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

Date: March 10, 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 February all treatment processes were either operational or in ready standby except for the #1 primary clarifier which remained available but offline until the very end of February. Flow through the facility in February averaged 0.986 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 1.09 MGD. The 12-month average flow permit upper limit is 1.2 MGD.

More notable events or tasks accomplished in February include:

1.) While snowfall began to subside in mid-February, the plant continued to operate under upwards of three feet of snow on the ground. This required plant staff to focus an unusual amount of time and effort into keeping path ways and vital access points clear of snow. By the end of the month, the weather pattern allowed for a significant meltdown of the snow and access to exterior tanks and equipment began to return to normal.

2.) The significant snowmelt from mid-February to the end of the month, along with slightly over 2 inches of rainfall in the last five days of February, resulted in a slow but steady increase in plant flow. Over the first week of February plant flow averaged close to 0.92 million gallons per day (MGD), whereas the flow averaged close to 1.1 MGD over the last week of February, equating to roughly a 20% increase in plant flow. On February 28th this increasing flow finally pushed plant staff to reopen flow to the #1 primary clarifier that had been offline since October. Presently both primary clarifiers remain online to accommodate any further above normal flow rates this spring.

Maintenance Management

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

a) the plant's snow thrower required another couple rounds of repair as the heavy snowfall, specially in early February, put unusually high wear and tear on this equipment. The Town provided use of a heavy-duty loader/backhoe following recent snowstorms to help keep the facility accessible.
b) installed a new fan including a wholly new thermostat control circuit on the #1 tertiary lift pump. The original fan that failed in early January appears to have failed due to excessive run times. The new thermostat control will greatly reduced fan run time and hopefully greatly extend this fan's operational life cycle.
c) located and tightened/secured the control wiring in the CoMag influent turbidimeter to ensure consistent and precise turbidity signal output.
d) removed, cleaned, reinstalled the CoMag polymer makeup water rotometer followed by testing and resetting/marking water on/off limit switches related to this rotometer.
e) installed plastic paneling to serve as new maintenance shop bench top.

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	
Feb. '11	3:00 am	Hi-Effluent turbidity	Links in process monitoring data/trends reveal an inaccurate caustic feed to CoMag effluent. Operations staff ultimately performs hotwater flush of the caustic feed system to remove solidified caustic and restore accurate caustic pumping.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.01 MGD (12month avg)	1.2 MGD	avg. = 0.986 MGD Max. Daily Flow = 1.23 MG
BOD5 (mg/l)	5 mg/l	30 mg/l	98% average BOD removal in Feb.
TSS (mg/l)	7 mg/l	30 mg/l	97% average TSS removal in Feb.
Coliform, Geo.Mean #/100ml	5 cfu*/100ml	200 cfu/100ml	1 test on 2/2 produced 52 cfu/100ml
Phosphorus	0.99 mg/l	1.0 mg/l Nov. '10– Mar. '11	1.18 mg/l daily max. on Mon. 2/7
Total Ammonia Nitrogen	0.98 mg/l	Report Only	1.12 mg/l daily max. on Mon. 2/7

**cfu =coliform forming unit or colony.*

During February, 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 February is 0.99 mg/l, thereby meeting the CWWTP's winter permit limit not to exceed 1.0 mg/l TP.

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

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 31,750 gallons of septage was received at the Concord WWTP in February.

WWTP Septage Receipts in gallons

	2011	2010	2009
January	44,050	32,500	10,500
February	31,750	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:	76,250	1,735,800	1,523,000

Sludge Production

During February, 72,916 gallons of liquid sludge, equivalent to 13.50 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	72,916/13.5	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:	171,225/30.28	1,298,945/219.20	1,421,546/223.58