Monthly Operating Report
January, 2011
Concord Wastewater Treatment Plant
Operated by Woodard &Curran

Date: February 12, 2011

To: Alan Cathcart, Concord Water & Sewer Superintendent
cc: Chris Whelan, Town Manager
Richard Reine, Director Concord Public Works

From: Michael Thompson and Staff

Key Activities This Month/Capital Program

During January all treatment processes were either operational or in ready standby except for the #1 primary clarifier which was taken offline on November 8th. This clarifier remained offline throughout January in an attempt to lessen possible odor coming off the clarifier water surface. Flow through the facility in January averaged 0.932 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 1.10 MGD. The 12-month average flow permit upper limit is 1.2 MGD.

More notable events or tasks accomplished in January include:

1.) On account of the two to three feet of snow that fell on the plant during January, a significant amount of effort went into snow removal. The treatment process itself basically went on without impact from the snow, yet operator access to process tanks and the ability for vehicles to move in and out of the plant meant frequent snow-blowing and shoveling. Fortunately, the Concord Public Works employee assigned to the facility in January was provided a backhoe/loader from the Water & Sewer vehicle fleet. On several occasions, this equipment and operator were heavily relied on to keep the facility continuously open to plant staff and service providers–such as our sludge hauler.

View down the back driveway of the plant shows snow reaching the top of the 4-foot high clarifier tank walls on 1/28/11.

Key Activities This Month/Capital Program cont'd

2.) In January, the plant implemented the use of a new Computerized Maintenance Management System (CMMS) called SEMS. SEMS provides a means to track maintenance and alert plant staff to scheduled maintenance needs. This software and it's support staff reside in the Atlanta area and our staff access it at any time via the internet and through the use of log-ins and passwords. This maintenance program will include the full compliment of equipment at the plant and will provide a means to attach important reference manuals, pictures, and vendor contacts to each piece of equipment to assist mechanics in performing maintenance in an efficient and well-documented manner.

Maintenance Management

Following is a brief list of a portion of maintenance items completed in January:

a) the plant's snow thrower required several rounds of repairs as the copious amounts of snow in January put unusual stress on this equipment.
b) installed gasketing and caulking around the headworks decking to seal up potential routes through which odors might leak.
c) performed a vacuum gauge survey of the facility's odor collection pipe lines to verify proper vacuum throughout the system.
d) on several days plant staff used a front end loader and shovels to clear snow from walkways, roadways, and path's to maintain access around the plant.
e) removed two feet of snow and ice from the front entrance awning to curb ice damming and lessen the structural load on this flat roof.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.10 MGD (12month avg)	1.2 MGD	avg. = 0.932 MGD Max. Daily Flow = 1.02 MG
BOD5 (mg/l)	4 mg/l	30 mg/l	99% average BOD removal in Jan.
TSS (mg/l)	9 mg/l	30 mg/l	96% average TSS removal in Jan.
Coliform, Geo.Mean #/100ml	3 cfu*/100ml	200 cfu/100ml	1 test on 1/20 produced 20 cfu/100ml
Phosphorus	0.67 mg/l	1.0 mg/l Nov. '10– Mar. '11	0.86 mg/l daily max. on Tue. 1/25
Total Ammonia Nitrogen	0.90 mg/l	Report Only	1.01 mg/l daily max. on Tue. 1/4

**cfu =coliform forming unit or colony.*

During January, the Concord WWTP performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the secondary clarifiers and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in January is 0.67 mg/l, thereby meeting the CWWTP's winter permit limit not to exceed 1.0 mg/l TP.

Additionally, during January all effluent disinfection was performed using ultra violet light.

Alarm Activity

This section provides the Town information on events that activate the facility's alarm response system. These events occur while the plant is unmanned and while both the plant's SCADA system and *Lexington Alarm* are monitoring the facility's alarm system. This report identifies alarm activity from the start of the calendar year to the present.

Concord WWTP Off-Hours Alarm Log

Date	Time	Alarm Source	Observations/Corrective Action/Comments
Jan. '11	NA	NA	

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 44,050 gallons of septage was received at the Concord WWTP in January.

WWTP Septage Receipts in gallons

	2011	2010	2009
January	44,050	32,500	10,500
February		25,750	41,250
March		171,750	83,250
April		211,500	168,250
May		125,950	150,900
June		184,950	151,450
July		90,800	138,500
August		173,250	137,750
September		182,250	203,750
October		210,250	172,400
November		194,100	155,400
December		132,750	109,600
Annual Totals:	44,050	1,735,800	1,523,000

Sludge Production

During January, 98,309 gallons of liquid sludge, equivalent to 16.78 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons /dry tons

	2011	2010	2009
January	98,309/16.78	89,000/15.61	107,500/16.71
February		90,000/16.81	86,000/14.13
March		90,000/15.65	99,000/17.56
April		135,000/23.57	153,000/23.94
May		97,980/15.76	170,670/24.27
June		99,000/18.28	153,000/20.83
July		99,000/16.81	126,000/20.57
August		108,000/18.61	76,376/11.81
September		106,160/17.88	126,000/21.65
October		107,558/17.31	99,000/16.03
November		142,500/21.18	99,000/16.51
December		134,750/21.73	117,000/17.79
Annual Totals:	98,309/16.78	1,298,945/219.20	1,421,546/223.58