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

Date: June 20, 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 May all treatment processes were either operational or in ready standby. Flow through the facility in May averaged 1.29 million gallons per day (MGD) and the permit critical 12-month average flow settled at 1.03 MGD. The permit upper limit for the 12-month average flow is 1.2 MGD.

More notable events or tasks accomplished in May include:

1.) On May 20 the entire eighth grade class of Concord Middle School participated in Public Works Day. Groups of 50 students and their teachers toured various Public Works facilities including the wastewater treatment plant. In a 45-minute stopover at the WWTP students participated in a water conservation discussion and water relay and a tour of the WWTP. As most kids have not given much thought to how wastewater treatment occurs this visit opened their eyes to a critical function of Public Works and the infrastructure that exists in their town. Additionally, on May 6 a class of 11th graders from Minuteman Regional Tech High School toured the plant as a traditional part of their environmental studies program. We consider our relationship with this school a valuable one as three recent past graduates of this program currently work in the plant or in Public Works.

Hardik Raval, CPW Water & Sewer Engineer, describes a step in the wastewater treatment process.

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2.) In May plant staff and CPW's Hardik Raval began planning for a capital improvement project to rehabilitate both the #1 secondary clarifier and the #1 trickling filter. This project will include sandblasting and painting as well as replacement of bearings, seals and lubricants on both pieces of treatment equipment. In May, project specifications and bidding documents were prepared in anticipation of going out to contractor bidding in June.

Maintenance Management

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

a) Continue with plans to rehab the # secondary clarifier and the # trickling filter. This included finalizing specifications to guide bidders and finalizing replacement parts for both units.
b) Performed seasonal oil change on the #2 secondary clarifier.
c) Performed semi-annual PM inspection and oil change on the two aerated sludge tank blowers and made plans to repair a small oil leak on the # 1 aerated sludge tank blower.
d) Contractors on site to install a new keyless building access system.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.03 MGD (12month avg)	1.2 MGD	avg. = 1.29 MGD Max. Daily Flow = 1.46 MG
BOD5 (mg/l)	3 mg/l	30 mg/l	98% average BOD removal in May
TSS (mg/l)	3 mg/l	30 mg/l	98% average TSS removal in May
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All tests for f-coliform in May came back with zero colonies.
Phosphorus	0.17 mg/l	0.2 mg/l Apr '11– Oct. '11	0.22 mg/l daily max. on Tue. 5/3
Total Ammonia Nitrogen	0.61 mg/l	Report Only	0.63 mg/l daily max. on Wed. 5/4

**cfu =coliform forming unit or colony.*

During May, 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 May is 0.17 mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.2 mg/l TP.

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

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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.
Mar. '11	NA	NA	
Apr. '11	NA	NA	
May '11	NA	NA	

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 113,500 gallons of septage was received at the Concord WWTP in May.

WWTP Septage Receipts in gallons

	2011	2010	2009
January	44,050	32,500	10,500
February	31,750	25,750	41,250
March	102,950	171,750	83,250
April	139,750	211,500	168,250
May	113,500	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:	431,750	1,735,800	1,523,000

Sludge Production

During May, 108,000 gallons of liquid sludge, equivalent to 27.85 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	72,617/13.89	90,000/15.65	99,000/17.56
April	81,000/14.90	135,000/23.57	153,000/23.94
May	108,000/27.85	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:	432,842/72.02	1,298,945/219.20	1,421,546/223.58