

Monthly Operating Report
August, 2009
Concord Wastewater Treatment Plant
Operated by Woodard & Curran

Date: September 14, 2009

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

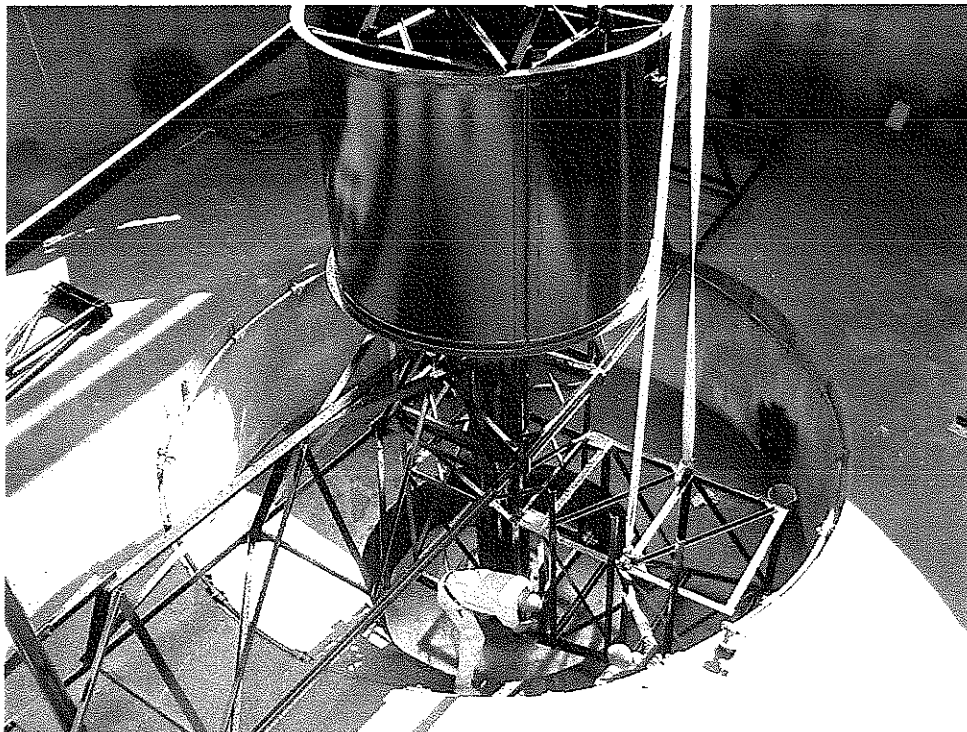
From: Michael Thompson and Staff

Key Activities This Month/Capital Program

During August all treatment processes were either operational or in ready standby excluding the #1 primary clarithickener which was offline until 8/85/09 for sandblasting/painting and hardware rehabilitation and the headworks detritor that was offline from 8/24 through the end of August for the same work. Flow through the facility in August averaged 0.92 million gallons per day (MGD) and the permit critical 12-month average flow now stands at 1.09 MGD. The 12-month average daily flow permit limit is 1.2 MGD. This 12-month rolling average flow for the three previous months (May-July) had been 1.10. The relatively normal to dry late-summer precipitation will likely result in this average flow remaining steady or dropping slightly for the next couple of months.

More notable events or tasks accomplished in August included:

1) The capital improvement project to provide sandblasting, painting, and hardware rehabilitation on both primary clari-thickeners and the grit detritor continued in earnest in August. Contractors Hemi Enterprises and Lydon Millwrights are proceeding with this contract with the Town, targeting a September project completion (weather permitting). It is anticipated that this project will provide roughly another ten years of operating service before another structural rehab would be considered.



On August 14th Lydon Millwrights works to reinstall rehabbed sludge collector in the #1 primary clari-thickener.

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2) Plant staff worked with Woodard & Curran operations specialists to identify and demonstrate a new computerized maintenance management program for the WWTF. *ERPortal* automates the key areas of water-wastewater maintenance: work order management, preventative maintenance, and parts and tools management. We are currently working to transfer the old CMMS database to the *ERPortal* software and reconfigure the equipment nomenclature to a more intuitive and user-friendly format. This program will be server based thus providing more reliable data backup, technical support, and user access.

Maintenance Management

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

- a) painting and rigging contractors in throughout August to work on capital project to sandblast, paint, and rehab select mechanical/structural components in both primary clarifiers and the grit detritor.
- b) complete scrape, apply rust transformer, prime, and finish paint grit room ductile iron plumbing.
- c) work with software firm *ERPortal* on the installation and trial of new computer maintenance management software.
- d) clear cement/mortar from the discharge check valve on the #2 M2 backwash sump pump.
- e) replace grease plugs with grease relief fitting on the three tertiary lift pumps and purge with fresh grease.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.10 MGD (12-month. Avg.)	1.2 MGD	August avg. = 0.919MGD
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in August
TSS (mg/l)	3 mg/l	30 mg/l	99 % average TSS removal in August
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All f-coliform tests in August showed 0 colonies.
Phosphorus	0.18 mg/l	0.20 mg/l Apr. '09 – Oct. '09	0.25 mg/l daily max. on Wed. 8/12
Total Ammonia Nitrogen	0.93 mg/l	Report Only	1.21 mg/l daily max. on Tue. 8/25

*cfu = coliform forming unit or colony.

There were no NPDES permit exceedances during August at the Concord WWTP.

During August, 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 August is 0.18 mg/l, thereby meeting the CWWTP's permit limit not to exceed 0.20 mg/l TP.

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

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Septage Receiving

During August, the facility received 137,750 gallons of septage from Concord residences and businesses.

WWTP Septage Receipts in gallons

	2009	2008	2007
January	10,500	22,750	61,850
February	41,250	60,300	55,000
March	83,250	55,550	48,550
April	168,250	152,300	127,000
May	150,900	135,150	153,800
June	151,450	126,450	128,750
July	138,500	117,000	159,050
August	137,750	142,400	140,250
September		219,950	112,250
October		262,900	199,700
November		165,300	179,950
December		104,050	42,000
Annual Totals:		1,636,000	1,408,150

Sludge Production

During August, 76,376 gallons of liquid sludge, equivalent to 11.81 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons / dry tons

	2009	2008	2007
January	107,500/16.71	112,227/20.15	97,500/12.83
February	86,000/14.13	107,124/18.35	89,500/11.94
March	99,000/17.56	98,500/17.97	99,000/12.91
April	153,000/23.94	90,000/17.98	143,500/21.55
May	170,670/24.27	107,000/19.74	170,200/26.40
June	153,000/20.83	98,500/17.76	152,000/21.29
July	126,000/20.57	117,000/20.98	161,500/23.60
August	76,376/11.81	99,000/16.51	143,500/21.31
September		98,000/16.82	126,000/15.27
October		108,000/18.54	230,614/30.28
November		80,500/12.62	128,669/21.13
December		126,000/18.46	140,555/22.69
Annual Totals:		1,241,851/215.88	1,682,535/241.2

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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 Alarm Log

Date	Time	Alarm Source	Observations/Corrective Action/Comments
01/03/09	11:21 am	Intrusion	Headworks building door not properly latching following installation of new weather security strip by facility upgrade contractor. High wind rocked door – setting off alarm. Plant staff worked on weather strip to improve door latching.
01/07/09	7:45 pm	Hi Effluent Turbidity	Recent M2 backwash cycles producing very brief jump in turbidity as forward flow resumes. Solution is to shorten time between backwash cycles until overall treatment performance improves with slight operational adjustments over coming days.
02/08/09	10:26 am	Intrusion	High wind blew open addition door. Plant staff already on the way for normal weekend rounds, checked door and securely locked. Contractor made aware of need to rework this as well as other facility upgrade doors and locksets.
Various times in March		HVAC Common alarm	Faulty operation of plant boilers-particularly boiler #2-causing a brief dip in plant hot water loop temperature. Lag or backup boiler reliably responded and automatically brought hot water loop temp back above alarm setpoint. Boiler install vendor and others continue to monitor/troubleshoot plant heating system.
04/09	NA	NA	No after hours alarms in April
5/27/09	7-9pm	CoMag eff pH	pH meter inaccurately reading –required cleaning and calibration. Caustic pumps checked for normal operation.
6/20/09	2 pm	CoMag low eff pH	Both caustic feed pumps to CoMag effluent had become air bound. On call operator came on site and bled air from pump and restored normal auto feed of caustic based on pH input from SCADA.
07/09	NA	NA	No after hours alarms in July.
08/09	NA	NA	No after hours alarms in August.