4,065 | 2.39 | 2.39 |
| Minimum | 2.0 | 4.4 | 54 | 111 | 0 | 0 | 78 | 3,016 | 2.20 | 0.99 |
| Maximum | 26.0 | 5.0 | 1,409 | 138 | 0 | 0 | 180 | 7,047 | 2.80 | 4.60 |
| Geo Mean | 5.47 | 4.62 | 168.33 | 122.44 | 0.1 | | 128.05 | 3942.9 | 2.38 | 2.15 |

| Date | CU-EFF-WK UG/L | AVG FINAL CU UG/L | CL2-MAX UG/L | FECAL #/100 ML | FEC EFF WK #/100 ML | M BOD % R % REM | MTSS % R % REM |
|-----------|-------------------|----------------------|-----------------|-------------------|------------------------|--------------------|-------------------|
| 3/1/2005 | | | 0.00 | 8 | | | |
| 3/2/2005 | | 13.0 | 0.00 | | | | |
| 3/3/2005 | | | 0.00 | | | | |
| 3/4/2005 | | | 0.00 | | | | |
| 3/5/2005 | 13.0 | | 0.00 | | 3 | | |
| 3/6/2005 | | | 0.00 | 2 | | | |
| 3/7/2005 | | | 0.00 | 8 | | | |
| 3/8/2005 | | | 0.00 | 6 | | | |
| 3/9/2005 | | 7.4 | 0.00 | | | | |
| 3/10/2005 | | | 0.00 | | | | |
| 3/11/2005 | | | 0.00 | | | | |
| 3/12/2005 | 7.4 | | 0.00 | | 5 | | |
| 3/13/2005 | | | 0.00 | 1 | | | |
| 3/14/2005 | | | 0.00 | 2 | | | |
| 3/15/2005 | | | 0.00 | 4 | | | |
| 3/16/2005 | | 11.0 | 0.00 | | | | |
| 3/17/2005 | | | 0.00 | | | | |
| 3/18/2005 | | | 0.00 | | | | |
| 3/19/2005 | 11.0 | | 0.00 | | 2 | | |
| 3/20/2005 | | | 0.00 | 1 | | | |
| 3/21/2005 | | | 0.00 | 6 | | | |
| 3/22/2005 | | | 0.00 | 3 | | | |
| 3/23/2005 | | 5.0 | 0.00 | | | | |
| 3/24/2005 | | | 0.00 | | | | |
| 3/25/2005 | | | 0.00 | | | | |
| 3/26/2005 | 5.0 | | 0.00 | | 3 | | |
| 3/27/2005 | | | 0.00 | 3 | | | |
| 3/28/2005 | | | 0.00 | 6 | | | |
| 3/29/2005 | | | 1,230.00 | 111 | | | |
| 3/30/2005 | | | 0.00 | | | | |
| 3/31/2005 | | | 0.00 | | | 91.48 | 94.54 |
| Average | 9.1 | 9.1 | 39.68 | 12 | 3 | 91.48 | 94.54 |
| Minimum | 5.0 | 5.0 | 0.00 | 1 | 2 | 91.48 | 94.54 |
| Maximum | 13.0 | 13.0 | 1,230.00 | 111 | 5 | 91.48 | 94.54 |
| Geo Mean | 8.53 | 8.53 | 1230. | 4.38 | 2.88 | 91.48 | 94.54 |

Validated by: *Nick Katab* 4-11-05
 Submitted By: *[Signature]*
 4-11-05

Daily Comments

- 3/28/2005 High Flows - Rain event of 3.74 inches recorded at facility. Estimated Total Plant Flow due to auxillary pumping.
- 3/29/2005 High flows-- permit lab only. Estimated Total Plant Flow due to auxillary pumping.
- 3/30/2005 Estimated Plant Flow due to auxillary pumping.
- 3/31/2005 Estimated Plant Flow due to auxillary pumping.

| WEATHER | | INFLUENT SEWAGE | | | GRIT & SCRNG | | CHLORINATION | | SETTLABLE SOLIDS | | | |
|---------|------|-----------------|------|-------|--------------|----------|--------------|----------|------------------|------|------|------|
| RAIN | TEMP | MAX | MIN | TOTAL | CF | NaOCI | DOSAGE | RESIDUAL | RAW | PRI | SEC | FIN |
| IN | F | MGD | MGD | MGD | | GALS/DAY | MG/L | ML/L | ML/L | ML/L | ML/L | ML/L |
| 03/01 | 0.08 | 48 | 3.30 | 1.80 | 2.744 | 0 | 41 | 0.00 | 10.0 | 0.0 | | 0.0 |
| 03/02 | 0.00 | 49 | 3.30 | 1.80 | 2.583 | 0 | 25 | 0.00 | 11.0 | 0.0 | | 0.0 |
| 03/03 | 0.00 | 48 | 3.20 | 1.70 | 2.548 | 0 | 37 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/04 | 0.00 | 48 | 3.20 | 1.70 | 2.436 | 0 | 28 | 0.00 | 8.0 | 0.0 | | 0.0 |
| 03/05 | 0.00 | 50 | 3.50 | 1.60 | 2.531 | 0 | 44 | 0.00 | 11.0 | 0.0 | | 0.0 |
| 03/06 | 0.00 | 50 | 3.70 | 1.60 | 2.709 | 0 | 28 | 0.00 | 10.0 | 0.0 | | 0.0 |
| 03/07 | 0.00 | 51 | 3.40 | 1.60 | 2.685 | 3 | 35 | 0.00 | 8.0 | 0.0 | | 0.0 |
| 03/08 | 0.00 | 50 | 4.30 | 2.80 | 3.558 | 3 | 44 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/09 | 0.78 | 48 | 4.30 | 2.60 | 3.542 | 3 | 44 | 0.00 | 5.0 | 0.0 | | 0.0 |
| 03/10 | 0.00 | 48 | 4.00 | 2.65 | 3.414 | 3 | 47 | 0.00 | 7.0 | 0.0 | | 0.0 |
| 03/11 | 0.19 | 48 | 4.00 | 2.50 | 3.205 | 3 | 37 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/12 | 0.70 | 50 | 4.45 | 2.45 | 3.622 | 3 | 47 | 0.00 | 8.0 | 0.0 | | 0.0 |
| 03/13 | 0.00 | 49 | 4.70 | 2.70 | 3.795 | 3 | 50 | 0.00 | 7.0 | 0.0 | | 0.0 |
| 03/14 | 0.00 | 49 | 4.20 | 2.50 | 3.537 | 3 | 44 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/15 | 0.00 | 50 | 4.30 | 2.60 | 3.543 | 3 | 50 | 0.00 | 5.0 | 0.0 | | 0.0 |
| 03/16 | 0.00 | 50 | 4.30 | 2.60 | 3.579 | 3 | 53 | 0.00 | 7.0 | 0.0 | | 0.0 |
| 03/17 | 0.00 | 50 | 4.30 | 2.60 | 3.563 | 3 | 41 | 0.00 | 5.0 | 0.0 | | 0.0 |
| 03/18 | 0.00 | 50 | 4.20 | 2.60 | 3.447 | 3 | 44 | 0.00 | 4.0 | 0.0 | | 0.0 |
| 03/19 | 0.00 | 50 | 4.50 | 2.50 | 3.555 | 3 | 50 | 0.00 | 8.0 | 0.0 | | 0.0 |
| 03/20 | 0.00 | 50 | 4.50 | 2.50 | 3.676 | 3 | 59 | 0.00 | 4.0 | 0.0 | | 0.0 |
| 03/21 | 0.00 | 50 | 4.10 | 2.40 | 3.444 | 3 | 50 | 0.00 | 7.0 | 0.1 | | 0.0 |
| 03/22 | 0.00 | 50 | 4.20 | 2.50 | 3.452 | 3 | 44 | 0.00 | 7.0 | 0.0 | | 0.0 |
| 03/23 | 0.02 | 50 | 4.20 | 2.50 | 3.210 | 3 | 31 | 0.00 | 7.5 | 0.1 | | 0.0 |
| 03/24 | 0.00 | 50 | 4.10 | 2.45 | 3.050 | 3 | 40 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/25 | 0.00 | 51 | 4.40 | 2.65 | 4.192 | 3 | 59 | 0.00 | 8.0 | 0.0 | | 0.0 |
| 03/26 | 0.00 | 51 | 4.30 | 2.65 | 3.598 | 3 | 50 | 0.00 | 9.0 | 0.0 | | 0.0 |
| 03/27 | 0.28 | 51 | 4.65 | 2.65 | 3.502 | 3 | 50 | 0.00 | 6.0 | 0.0 | | 0.0 |
| 03/28 | 3.46 | 50 | 7.00 | 3.80 | 6.500 | 3 | 91 | 0.00 | 9.0 | 0.1 | | 0.0 |
| 03/29 | 0.00 | 50 | 7.00 | 4.80 | 6.425 | 3 | 94 | 1.23 | | | | 0.1 |
| 03/30 | 0.00 | 50 | 6.60 | 4.80 | 6.035 | 3 | 97 | 0.00 | 3.0 | 1.0 | | 0.0 |
| 03/31 | 0.00 | 51 | 6.30 | 4.75 | 5.705 | 3 | 94 | 0.00 | 3.0 | 0.1 | | 0.0 |
| MIN | 0.00 | 46 | 3.20 | 1.60 | 2.436 | 0 | 25 | 0.00 | 3.0 | 0.0 | | 0.0 |
| MAX | 3.46 | 51 | 7.00 | 4.80 | 6.500 | 3 | 97 | 1.23 | 11.0 | 1.0 | | 0.1 |
| TOT | 5.51 | | | | 113.39 | 84 | 1,548 | | | | | |
| AVG | 0.18 | | 4.40 | 2.62 | 3.658 | 2 | 50 | 0.04 | 6.9 | 0.0 | | 0.0 |

| DATE | SLUDGE | | GAS | | BELT FILTER PRESS | | | | | | |
|-------|----------|-------|-------|-------|-------------------|--------|------|-------|--------|--------|--------|
| | DGSTR | DGSTR | | | FEED | % | POLY | FECL3 | FILTER | CAKE | TOTAL |
| | TOT INF | TEMP | PROD | USED | 1000 | SOLIDS | | | LBS/ | % | WET |
| | 1000 GAL | F | x 100 | CU FT | GAL | | GALS | LBS | DAY | SOLIDS | TONS |
| 03/01 | 19.0 | 88 | 253 | | | | | | | | |
| 03/02 | 19.4 | 90 | 250 | | | | | | | | |
| 03/03 | 20.0 | 88 | 237 | | 29.9 | 2.7 | 5.6 | 0 | 6,790 | 18.4 | 19.69 |
| 03/04 | 18.4 | 89 | 241 | | | | | | | | |
| 03/05 | 18.9 | 88 | 195 | | | | | | | | |
| 03/06 | 20.3 | 88 | 74 | | | | | | | | |
| 03/07 | 19.8 | 87 | 72 | | 30.9 | 2.2 | 5.6 | 0 | 5,617 | 18.5 | 19.84 |
| 03/08 | 18.5 | 84 | 182 | | | | | | | | |
| 03/09 | 19.3 | 85 | 204 | | | | | | | | |
| 03/10 | 21.9 | 85 | 192 | | 37.1 | 2.2 | 8.8 | 0 | 6,865 | 19.3 | |
| 03/11 | 17.2 | 83 | 220 | | | | | | | | |
| 03/12 | 17.8 | 84 | 236 | | | | | | | | |
| 03/13 | 19.5 | 84 | 264 | | | | | | | | |
| 03/14 | 19.5 | 84 | 243 | | 30.4 | 3.8 | 6.4 | 0 | 9,626 | 18.8 | 19.04 |
| 03/15 | 21.0 | 85 | 265 | | | | | | | | |
| 03/16 | 20.3 | 85 | 275 | | | | | | | | |
| 03/17 | 18.9 | 85 | 258 | | 35.2 | 2.7 | 8.0 | 0 | 8,011 | 18.6 | 20.18 |
| 03/18 | 19.8 | 85 | 195 | | | | | | | | |
| 03/19 | 19.1 | 84 | 152 | | | | | | | | |
| 03/20 | 20.1 | 84 | 55 | | | | | | | | |
| 03/21 | 19.7 | 86 | 232 | | 32.1 | 1.9 | 5.6 | 0 | 4,960 | 18.6 | |
| 03/22 | 17.9 | 85 | 223 | | | | | | | | 19.44 |
| 03/23 | 20.3 | 86 | 247 | | | | | | | | |
| 03/24 | 18.1 | 85 | 222 | | | | | | | | |
| 03/25 | 18.9 | 82 | 79 | | 26.9 | 3.3 | 6.4 | 0 | 7,437 | 19.8 | |
| 03/26 | 18.8 | 82 | 219 | | | | | | | | |
| 03/27 | 21.0 | 84 | 237 | | | | | | | | |
| 03/28 | 21.7 | 84 | 274 | | 30.7 | 2.5 | 6.4 | 0 | 6,318 | 19.4 | 23.37 |
| 03/29 | 16.4 | 84 | 164 | | | | | | | | |
| 03/30 | 18.9 | 84 | 150 | | | | | | | | |
| 03/31 | 21.1 | 84 | 170 | | | | | | | | |
| MIN | 16.4 | 82 | 55 | | 26.9 | 1.9 | 5.6 | 0 | 4,960 | 18.4 | 19.04 |
| MAX | 21.9 | 90 | 275 | | 37.1 | 3.8 | 8.8 | 0 | 9,626 | 19.8 | 23.37 |
| TOT | 601.5 | | 6,280 | | 253.2 | | 52.8 | 0 | 55,625 | | 121.56 |
| AVG | 19.4 | 85 | 203 | | 31.7 | 2.7 | 6.6 | 0 | 6,953 | 18.9 | 20.26 |

| DATE | DISSOLVED OXYGEN | | | | | | pH | | | | EFFLUENT | | MIXED LIQUOR | | | | NITRIFICATION | |
|-------|------------------|-----|--------------|---|---------|---------|-----|----------|---------|---------|----------|---------|--------------|------------------|------|---------|---------------|------|
| | NIT AER TANKS | | SEC AER TANK | | SEC EFF | FIN EFF | RAW | PRIM EFF | MIX LIQ | FIN EFF | NH3-N | TOTAL P | RAS | avg.SETTLE/SSV30 | | NRAS | WASTE SLUDGE | MLSS |
| | 1 | 2 | 1 | 2 | MG/L | MG/L | SU | SU | SU | SU | MG/L | MG/L | MG | ML/L | ML/L | MG | 1000 GAL | pH |
| 03/01 | | | | | | 7.2 | 6.9 | | 7.1 | | | | | | 2.16 | 29.3 | | |
| 03/02 | 1.8 | 1.9 | | | | 7.4 | 7.0 | | 7.2 | 1.5 | 0.3 | | | 187 | 2.22 | 32.9 | 6.7 | |
| 03/03 | 1.8 | 2.0 | | | | 7.3 | 7.0 | | 7.1 | | | | | 197 | 2.21 | 27.9 | 6.5 | |
| 03/04 | | | | | | 7.5 | 6.8 | | 7.2 | | | | | | 2.22 | 29.6 | | |
| 03/05 | | | | | | 7.6 | 7.1 | | 7.1 | | | | | | 2.17 | 31.5 | | |
| 03/06 | | | | | | 7.3 | 7.0 | | 7.2 | | | | | | 2.19 | 34.0 | | |
| 03/07 | 2.2 | 2.2 | | | | 7.3 | 7.2 | | 7.2 | 2.7 | 0.3 | | | 217 | 2.27 | 34.3 | 6.7 | |
| 03/08 | 2.4 | 2.5 | | | | 7.3 | 7.0 | | 7.2 | | | | | 210 | 2.29 | 25.8 | 6.6 | |
| 03/09 | 2.0 | 1.8 | | | | 7.1 | 7.0 | | 7.0 | 1.8 | 0.2 | | | 207 | 0.23 | 51.2 | 6.5 | |
| 03/10 | 1.9 | 1.9 | | | | 7.2 | 7.1 | | 7.1 | | | | | 202 | 2.23 | 33.5 | 6.5 | |
| 03/11 | 1.8 | 1.9 | | | | 7.3 | 7.0 | | 7.0 | | | | | | 2.25 | 47.5 | | |
| 03/12 | | | | | | 7.1 | 6.9 | | 7.1 | | | | | | 2.24 | 47.5 | | |
| 03/13 | | | | | | 7.1 | 6.9 | | 7.1 | | | | | | 2.17 | 49.9 | | |
| 03/14 | 1.8 | 1.8 | | | | 7.2 | 7.2 | | 7.1 | 1.8 | 0.4 | | | 187 | 2.15 | 40.3 | 6.6 | |
| 03/15 | 1.8 | 1.9 | | | | 7.1 | 6.9 | | 7.0 | | | | | 185 | 2.23 | 37.4 | 6.5 | |
| 03/16 | 1.8 | 1.9 | | | | 7.2 | 7.1 | | 7.0 | 2.8 | 0.3 | | | 182 | 2.24 | 22.1 | 6.4 | |
| 03/17 | 1.9 | 1.8 | | | | 7.2 | 7.1 | | 7.1 | | | | | 192 | 2.27 | 16.2 | 6.5 | |
| 03/18 | 1.9 | 1.9 | | | | 7.1 | 6.9 | | 7.0 | | | | | | 0.23 | 13.7 | | |
| 03/19 | | | | | | 7.1 | 6.8 | | 7.2 | | | | | | 2.30 | 26.2 | | |
| 03/20 | | | | | | 7.3 | 6.9 | | 7.2 | | | | | | 2.31 | 21.0 | | |
| 03/21 | 1.9 | 1.7 | | | | 7.1 | 7.0 | | 7.1 | 4.6 | 0.4 | | | 242 | 2.21 | 23.2 | 6.5 | |
| 03/22 | 2.0 | 1.8 | | | | 7.2 | 6.9 | | 7.2 | | | | | 250 | 2.21 | 42.7 | 6.7 | |
| 03/23 | 1.8 | 2.0 | | | | 7.2 | 7.0 | | 7.1 | 1.0 | 0.4 | | | 242 | 2.11 | 40.0 | 6.5 | |
| 03/24 | 1.7 | 2.0 | | | | 7.2 | 7.0 | | 7.1 | | | | | 240 | 2.33 | 23.5 | 6.5 | |
| 03/25 | | | | | | 7.2 | 7.0 | | 7.2 | | | | | | 2.39 | 29.7 | | |
| 03/26 | | | | | | 7.0 | 6.8 | | 7.2 | | | | | | 2.34 | 34.1 | | |
| 03/27 | | | | | | 7.2 | 6.9 | | 7.2 | | | | | | 2.31 | 43.7 | | |
| 03/28 | 1.9 | 1.7 | | | | 7.2 | 7.1 | | 7.1 | 3.7 | 1.0 | | | 272 | 2.13 | 49.7 | 6.6 | |
| 03/29 | | | | | | | | | 7.1 | | | | | | 2.03 | 12.2 | | |
| 03/30 | | | | | | 6.8 | 7.0 | | 7.4 | | | | | 202 | 2.20 | 41.4 | 6.9 | |
| 03/31 | 2.0 | 1.7 | | | | 6.9 | 7.0 | | 7.4 | 1.6 | 0.4 | | | 215 | 2.22 | 47.3 | 6.6 | |
| MIN | 1.7 | 1.7 | | | | 6.8 | 6.8 | | 7.0 | 1.0 | 0.2 | | | 182 | 0.23 | 12.2 | 6.4 | |
| MAX | 2.4 | 2.5 | | | | 7.6 | 7.2 | | 7.4 | 4.6 | 1.0 | | | 272 | 2.39 | 51.2 | 6.9 | |
| TOT | | | | | | | | | | | | | | | | 1,039.3 | | |
| AVG | 1.9 | 1.9 | | | | 7.2 | 7.0 | | 7.1 | 2.4 | 0.4 | | | 213 | 2.10 | 33.5 | 6.6 | |

| DATE | 5 DAY BOD | | | | | | | TOTAL SUSPENDED SOLIDS | | | | | | | | | | | | | |
|-------|-----------|----------|-------|--------|-----------|---------|-------|------------------------|--------|----------|-------|-----------|---------|-------|----------|-----|-----|----------|-------|-------|--|
| | RAW HD | PRIM EFF | % REM | Raw HD | Final EFF | FIN EFF | % REM | RAW HD | RAW HD | PRIM EFF | % REM | Final EFF | FIN EFF | % REM | AER TANK | | RAS | NIT TANK | | | |
| | MG/L | MG/L | | LBS | LBS | MG/L | | MG/L | LBS | MG/L | | LBS | MG/L | | TOT | VOL | TOT | NMLSS | NMLVS | NRAS | |
| 03/01 | | | | | | | | | | | | | | | | | | | | | |
| 03/02 | 160 | 120 | 25.0 | 3,447 | 174 | 8 | 94.9 | 140 | 3,016 | 67 | 52 | 93 | 4 | 96.9 | | | | 2,276 | 1,770 | 5,272 | |
| 03/03 | | | | | | | | | | | | | | | | | | 2,312 | | 5,036 | |
| 03/04 | | | | | | | | | | | | | | | | | | | | | |
| 03/05 | | | | | | | | | | | | | | | | | | | | | |
| 03/06 | | | | | | | | | | | | | | | | | | | | | |
| 03/07 | 190 | 98 | 48.4 | 4,255 | 155 | 7 | 96.4 | 180 | 4,031 | 86 | 52 | 83 | 4 | 97.9 | | | | 2,534 | | 5,472 | |
| 03/08 | | | | | | | | | | | | | | | | | | 2,516 | | 5,804 | |
| 03/09 | 170 | 95 | 44.1 | 5,022 | 266 | 9 | 94.7 | 140 | 4,136 | 73 | 48 | 157 | 5 | 96.2 | | | | 2,368 | 1,807 | 6,264 | |
| 03/10 | | | | | | | | | | | | | | | | | | 2,294 | | 5,768 | |
| 03/11 | | | | | | | | | | | | | | | | | | | | | |
| 03/12 | | | | | | | | | | | | | | | | | | | | | |
| 03/13 | | | | | | | | | | | | | | | | | | | | | |
| 03/14 | 82 | 45 | 45.1 | 2,419 | 88 | 3 | 96.3 | 140 | 4,130 | 36 | 74 | 156 | 5 | 96.2 | | | | 2,134 | | 5,664 | |
| 03/15 | | | | | | | | | | | | | | | | | | 2,114 | | 5,204 | |
| 03/16 | 120 | 54 | 55.0 | 3,582 | 152 | 5 | 95.8 | 110 | 3,283 | 54 | 51 | 119 | 4 | 96.4 | | | | 2,093 | 1,596 | 5,496 | |
| 03/17 | | | | | | | | | | | | | | | | | | 2,169 | | 5,536 | |
| 03/18 | | | | | | | | | | | | | | | | | | | | | |
| 03/19 | | | | | | | | | | | | | | | | | | | | | |
| 03/20 | | | | | | | | | | | | | | | | | | | | | |
| 03/21 | 140 | 86 | 38.6 | 4,021 | 287 | 10 | 92.9 | 140 | 4,021 | 92 | 34 | 192 | 7 | 95.2 | | | | 2,576 | | 6,440 | |
| 03/22 | | | | | | | | | | | | | | | | | | 2,661 | | 6,092 | |
| 03/23 | 150 | 90 | 40.0 | 4,016 | 375 | 14 | 90.7 | 120 | 3,213 | 54 | 55 | 54 | 2 | 98.3 | | | | 2,560 | 1,935 | 5,980 | |
| 03/24 | | | | | | | | | | | | | | | | | | 2,502 | | 5,712 | |
| 03/25 | | | | | | | | | | | | | | | | | | | | | |
| 03/26 | | | | | | | | | | | | | | | | | | | | | |
| 03/27 | | | | | | | | | | | | | | | | | | | | | |
| 03/28 | 88 | 68 | 22.7 | 4,770 | 1,843 | 34 | 61.4 | 130 | 7,047 | 79 | 39 | 1,409 | 26 | 80.0 | | | | 2,759 | | 6,040 | |
| 03/29 | | | | | | | | | | | | | | | | | | | | | |
| 03/30 | | | | | | | | | | | | | | | | | | 1,933 | 1,473 | 6,256 | |
| 03/31 | 87 | 80 | 8.0 | 4,139 | 523 | 11 | 87.4 | 78 | 3,711 | 58 | 26 | 333 | 7 | 91.0 | | | | 2,122 | | 6,556 | |
| MIN | 82 | 45 | 8.0 | 2,419 | 88 | 3 | 61.4 | 78 | 3,016 | 36 | 26 | 54 | 2 | 80.0 | | | | 1,933 | | 5,036 | |
| MAX | 190 | 120 | 55.0 | 5,022 | 1,843 | 34 | 96.4 | 180 | 7,047 | 92 | 74 | 1,409 | 26 | 98.3 | | | | 2,759 | | 6,556 | |
| TOT | | | | 35,671 | 3,864 | | | | 36,588 | | | 2,596 | | | | | | | | | |
| AVG | 132 | 82 | 36.3 | 3,963 | 429 | 11 | 91.5 | 131 | 4,065 | 67 | 48 | 288 | 7 | 94.6 | | | | 2,348 | | 5,800 | |

| DATE | RAW SLUDGE SOLIDS | | DIGESTER SLUDGE | | | | | | COLIFORM | PROCESS | FERRIC | NIT. | POLY | Sodium |
|-------|-------------------|------|-----------------|--------|-------|------------|-------|-------|-----------|----------|----------|----------|-----------------|--------------|
| | TOT | VOL | pH | pH | ALK | VOL | TOT | VOL | FECAL | FERROUS | TO PRESS | LIME | ALUMINUM | Bi-Sulfite |
| | % | % | TANK 1 | TANK 2 | MG/L | ACIDS MG/L | SOL % | SOL % | #/ 100 ML | LBS/ DAY | LBS/ DAY | LBS/ DAY | CHORIDE LBS/DAY | Gallons/ DAY |
| 03/01 | | | 6.9 | | | | | | 8 | 311 | | 958 | 0 | 8.4 |
| 03/02 | | | 7.1 | | | | | | | 259 | | 799 | 0 | 6.4 |
| 03/03 | 1.7 | 78.8 | 7.0 | | | | 2.7 | 62.5 | | 311 | 0 | 767 | 0 | 10.4 |
| 03/04 | | | 7.0 | | | | | | | 311 | | 863 | 0 | 6.4 |
| 03/05 | | | 7.0 | | | | | | | 311 | | 863 | 0 | 7.2 |
| 03/06 | | | 7.0 | | | | | | 2 | 311 | | 863 | 0 | 8.8 |
| 03/07 | | | 7.0 | | | | 2.2 | 63.6 | 8 | 311 | 0 | 671 | 0 | 10.4 |
| 03/08 | | | 7.1 | | | | | | 6 | 311 | | 958 | 0 | 12.8 |
| 03/09 | | | 7.0 | | | | | | | 311 | | 831 | 0 | 13.6 |
| 03/10 | 2.2 | 75.4 | 7.0 | | | | 2.2 | 62.5 | | 311 | 0 | 767 | 0 | 12.8 |
| 03/11 | | | 7.0 | | | | | | | 311 | | 847 | 0 | 10.4 |
| 03/12 | | | 7.0 | | 1,710 | 35 | | | | 207 | | 767 | 0 | 12.0 |
| 03/13 | | | 7.0 | | | | | | 1 | 311 | | 767 | 0 | 12.0 |
| 03/14 | | | 7.0 | | | | 3.8 | 60.8 | 2 | 301 | 0 | 671 | 0 | 12.0 |
| 03/15 | | | 6.8 | | | | | | 4 | 269 | | 767 | 0 | 12.8 |
| 03/16 | | | 6.8 | | | | | | | 311 | | 767 | 0 | 12.8 |
| 03/17 | 2.8 | 77.4 | 6.9 | | | | 2.7 | 62.2 | | 337 | 0 | 767 | 0 | 12.8 |
| 03/18 | | | 6.8 | | | | | | | 363 | | 767 | 0 | 12.0 |
| 03/19 | | | 6.9 | | | | | | | 285 | | 703 | 0 | 8.0 |
| 03/20 | | | 6.9 | | | | | | 1 | 321 | | 767 | 0 | 11.2 |
| 03/21 | | | 6.9 | | | | 1.9 | 60.0 | 6 | 311 | 0 | 767 | 0 | 11.2 |
| 03/22 | | | 6.8 | | | | | | 3 | 301 | | 767 | 0 | 9.6 |
| 03/23 | | | 6.8 | | | | | | | 259 | | 671 | 0 | 11.2 |
| 03/24 | | | 6.7 | | | | | | | 207 | | 767 | 0 | 12.8 |
| 03/25 | 2.2 | 74.6 | 6.7 | | | | 3.3 | 62.6 | | 259 | 0 | 767 | 0 | 12.8 |
| 03/26 | | | 6.6 | | | | | | | 233 | | 703 | 0 | 12.8 |
| 03/27 | | | 6.7 | | | | | | 3 | 285 | | 767 | 0 | 13.6 |
| 03/28 | 2.4 | 75.6 | 6.7 | | | | 2.5 | 62.5 | 6 | 259 | 0 | 671 | 0 | 13.6 |
| 03/29 | | | 6.7 | | | | | | 111 | 0 | | 479 | 0 | 21.6 |
| 03/30 | | | 6.7 | | | | | | | 0 | | 575 | 0 | 28.8 |
| 03/31 | | | 6.6 | | | | | | | 207 | | 575 | 0 | 19.2 |
| MIN | 1.7 | 74.6 | 6.6 | | 1,710 | 35 | 1.9 | 60.0 | 1 | 0 | 0 | 479 | 0 | 6.4 |
| MAX | 2.8 | 78.8 | 7.1 | | 1,710 | 35 | 3.8 | 63.6 | 111 | 363 | 0 | 958 | 0 | 28.8 |
| TOT | | | | | | 35 | | | | 8,394 | 0 | 23,434 | 0 | 380.4 |
| AVG | 2.3 | 76.4 | 6.9 | | 1,710 | 35 | 2.7 | 62.1 | | 271 | 0 | 756 | 0 | 12.3 |
| GEO | | | | | | | | | 4 | | | | | |

Submitted By:
 Validated By:

[Signature]
[Signature]

Date: 4-11-05
 Date: 4-11-05