

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

Date: November 23, 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 October all treatment processes were either operational or in ready standby. Flow through the facility in October averaged 1.245 million gallons per day (MGD) and the permit critical 12-month average flow settled at 1.16 MGD. The permit upper limit for the 12-month average flow is 1.2 MGD.

More notable events or tasks accomplished in October include:

1.) The exploration into how the WWTF can perform in meeting possible/pending changes to the discharge permit continued in October. Of particular interest were the permit parameters for aluminum and total phosphorus and how the concentration of these elements in the final effluent can be adjusted with changes in chemical treatment (CoMag) settings.



The loaming and reseeding of the front lawn by CPW personnel this fall is a great esthetics improvement.

2.) In October, an odor control consultant from Bowker & Associates, Inc. toured the facility to assess the current state of operations and the apparent odor producing conditions around the facility. This visit was arranged by W&C as part of a comprehensive approach to resolving the chronic reporting of odor impact in the vicinity of 280 Great Meadows Road. Bowker & Associates, Inc. has produced a memorandum presenting an array of services they can provide in identifying odor sources and odor mitigation measures. An additional odor consultant visit is planned for the near future.

October '11 WWTP MOR

Maintenance Management

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

- Performed semi-annual preventive maintenance inspection and lubrication replacement on both thickened sludge tank mixers.
- A Square D service technician spent 1.5 days on site replacing capacitors in the facility's power factor correction device as part of a manufacturer recall.
- Performed annual preventive maintenance inspection and cleaning of facility's two oil fired furnaces/boilers including the installation of new electrodes.
- Replaced 3 failed lamps on UV Bank B then returned the bank to ready standby.
- Performed a series of cleaning operations on the plant alum feed equipment to flush out deposits of alum and suspended solids originating from the alum used for chemically enhanced phosphorus removal.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.16 MGD (12month avg)	1.2 MGD	Oct. avg. = 1.245 MGD Max. Daily Flow = 1.48 MG
BOD5 (mg/l)	2 mg/l	30 mg/l	99% average BOD removal in October
TSS (mg/l)	2 mg/l	30 mg/l	99% average TSS removal in October
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All daily f-coliform counts were actually 0 colonies/100 throughout October
Phosphorus	0.15 mg/l	0.2 mg/l Apr '11– Oct. '11	0.34 mg/l daily max. occurred on Thu. 10/6
Total Ammonia Nitrogen	0.31 mg/l	Report Only	0.88 mg/l daily max. on Thu. 10/6

*cfu = coliform forming unit or colony.

During October, the Concord WWTP performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the two secondary clarifiers and second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in October is 0.15 mg/l, thereby meeting the CWWT's summer permit limit not to exceed 0.2 mg/l TP.

Finally, during October all effluent disinfection was performed using ultra violet light.

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 82,250 gallons of septage was received at the Concord WWTP in October.

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	73,750	90,800	138,500
August	69,500	173,250	137,750
September	98,750	182,250	203,750
October	82,250	210,250	172,400
November		194,100	155,400
December		132,750	109,600
Annual Totals:	886,000	1,735,800	1,523,000

October '11 WWTP MOR

Sludge Production

During October, 108,008 gallons of liquid sludge, equivalent to 15.10 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	106,060/17.69	99,000/16.81	126,000/20.57
August	135,224/18.83	108,000/18.61	76,376/11.81
September	108,008/15.10	106,160/17.88	126,000/21.65
October	141,003/23.05	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:	1,031,137/166.34	1,298,945/219.20	1,421,546/223.58

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.
July '11	NA	NA	
Aug. '11	Scattered	Intrusion	South Clarifier Rm. single door triggered several nuisance intrusion alarms in mid-August. Plant personnel were finally able to stop the trouble by firming up an apparent loose/wet wire connection within the door frame.
Sep. '11	NA	NA	
Oct. '11	NA	NA	