

**Monthly Operating Report
January, 2013
Concord Wastewater Treatment Facility
Operated by Woodard & Curran**

Date: February 19, 2013

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

From: John Parkhurst 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 1.0 million gallons per day (MGD) and the permit critical 12-month average flow dropped slightly to 0.93 MGD. This is the 11th consecutive month that the 12-month average flow dropped and moved further from the 1.20 MGD limit for 12-month average flow.

Events that are more notable or tasks accomplished in January include:

January 30th, 2013: At 6:56 PM the effluent flow meter lost power due to a failed transformer in the brick building by the effluent parshall flume. A plant water pipe burst in the room submerging the transformer causing the loss of power. A new transformer was installed the following day and restored power at 2:15 PM January 31st, 2013.



Newly Installed Transformer.

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Health and Safety Activities or Training:

During January, all plant staff participated in a 30 minute on site safety meeting on "Chemical Receiving Safety".

Maintenance Management

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

January 1st, 2013: Plant staff responded to a security alarm. Nothing found out of place, system reset, and the alarm company notified.

January 10th, 2013: Plant staff cleaned settling tank weirs and final effluent weirs.

January 11th, 2013: Plant staff cleaned and greased trickling filter distribution arms.

January 18th, 2013: Plant staff removed sump pump #1 in RDT wet well for service. Pump was later sent to Flygt Pump Co. for repairs.

January 22nd, 2013: Primary clarifier-thickener arm tripped out on over load. Staff identified a thick sludge condition near the bottom and removed using the RDT. The collector arm torque indicator restored to normal after drawing thick sludge out with RDT.

January 22nd, 2013: Load shedding event from 3:45 PM to 6:45 PM. Power transfer and restoration went on without issue.

January 30th, 2013: At 6:56 PM the effluent flow meter lost power due to a failed transformer in the brick building by the effluent parshall flume. A plant water pipe burst in the room submerging the transformer causing the loss of power. A new transformer was installed the following day and restored power at 2:15 PM January 31st, 2013.

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Environmental Compliance

Parameter	Monthly Avg.	Permit Limit	Notes
Flow, MGD	0.93 MGD (12-month avg.)	1.2 MGD	December avg. = 1.0 MGD Max. Daily Flow = 1.14 MG on Fri. 01/11
BOD5 (mg/l)	4 mg/l	30 mg/l	99% average BOD removal in January
TSS (mg/l)	7 mg/l	30 mg/l	98% average TSS removal in January
Coliform, Geo.Mean #/100ml	5 cfu*/100ml	200 cfu/100ml	31 f-coliform counts daily max on Thur. 01/31
Phosphorus	0.5 mg/l	1.0 mg/l Nov '12– Mar '13	0.7 mg/l daily max. occurred on Mon. 01/28
Total Ammonia Nitrogen	0.55 mg/l	Report Only	0.7 mg/l daily max. on Mon. 01/07

*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 0.5mg/l, thereby meeting the CWWTP's winter permit limit not to exceed 1.0 mg/l TP as a monthly average.

At 6:56 PM on January 30th, 2013 the effluent flow meter lost power due to a failed transformer in the brick building by the effluent parshall flume. A plant water pipe burst in the room submerging the transformer causing the loss of power. A new transformer was installed the following day and restored power at 2:15 PM January 31st, 2013. Due to the power failure the daily flow reading was not recorded fully on the 30th and the 31st. The flow reading instead for the 30th was calculated using the previous 5-day average January 25th – 29th. Furthermore, the flow reading instead for the 31st was calculated using the following 5-day average February 1st – 5th.

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. The events occur while the plant is unmanned and while both the plant's SCADA system and The *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 WWTF Off-Hours Alarm Log

Date	Time	Alarm Source	Observations/Corrective Action/Comments
Feb. 11, 2012	3:28 AM	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator as the SCADA system was inaccessible too.
Mar. '12	NA	NA	No off hours alarms in March.
Apr. 29, '12	10:30 am	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing weekend (Sat.) rounds.
May '12	NA	NA	No off hours alarms in May.
Jun. 17, '12	8:30 PM	Numerous	Plant water alarm came in. Plant staff cleaned intake screens and reset system. (All OK)
Jul. 28, '12	8:00 AM	Numerous	A very brief loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing weekend (Sat.) rounds.
Aug. 5, '12	8:00 AM	Numerous	Corridor motion detectors triggered nuisance alarms. Staff reset alarm - so far so good.

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Sept. 9, '12	8:00 AM	Numerous	Intrusion alarm clarifier room south motion sensor- no apparent reason other than windy outside.
Oct. 29, '12	5:45 PM	Numerous	A loss of utility power lead to a number of motor faults that required reset by an onsite operator who was performing Hurricane Sandy coverage.
Nov '12	NA	NA	No off hours alarms in November.
Dec '12	NA	NA	No off hours alarms in December.
Jan 30, '13	6:56 PM	Numerous	Plant water alarm due to break in the plant water feed line in the brick building by the effluent parshall flume.

Septage Receiving

The Concord WWTF receives septage only from in-Town sources. A total of 27,500 gallons of septage received at the Concord WWTF in January.

WWTF Septage Receipts in gallons:

	2013	2012	2011
January	27,500	56,000	44,050
February		34,000	31,750
March		83,000	102,950
April		111,500	139,750
May		110,250	113,500
June		112,750	130,000
July		137,750	73,750
August		71,000	69,500
September		84,250	98,750
October		124,150	82,250
November		111,700	90,250
December		93,500	117,250
Annual Totals:	27,500	1,129,850	1,093,500

Sludge Production

During January, 109,811 gallons of liquid sludge, equivalent to 22.44 dry tons, transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) in Millbury, Massachusetts.

	WWTF Sludge Production in gallons /dry tons		
	2013	2012	2011
January	109,811/22.44	112,896/17.12	98,309/16.78
February		62,183/11.1	72,916/13.5
March		99,452/13.71	72,617/13.89
April		97,796/11.75	81,000/14.90
May		107,500/16.66	108,000/27.85
June		116,530/18.53	108,000/19.67
July		116,141/22.36	106,060/17.69
August		113,340/18.71	135,224/18.83
September		104,302/18.64	108,008/15.10
October		123,425/20.70	141,003/23.05
November		80,786/14.44	114,905/20.28
December		80,804/16.58	105,573/18.56
Annual Totals:	109,811/22.44	1,214,155/200.34	1,251,615/205.18