

**Monthly Operating Report
January, 2012
Concord Wastewater Treatment Plant
Operated by Woodard & Curran**

Date: February 21, 2012

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 1.21 million gallons per day (MGD) and the permit critical 12-month average flow crept up to 1.3 (1.25) MGD. The permit upper limit for the 12-month average flow is 1.2 MGD. This is the first time in at least ten years that the 12-month average flow has been exceeded. Much of this permit exceedence has roots in the very high flow that occurred in the extraordinarily wet/saturated ground month of March 2011.

More notable events or tasks accomplished in January include:

1.) The #2 septage copper pump was taken offline on January 4 due to a significant leak observed around the area of the pump mechanical seal. Upon further pump dismantling it was discovered that the carbon faces within the seal had broken and a seal replacement or rebuild was needed. During January, the #1 chopper pump transferred all septage from the septage holding tank to the influent flow at the facility headworks. The failed seal was sent to a rebuild facility where they are to determine the feasibility and cost to install just new carbon faces while we also seek a quote for a wholly new seal from the pump manufacturer.



One of the two Siemens odalogs installed at the WWTF from 12/6/11 -1/6/12.

2.) From December 6 until January 6, two odalogs were installed at the WWTF. Siemens provided these battery operated devices to take measurements of hydrogen sulfide levels at the headworks influent channel and the splitter box upstream from the trickling filters. At the end of the sampling period Siemens removed the devices for data download at their offices. We now have a copy of that data and a brief commentary from Siemens regarding what next steps they suggest. These include a more in-depth odor sampling effort, hiring an odor specialist to assist with further odor source identification and remedy, and the implementation of a demonstration scale (temporary) odor/corrosion control chemical feed into the wastewater stream. W&C will sit down with the Town and Siemens in the near future to discuss these proposed options.

January '12 WWTP MOR

Maintenance Management

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

- Subcontractor *Weld Power* performed their very first preventive maintenance service inspection of the facility's 400 kW diesel generator.
- Isolated then removed the #2 septage chopper pump in order to establish the condition of the apparent seal leak that developed within the last month.
- Installed fiberglass insulation in the ceiling over the Maintenance Manager's office and a along several exposed roof beams over the exterior walls of the Control Building.
- Injected epoxy into a crack that developed on the RDT polymer pump head then reinstalled and returned to service following epoxy curing.
- Fabricated and installed a new mixer support bracket on the CoMag process polymer tote.

Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	1.3 MGD (12month avg)	1.2 MGD	Jan. avg. = 1.21 MGD Max. Daily Flow = 1.345MG
BOD5 (mg/l)	3 mg/l	30 mg/l	99% average BOD removal in January
TSS (mg/l)	5 mg/l	30 mg/l	98% average TSS removal in January
Coliform, Geo.Mean #/100ml	1 cfu*/100ml	200 cfu/100ml	All daily f-coliform counts were actually 0 colonies/100 throughout January
Phosphorus	0.48 mg/l	1.0 mg/l Nov '11– Mar '12	0.52 mg/l daily max. occurred on Tue. 2/17 & 2/24
Total Ammonia Nitrogen	1.64 mg/l	Report Only	2.07 mg/l daily max. on Tue. 1/10

*cfu = coliform forming unit or colony.

The 12-month rolling average effluent flow, including January 2012, reached 1.25 MGD. This flow subsequently rounds up to 1.3 MGD for entry onto the DMR as that document specifies flow to one position to the right of the decimal point. This reported flow of 1.3 MGD exceeds the facility's permit of 1.2 MGD as a 12-month running average.

Additionally, throughout January the Concord WWTF performed continuous two-stage total phosphorus (TP) removal using aluminum sulfate. First stage chemical TP treatment occurred in the two secondary clarifiers, while second stage TP treatment took place within the CoMag® advanced treatment process. The monthly average effluent TP concentration in January is 0.48mg/l, thereby meeting the CWWTF's winter permit limit not to exceed 1.0 mg/l TP as a monthly average.

Finally, 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
Jan. '12	Various	Intrusion	South Clarifier Rm. single door triggered several nuisance intrusion alarms in January. Plant personnel replaced wiring to the magnetic pickup on the door and slightly adjusted the position of the pickup- so far so good.

January '12 WWTP MOR

Septage Receiving

The Concord WWTP receives septage only from in-Town sources. A total of 56,000 gallons of septage was received at the Concord WWTP in January.

WWTP Septage Receipts in gallons

	2012	2011	2010
January	56,000	44,050	32,500
February		31,750	25,750
March		102,950	171,750
April		139,750	211,500
May		113,500	125,950
June		130,000	184,950
July		73,750	90,800
August		69,500	173,250
September		98,750	182,250
October		82,250	210,250
November		90,250	194,100
December		117,250	132,750
Annual Totals:	56,000	1,093,500	1,735,800

Sludge Production

During January, 112,896 gallons of liquid sludge, equivalent to 17.12 dry tons, was transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

WWTP Sludge Production in gallons /dry tons

	2012	2011	2010
January	112,896/17.12	98,309/16.78	89,000/15.61
February		72,916/13.5	90,000/16.81
March		72,617/13.89	90,000/15.65
April		81,000/14.90	135,000/23.57
May		108,000/27.85	97,980/15.76
June		108,000/19.67	99,000/18.28
July		106,060/17.69	99,000/16.81
August		135,224/18.83	108,000/18.61
September		108,008/15.10	106,160/17.88
October		141,003/23.05	107,558/17.31
November		114,905/20.28	142,500/21.18
December		105,573/18.56	134,750/21.73
Annual Totals:	112,896/17.12	1,251,615/205.18	1,298,945/219.20