

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

Date: July 28, 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 June all treatment processes were either operational or in ready standby. Flow through the facility in June averaged 1.17 million gallons per day (MGD) and the permit critical 12-month average flow settled at 1.06 MGD. The permit upper limit for the 12-month average flow is 1.2 MGD.

More notable events or tasks accomplished in June include:

1.) In early June, plant staff finished draining and washing down the #1 secondary clarifier in preparation for a capital improvement project. This project includes sandblasting and painting clarifier metal components, rebuilding the clarifier sweep drive, and sandblasting and painting the #1 trickling filter metal components and replacement of it's grease seals and bearings. On June 10, the Town put out a request for bids/specifications for this project and a bidder walk-through was held at the plant on June 24. On June 27, W&C Master Electrician Rich Hunt disconnected power from the secondary clarifier bridge and drive to make ready for the contractor to remove the clarifier bridge and the clarifier drive. Once the drive is sandblasted and primed, plant staff will dismantle and clean the drive internal spaces prior to reassembling with new seals and bearings.



The #1 secondary clarifier with bridge and drive removed and ready to cover for sandblasting & painting.

June '11 WWTP MOR

2.) In June work was performed that should help provide a visual screen between the WWTF and residences of Great Meadows Road. Ten 6-foot tall conifers and a brown vinyl fence insert were all installed on and around the WWTF fence line adjacent to Great Meadows Road. CPW Park and Tree Div. personnel planted the trees, while WWTF staff installed the fence insert.



A view from Great Meadows Road toward the WWTF showing new conifers and fence insert.

Maintenance Management

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

- a) Performed semi-annual preventive maintenance inspections and drive oil bath changes on both primary clarifiers.
- b) Installed new oil seal on #1 primary clarifier drive shaft.
- c) Drained, cleaned, inspected, and disconnected power from the #1 secondary clarifier in preparation for contractor sandblast, paint, and rehab project starting in July.
- d) Rebuilt the UV bulb wiper compressed air cylinder on Bank B and replaced one burned out bulb.
- e) Rehabbed yard mower including carburetor rebuild.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.06 MGD (12month avg)	1.2 MGD	avg. = 1.17 MGD Max. Daily Flow = 1.48 MG
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in June
TSS (mg/l)	2 mg/l	30 mg/l	99% average TSS removal in June
Coliform, Geo.Mean #/100ml	2 cfu*/100ml	200 cfu/100ml	Max. daily f-coliform count of 12 colonies/100 ml eff. occurred on Thu 6/16.
Phosphorus	0.18 mg/l	0.2 mg/l Apr '11– Oct. '11	0.23 mg/l daily max. occurred on Thu. 6/23 & Wed. 6/29
Total Ammonia Nitrogen	1.4 mg/l	Report Only	2.02 mg/l daily max. on Tue. 6/14

*cfu =coliform forming unit or colony.

June '11 WWTP MOR

During June, the Concord WWTP performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the #2 secondary clarifier and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in June is 0.18 mg/l, thereby meeting the CWWTP's summer permit limit not to exceed 0.2 mg/l TP.

Over the week of June 5, the Concord WWTF conducted the 2011, second-quarter Whole Effluent Toxicity (WET) sampling event. The 48-hour LC50, a.k.a. acute toxicity test, for *Ceriodaphnia* was >100% and permit complying. The 7-day NOEC, a.k.a. chronic toxicity test, was 100%. Monitoring of chronic toxicity is a permit requirement; however, there are currently no chronic toxicity limitations. A copy of the complete WET test report prepared by our contracted lab is enclosed for your review.

Finally, during June 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	
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	
June 26-Sunday	9:30 am	Intrusion	South Clarifier Rm. dbl. door not fully engaged in closed position – wind rocked door.

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 130,000 gallons of septage was received at the Concord WWTP in June.

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	130,000	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:	561,750	1,735,800	1,523,000

June '11 WWTP MOR

Sludge Production

During June, 108,000 gallons of liquid sludge, equivalent to 19.67 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	108,000/19.67	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:	540,842/91.67	1,298,945/219.20	1,421,546/223.58