

**Monthly Operating Report
January, 2010
Concord Wastewater Treatment Plant
Operated by Woodard & Curran**

Date: February 11, 2010

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

From: Michael Thompson and Staff

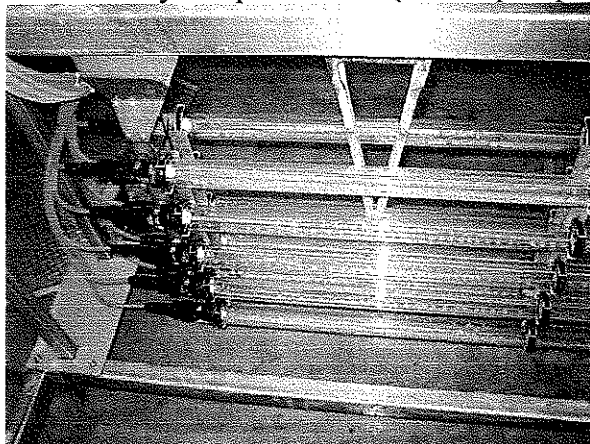
Key Activities This Month/Capital Program

During January all treatment processes were either operational or in ready standby. Flow through the facility in January averaged 1.032 million gallons per day (MGD) and the permit critical 12-month average flow fell slightly from December (1.02 MGD) to 1.00 MGD. The 12-month average daily flow permit limit is 1.2 MGD. This 1.00 MGD 12-month rolling average flow is the lowest since July 2008. The recent drier than normal weather pattern will likely contribute to keeping this rolling average flow rate steady with a possible slow creep upward with onset of typically wet spring weather.

More notable events or tasks accomplished in January include:

1) In January, plant staff, along with assistance from W&C's O&M specialist team, completed a facility-wide hazardous energy determination survey as part of an on-going effort to implement equipment specific lock out tag out procedures. These procedures establish minimum requirements for the control of hazardous energy whenever maintenance or servicing activities are performed on a piece of equipment. Electrical energy is the most common hazard workers must consider when working on equipment but compressed air, spring tension(kinetic energy), hydraulic pressure, chemical release, and thermal hazards, and their isolation or control, are all also considered under this safety program.

2) On January 11, plant maintenance personnel took ultra violet disinfection system Bank B out of service to investigate a signal from the facility's SCADA system that two of the bank's ten lamps were not operating. The bank was racked out, and upon close inspection, a lamp was found to be cracked in two pieces. Ultimately, this lamp was replaced and the adjoining lamp, that had previously been out but still good, also returned to normal operation. Typically, only one of three available lamp banks is on at a time while two banks sit off in auto standby. After two years of rotating operation, all lamps have accumulated between 6000 and 6300 hours of operation. The manufacturer recommends that lamp replacement at 12000 hours of operation to avoid poor disinfection system performance (low lamp output).



UV Bank B racked out for lamp replacement and quartz sleeve cleaning *Cracked lamp pulled out from quartz sleeve on UV Bank B*

January '10 WWTP MOR

Maintenance Management

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

- a) complete hazardous energy survey for all facility equipment as part of lock out tag out program update.
- b) replace broken lamp on ultra violet disinfection system bank B. Also, perform bank B quartz lamp sleeve cleaning and inspection.
- c) perform preventive maintenance inspection and annual oil change on aerated sludge blower unit #1.
- d) disassemble CoMag polymer solution makeup unit, clean components including polymer solution discharge line and neat polymer suction strainer replacement, then reassemble and return to continuous duty.
- e) replace CoMag motor control panel circuit breaker with a higher tolerance unit capable of passing instantaneous transformer in-rush current without tripping.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.00 MGD (12-month. Avg.)	1.2 MGD	Jan. avg. =1.032 MGD
BOD5 (mg/l)	5 mg/l	30 mg/l	98% average BOD removal in Jan.
TSS (mg/l)	7 mg/l	30 mg/l	97 % average TSS removal in Jan.
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	Daily max. of 4 cfu/100ml on Tue. 1/5
Phosphorus	0.66 mg/l	1.0 mg/l Nov.'09 – Mar. '10	0.84 mg/l daily max. on Thu. 1/14
Total Ammonia Nitrogen	.55 mg/l	Report Only	.97 mg/l daily max. on Thu. 1/14

*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 0.66 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
01/18/10	12:50 pm	Power Failure	Brief power bump resulted in a handful of drive and panel faults. The on call operator responded on site and reset equipment without incident.

Septage Receiving

WWTP Septage Receipts in gallons

	2010	2009	2008
January	32,500	10,500	22,750
February		41,250	60,300
March		83,250	55,550
April		168,250	152,300
May		150,900	135,150
June		151,450	126,450
July		138,500	117,000
August		137,750	142,400
September		203,750	219,950
October		172,400	262,900
November		155,400	165,300
December		109,600	104,050
Annual Totals:	32,500	1,523,000	1,636,000

Sludge Production

During December, 117,000 gallons of liquid sludge, equivalent to 17.79 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons /dry tons

	2010	2009	2008
January	89,000/15.61	107,500/16.71	112,227/20.15
February		86,000/14.13	107,124/18.35
March		99,000/17.56	98,500/17.97
April		153,000/23.94	90,000/17.98
May		170,670/24.27	107,000/19.74
June		153,000/20.83	98,500/17.76
July		126,000/20.57	117,000/20.98
August		76,376/11.81	99,000/16.51
September		126,000/21.65	98,000/16.82
October		99,000/16.03	108,000/18.54
November		99,000/16.51	80,500/12.62
December		117,000/	126,000/18.46
Annual Totals:	89,000/15.61	1,412,546/214.01	1,241,851/215.88