Monthly Operating Report
June, 2010
Concord Wastewater Treatment Facility
Operated by Woodard &Curran

Date: July 14, 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 June all treatment processes were either operational or in ready standby. Flow through the facility in June averaged 0.83 million gallons per day (MGD) and the permit critical 12-month average flow held steady at 1.16 MGD. The 12-month average flow permit upper limit is 1.2 MGD. This 0.83 MGD average daily flow in June is the lowest average monthly flow since June 2009 when flow averaged 0.82 MGD. This low flow is primarily attributed to a turn toward relatively dry weather in June.

More notable events or tasks accomplished in June include:

1.) On June 3rd , Matt Clooney began working at the treatment facility as part of Woodard & Curran's new O&M summer intern program. Matt, along with two other fellow classmates from Minuteman Regional High School class of 2010, is working at several W&C operated facilities in Massachusetts. Matt will work two days per week at the Concord WWTF and two days per week at the Acton WWTF. The goal of this program is to give motivated new-comers a chance to work in the field for several months. Matt comes with training in both water and wastewater treatment facility operation thanks to the curriculum offered at the regional high school. Presently Matt holds a Mass. Grade 2 wastewater operator's license. While we expect Matt to be off to college this fall, we hope that this summer's experience in Concord and Acton will inspire Matt to give wastewater treatment facility O&M serious consideration when he is choosing a career.

Matt Clooney, O&M summer intern being shown around the CWWTF by Mike Thompson

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2.) Plant staff worked with Cambridge Water Technology (CoMag developers) to identify three areas of the CoMag process that would benefit from changes in the computer program logic that automatically controls CoMag. CPW reviewed and approved these changes and their implementation began in June. Specifically, these improvements include; a) *sludge batch wasting* whereby CoMag sludge is thickened with the goal of reducing the volume of sludge generated and thus reducing sludge disposal costs, b) *trim alum dose on turbidity* whereby the coagulant fed to the plant for phosphorus removal is primarily based on the flow rate through the facility, but also fine tuned based on effluent turbidity with the goal of optimizing alum addition, and c) *provide a small boost in polymer at low flow* to ensure CoMag settling tank influent contains a well formed and fast settling floc across all flow rates.

Maintenance Management

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

a) install new stainless steel drive chain on magnetite recovery drum #1.
b) install an underground drain line leading from the headworks roof gutter downspout to a graveled area of the plant yard to prevent flooding of electrical pull boxes in the vicinity of the downspout.
c) begin dismantling the bulb wiper assembly on UV bank A in an effort to ascertain replacement parts needed to restore system to reliable operation.
d) complete installation of guard rails and toe boards on grating/platforms recently installed over the CoMag reaction tanks.
e) begin installation of RDT filtrate sump splash/foam guard in an attempt to eliminate false well level signals to pump control panel.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.16 MGD (12month avg)	1.2 MGD	June avg. = 0.83 MGD
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	1 cfu*/100ml	200 cfu/100ml	All plate counts were zero in June
Phosphorus	0.19 mg/l	0.2 mg/l Apr. – Oct. '10	0.26 mg/l daily max. on both Wed.6/2 & Thu. 6/3
Total Ammonia Nitrogen	0.49 mg/l	Report Only	0.61 mg/l daily max. on Thu. 6/3

**cfu =coliform forming unit or colony.*

Over the week of June 6, the Concord WWTF conducted the 2010, 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 also >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.

Additionally, 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
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.
2/10	NA	None	NA
3/10	NA	None	NA
4/10	NA	None	NA
5/15	8:45am	Intrusion	An internal motion detector went off on this quiet Saturday morning but follow-up onsite inspection by both plant staff and police found no signs of a problem- i.e. false alarm.
6/10	NA	NA	NA

Septage Receiving

Te Concord WWTF receives septage only from in-Town sources. A total of 184,950 gallons of septage was received at the Concord WWTF in June.

WWTP Septage Receipts in gallons

	2010	**2009**	**2008**
January	32,500	10,500	22,750
February	25,750	41,250	60,300
March	171,750	83,250	55,550
April	211,500	168,250	152,300
May	125,950	150,900	135,150
June	184,950	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:	752,400	1,523,000	1,636,000

Sludge Production

During June, 97,980 gallons of liquid sludge, equivalent to 15.76 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	90,000/16.81	86,000/14.13	107,124/18.35
March	90,000/15.65	99,000/17.56	98,500/17.97
April	135,000/23.57	153,000/23.94	90,000/17.98
May	97,980/15.76	170,670/24.27	107,000/19.74
June	99,000/18.28	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		117,000/17.79	126,000/18.46
Annual Totals:	600,980/105.68	1,421,546/223.58	1,241,851/215.88