NAUGATUCK PROJECT
ANNUAL REPORT

CONTRACT YEAR 13:
JULY 2014 THROUGH JUNE 2015

VEOLIA WATER NORTH AMERICA – NORTHEAST, LLC
NAUGATUCK ENVIRONMENTAL TECHNOLOGIES, LLC

PREPARED BY:

VEOLIA WATER NORTH AMERICA NORTHEAST, LLC

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1. Executive Summary:

In CY13, the facility treated 1.825 billion gallons of wastewater, 9.5 million gallons of septage, accepted 56.6 million gallons of liquid sludge, and 57,361 wet tons of cake sludge. Combined from all of these sources, 26,690 dry tons of biosolids were incinerated.

In CY13, the Connecticut Department of Energy and Environment issued the NPDES permit as the original NPDES permit expired August 6, 2006. The new permit contains additional monitoring requirements that were not in the original contract with Veolia. For example, there are additional testing requirements such as bi-monthly ash lagoon monitoring. In addition, the permit contains limits on phosphorous, which will require study, by a consultant to determine the most economical approach for treatment.

In CY13, another raw sewage pump was replaced. The primary tanks despite having new sludge chopper pumps due to a lack of proper headwork's still require frequent repairs. The peak high flow trend line continued to increase throughout CY13. A chart in Tables 1A and 1B depicting average monthly flow and average daily flows have been included in the report.

As in previous years, odor abatement continues as a strong and ongoing priority. The number of odor complaints has continued to decline. For example, in 2009 there were 127 total odor complaints. The CY13 odor complaint total was 12. CTDEEP odor inspectors have not documented an onsite odor in years. Those inspectors randomly visit the site unannounced. As in previous years, some of the odor complaints remain unsubstantiated or not related to the facility. Some do not correlate with wind direction; some were from home laterals causing the odor, and some were from the Oxford/Naugatuck town line area from the Oxford sewer force main where it enters the Naugatuck main. The plant staff assisted Oxford personnel to bring the Oxford odor issue under control however there are still odor complaints attributed to that force main.

Unfortunately, sludge disposal pricing remains at depressed levels that have not increased in recent years. Sludge pricing decreased in CY13, as the economy still has not fully recovered and competition from other sludge processors and landfills. A major cake customer was lost under bid due to the competitive pricing and the change in disposal acceptance policy of Hartford MDC. The MDC two years ago decided to accept out of state sludge in order to fill their excess capacity. The extra sludge also helps generate additional electricity from their incinerator Cogen facility. The Naugatuck facility has had difficulty replacing that volume. In Connecticut, haulers are limited in max weight loads as opposed to neighboring states. That disadvantage further erodes pricing as neighboring states have lower transportation costs. Landfills continue to have low tipping fees because of less trash being generated, thus a landfill is at times a more economical option for some communities.

The facility hosted the Borough's summer intern for a day allowing him an opportunity to see how the facility and collection system operate. High school students and some instructors from the High School toured the facility on student government day.

Mr. Batorski continued as Plant Manager during CY13 with Christopher Makuch as the Assistant Plant Manager. Both Mr. Batorski and Mr. Makuch are certified/licensed Connecticut Grade IV wastewater plant operators. Together, they possess over 50 years of wastewater treatment and fluidized bed incineration experience. In CY13, the Maintenance Planner position was reduced to part time. A plant engineer was hired (no change in staffing) to assist with permit compliance reporting, facility planning, and new incinerator emission upgrades. The Summer Intern Position was not filled in CY 13.

As in previous contract years collection system work increased, with continued repair focus and attention to blockage and serviceability issues. The cold winter took a toll on clay sewers that were not sufficiently below the frost line.

The wastewater plant continued to operate well. The Biological Nutrient Removal (BNR) system as in previous years performed well despite abnormal influent flows due to Inflow and Infiltration (I&I).

In late August 2014, vandalism on a sewer line near Water Street in the Metro North right of way caused a major blockage. Rocks and other debris blocked a 20-inch diameter sewer. Several days were required to remove the rocks from the sewer. Bypass pumps were brought on site to assist pumping around the blockage. Total repair costs because of that blockage cost approximately $52,000

CCTV (close circuit television) of the sewer lines in the blockage area revealed that some of the golf course is drained into the sanitary system. Those additional inflows along with known storm sewer connections (Hoadley Street) and infiltration are some of the causes of the high flows at the facility during rain events. Those high flow events disrupt the biological process and have a major impact on the nitrogen credit costs in addition to increased raw sewage pumping costs.

In CY13, the 60 HP #2 raw sewage pump was replaced with an 85 HP submersible pump. This pump has a new 85 HP VFD and a hardened impeller (same as the previously installed pumps) better suited to handle the grit. New check valves and discharge piping was installed for this pump. In addition, another 115 HP raw sewage pump (due in Sept 2015) was purchased as a critical spare along with an 85 HP raw sewage pump (due in Dec 2015).

The abnormal maintenance costs continue to apply to the primary tank collector mechanisms and sludge storage tanks as the rocks and grit frequently cause the collectors in the primary tanks and grinder in sludge storage tanks to fail and wear out prematurely. The primary tank drain lines remain clogged as a direct result of rocks and grit, an uncontrollable circumstance. Repair of those lines was estimated at $50,000 several years ago and remain an ongoing discussion issue with the Borough.

Maintenance of those tanks takes longer as without working drains, the tanks must be manually pumped. Similarly, without working drains, the cleaning of those tanks also takes longer.

Odor abatement remains at significant and ongoing expense to eliminate or minimize odors. As previously stated, the number of odor complaints has continued to decrease. Potassium permanganate continues to be fed into the aeration tanks and sludge storage tanks to control odors. Misting equipment continuously sprays odor neutralization chemicals from approximately March through November in the cake truck unloading area. To further enhance odor control, an existing rooftop exhaust fan was replaced. While that original ventilation fan was located on the hot oil building roof, it drew air from that rooftop area. The new fan is located inside the hot oil room and draws air from the cake unloading area. A manifold was installed above the cake receiving bin so approximately 15,000 CFM air flow is continuously removed from that area. That air is directed into the hot oil room and eventually becomes makeup air for the fluidizing air blower (~10k cfm) and the secondary scrubber (~17k cfm). A second 5000 cfm fan was installed to continuously draw air from the lower section of the cake unloading area and discharge it into the Abel and Thermal dryer rooms. That air also eventually becomes makeup air for the fluidizing blower and secondary odor scrubber.

2. Wastewater Treatment Plant Performance Summary:

The plant performance was excellent throughout the contract year. There were no recorded plant bypasses and six minor Collection system bypasses. During CY 13 there was one Notice of Violation (NOV) recorded. The NOV was due to a failed elevator inspection. The inspector noticed that a hydraulic cylinder had a slight seal leak and that the most current operating certificate was not posted. All repairs were completed and the elevator was inspected and returned to service with the inspection sticker posted.

The BNR system (Jan – Dec 2014) generated effluent nitrogen discharges, averaging 232 pounds per day, resulting in approximately $19,837 nitrogen credits payment to the Borough.

Summer season average plant flow is approximately 3.5 MGD, which confirms the inflow and infiltration issue. During rain events, documented plant flows have exceeded 20 MGD. Kleinfelder Engineers was retained by the Borough to perform a study of the collection system, perform a facility plan, and review of emission equipment to achieve compliance with the new EPA emission regulations.

A summary of the plant's performance can be found in Table 1.
A graph of average daily plant flows is in Table 1A.
A graph of average monthly flows (Naugatuck, Middlebury, and Oxford) is found in Table 1B.

A summary of the plant's nitrogen removal performance can be found in Table 2.
A summary of all inflows and outside sources of septage and sludge to the facility can be found in Table 3.

Table 1: Plant Performance Summary

	Plant Flows (MGD)			CBOD		TSS		NH3		Eff	Aeration System					
Month	Avg	Max	Min	Inf	Eff	Inf	Eff	Inf	Eff	TN	MLSS	%VSS	SVI	MCRT	F:M	WAS Q
	5.0	**6.4**	**4.0**	**127**	**4**	**204**	**5.2**	**20.1**	**0.1**	**4.8**	**5195**	**76**	**77**	**12.0**	**0.05**	**39,682**
Jul-14	4.2	5.0	3.5	132	4	220	5	21.9	0.1	5.1	3629	75	68	8.6	0.07	12,010
Aug-14	3.4	4.1	3	152	4	255	5	26.7	0.1	4.9	4281	75	78	42.9	0.04	10,035
Sep-14	3.4	4.1	3.2	173	4	243	5	28.2	0.1	4.9	5187	65	105	4.3	0.01	62,271
Oct-14	3.8	4.9	2.1	172	4	235	5	26.3	0.1	5.3	4666	74	68	16.2	0.04	42,544
Nov-14	4.3	5.8	3.7	175	4	324	5	23.4	0.1	4.6	3394	78	64	27.8	0.08	7,786
Dec-14	6.2	10.5	4.8	105	4	180	5	15.5	0.2	4.8	5328	80	68	4.6	0.06	49,026
Jan-15	5.4	6.9	4.6	107	4	233	6	17.5	0.1	5.2	5459	79	72	12.4	0.05	22,210
Feb-15	4.7	5.3	4.2	136	4	202	6	18.3	0.1	5.5	5469	79	80	14.1	0.05	32,731
Mar-15	6.7	8.9	4.6	85	4	135	5	14.6	0.1	4.2	6205	76	88	2.9	0.04	57,350
Apr-15	7.4	8.7	6.4	73	4	120	5	10.7	0	4.4	5824	80	85	3.1	0.06	71,162
May-15	5.7	6.7	3.9	111	4	160	5	19.3	0.1	4.5	6567	73	85	2.7	0.08	62,483
Jun-15	4.7	6.4	4	103	4	145	5	18.2	0.1	3.9	6331	75	67	4.3	0.07	46,580

Table 1A: Plant Flow Summary

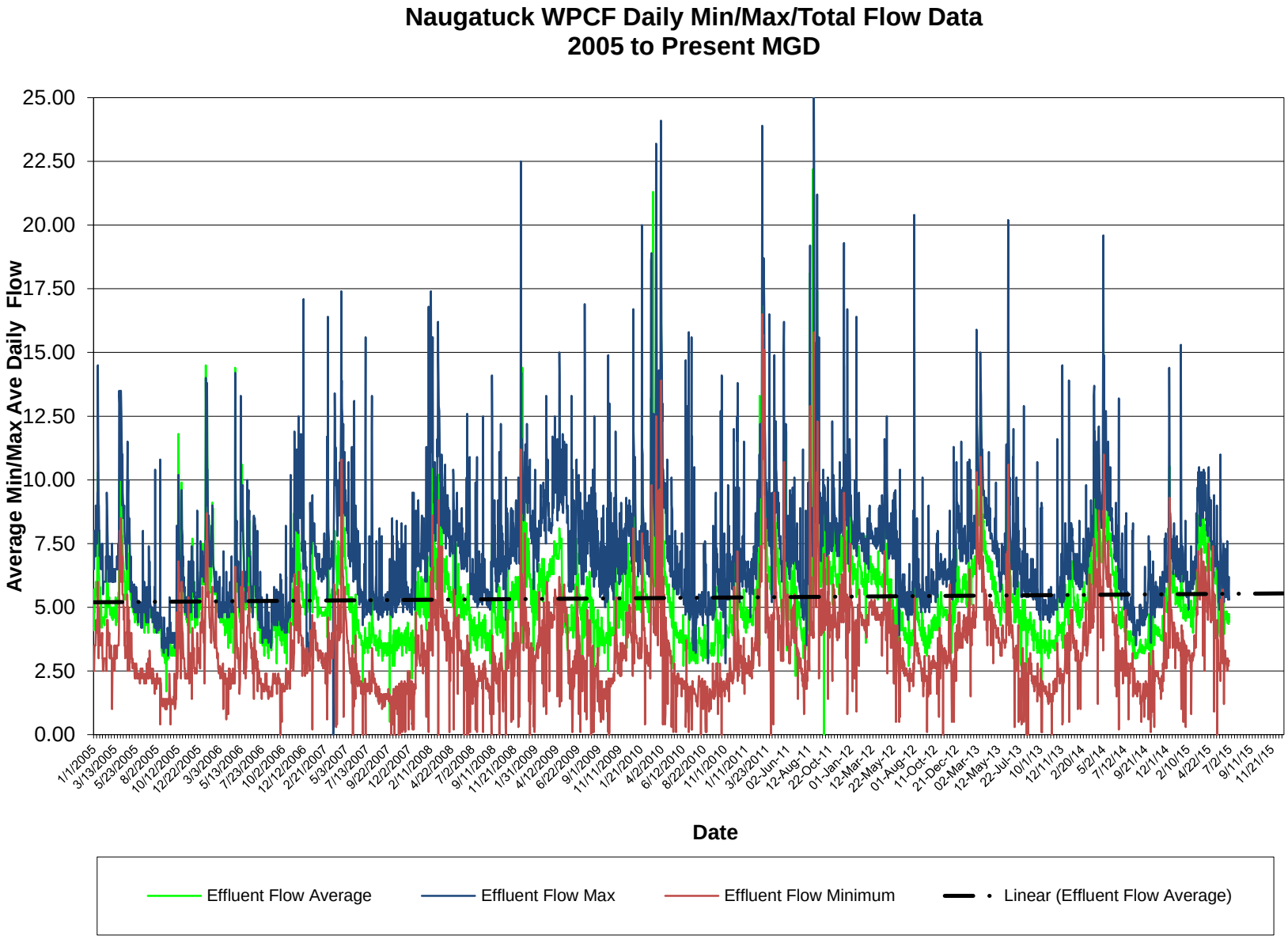


Table 1B: Plant Flow Summary

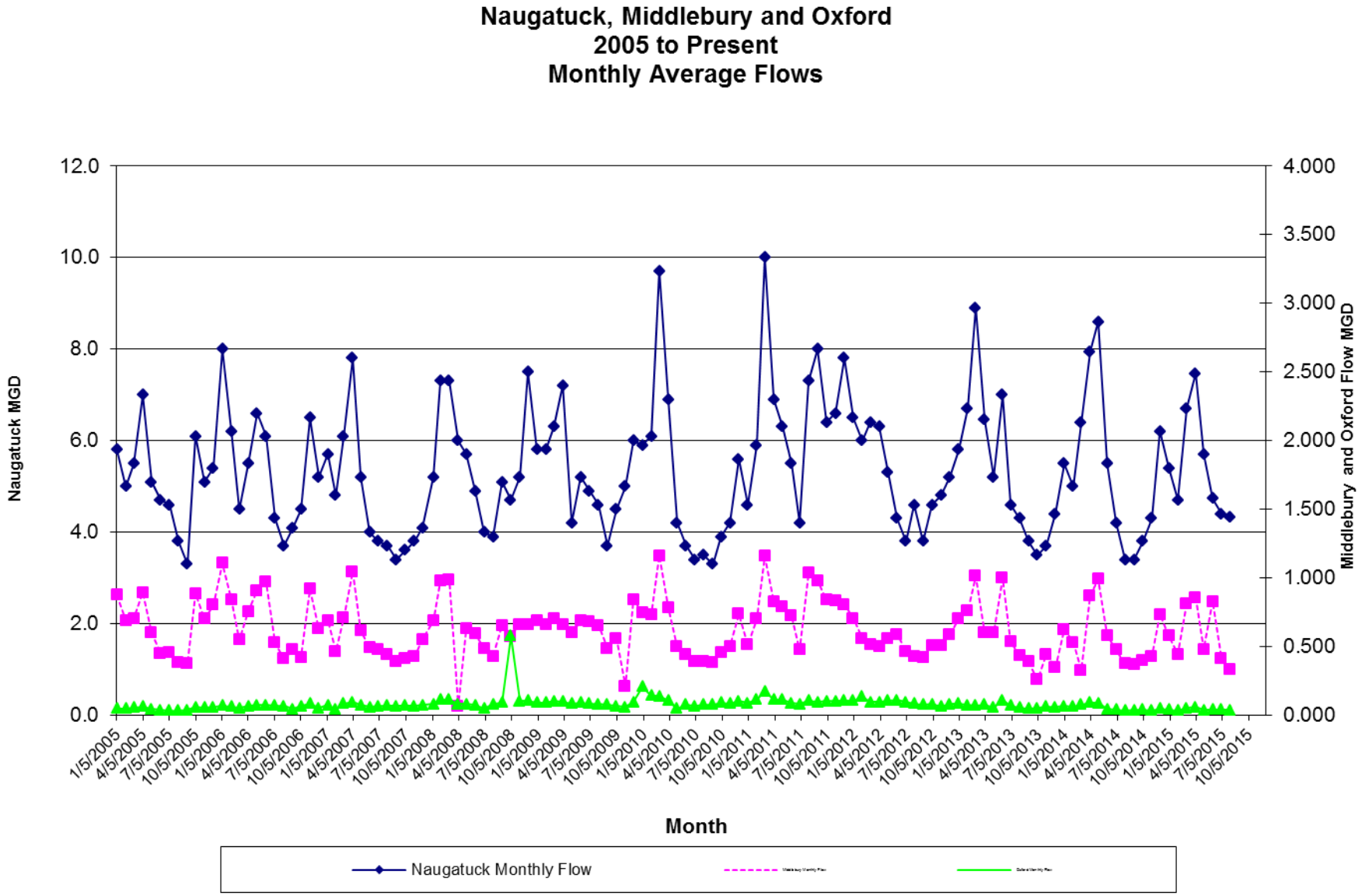


Table 2: Treatment Plant Nitrogen Removal Performance

	Avg Flow	Influent Avg TN	Influent Avg TN	Effluent Avg NH4	Effluent Avg TKN	Effluent Avg NO2	Effluent Avg NO3	Effluent Avg TN	Effluent Avg TN	TN Diff. From Limit	TN Credit Equiv. (1)
	mgd	mg/l	lbs/day	mg/l	mg/l	mg/l	mg/l	mg/l	lbs/day	lbs/day	lbs/day
12 Month Average	**5.0**	**34.2**	**1,326**	**0.22**	**0.00**	**0.00**	**3.21**	**4.8**	**198**	**-160**	**-96**
Jul '14	4.2	33.5	1,180	0.25	1.88	0.01	3.19	5.1	177	-181	-109
Aug '14	3.4	56.5	1,622	0.17	1.70	<0.01	3.23	4.9	139	-219	-132
Sep '14	3.4	44.8	1,280	0.19	1.65	<0.01	3.26	4.9	141	-217	-130
Oct '14	3.8	43.8	1,362	0.27	2.06	0.02	3.28	5.3	167	-191	-114
Nov '14	4.3	39.3	1,380	0.19	1.48	0.01	3.08	4.6	162	-196	-118
Dec '14	6.2	26.3	1,330	0.50	1.77	0.02	3.06	4.8	254	-104	-62
Jan '15	5.4	29.1	1,337	0.25	1.84	0.01	3.36	5.2	241	-117	-70
Feb '15	4.7	34.5	1,359	0.34	1.89	0.03	3.61	5.5	217	-141	-84
Mar '15	6.7	23.2	1,224	0.13	1.28	0.02	2.89	4.2	231	-127	-76
Apr '15	7.4	19.8	1,213	0.06	0.96	<0.01	3.42	4.4	270	-88	-53
May '15	5.7	30.9	1,482	0.14	1.22	0.03	3.27	4.5	219	-139	-84
Jun '15	4.7	28.2	1,141	0.11	1.01	<0.01	2.87	3.9	160	-198	-119
Maximum	**7.4**	**56.5**	**1,622**	**0.50**	**4.22**	**0.15**	**3.61**	**5.5**	**270**	**-88**	**-53**
Minimum	**3.4**	**19.8**	**1,141**	**0.06**	**0.11**	**<0.01**	**2.87**	**3.9**	**139**	**-219**	**-132**

Table 3: Septage Received and Middlebury/Oxford/Naugatuck Influent Flow Sources

	MGD			Septic			Total Free	Outside/Paid	Overall Total
Month	Naugatuck	Middlebury	Oxford	Middlebury	Naugatuck	Oxford	Septic	Septic	Septic
Jul-14	4.200	0.478	0.041	57,500	52,190	161,500	271,190	806,350	1,077,540
Aug-14	3.400	0.376	0.036	42,000	42,870	177,750	262,620	647,300	909,920
Sep-14	3.400	0.367	0.038	47,000	60,800	179,000	286,800	696,000	982,800
Oct-14	3.800	0.396	0.041	40,000	70,190	230,250	340,440	664,050	1,004,490
Nov-14	4.300	0.431	0.036	55,000	49,250	166,250	270,500	570,450	840,950
Dec-14	6.200	0.736	0.050	26,000	92,500	169,750	288,250	516,050	804,300
Jan-15	5.400	0.579	0.041	3,000	25,750	98,500	127,250	265,150	392,400
Feb-15	4.700	0.446	0.035	7,000	14,500	38,250	59,750	78,850	138,600
Mar-15	6.700	0.813	0.052	10,000	19,250	107,500	136,750	217,100	353,850
Apr-15	7.460	0.856	0.059	37,000	78,250	217,200	332,450	592,800	925,250
May-15	5.700	0.482	0.039	51,000	70,000	209,500	330,500	747,080	1,077,580
Jun-15	4.740	0.828	0.043	47,000	65,330	200,500	312,830	654,800	967,630
Average	5.0	0.566	0.043	35,208	53,407	162,996	251,611	537,998	789,609
Total	60.0	6.788	0.511	422,500	640,880	1,955,950	3,019,330	6,455,980	9,475,310

3. Incineration Performance Summary:

The incinerator continued to operate well with very low stack emissions. The incinerator was removed from service for less than one week for maintenance and returned to service.

New EPA emission standards require the incinerator to have upgraded emission systems operating by March of 2016. While the existing incinerator emissions system achieves many of the new limits, requirements that are more stringent are mandated for mercury, sulfur dioxide, and lead, thus additional emission controls are required. As of the date of this report, no equipment to achieve compliance with the new standards is on order nor has any additional testing scheduled. Time to design and complete the installation of the new equipment by the deadline is decreasing. A one-year extension may be possible from EPA if it can be demonstrated that a plan for compliance is in progress. If the updated emission equipment is not operable by the March 2016 deadline, without an approved extension from CTDEEP/EPA, the incinerator will have to be shut down.

Uptime of the incineration process continues at world class standards in this contract year. The incinerator averaged an uptime availability of over 94%, and averaged a daily throughput of 3.26 Dry Tons/hour, representing 88.8% of Capacity Utilization. In total, the incinerator processed 29,065 Dry Tons of sludge (max permit is 30,660 Dry tons). These values include the contribution of sludge generated within the treatment facility from the Naugatuck collection system and septage received. The available capacity for intake of biosolids from our customer base continues to decrease as we gain new customers to fill the incineration capacity. The majority of our customers still remain under contract, or under long-term service arrangements. A major cake customer was lost in CY 13 resulting in a significant loss of revenue. As in previous years, a small portion of total sludge accepted at the facility was derived from “spot market” customers. The drive for reducing spot market reliance increases certainty in our receipts and makes production planning much easier. The price for sludge disposal remains at rates similar to rates that existed in the early 1990’s. Competition from other disposal outlets such as Mattabassett District in Cromwell, CT, Synagro, and the Metropolitan District Commission (MDC) in Hartford, CT continues to hold disposal pricing at historic low levels. In addition, other incinerators have installed generators (cogen) on their incinerator exhaust stacks. Since they (MDC and Synagro, New Haven) are operating a cogen system and generating electricity, they have been able to reduce their prices for sludge disposal. In addition, MDC now accepts out of state sludge further increasing competition and driving down pricing.

The ratio of liquid sludge to cake sludge customers remains similar as previous years. In CY13, approximately 50% of all received sludge was in liquid form. At contract year-end, we were seeking to add further cake customer volumes to maintain capacity utilization. However, due to strong competition, additional volume has been secured only because of very aggressive pricing. A summary of merchant sludge and sludge processing can be found in Table 4 below.

Table 4: Incinerator and Merchant Sludge Source Summary

Month	FBI Uptime %	Avg Feed DTPD	Total DT	FBI % Total Cap	Fuel Oil Burned Gal	Estimated Ash WT Generated	Liquid Sludge Gallons	Cake Wet Tons
Jul '14	89.3	71.4	2,212	85.0	4,447	674	3,816,300	4763.3
Aug '14	91.3	72.9	2,259	86.8	3,604	647	3,195,300	4855.1
Sep '14	91.4	71.8	2,153	85.4	4,040	582	3,161,000	4758.7
Oct '14	96.8	79.5	2,464	94.6	2,055	637	3,986,000	5375
Nov '14	97.3	81.2	2,356	96.7	4,145	590	4,209,100	4666
Dec '14	91.3	76.9	2,384	91.5	4,604	628	4,692,700	5048.2
Jan '15	97.5	69.5	2,156	82.8	6,856	480	4,202,755	5345.44
Feb '15	96.9	60.7	1,700	72.3	17,236	451	3,845,920	4127
Mar '15	94.4	68.3	1,640	81.3	12,133	443	5,077,753	3182.12
Apr '15	98.0	78.6	2,359	93.6	10,663	683	5,869,057	5458
May '15	99.2	85.9	2,662	102.2	60	733	7,534,200	4841.8
Jun '15	95.3	78.3	2,348	93.2	1,686	703	7,033,710	4013.6
Avg/Total:	**94.9**	**74.6**	**2,224**	**88.8**	**5,961**	**604**	**56,623,795**	**56434.26**

Stack Compliance Testing:

The five-year stack test was completed on 09/17/14. Representatives of the Connecticut DEEP (Department of Energy and Environment) observe all stack tests. With the testing being performed at incinerator, firing rates at 3.15 DT/hr. or above 90% of our permit capacity limit (84 DTPD); all emissions parameters remain below current air quality limits. Under recently promulgated new EPA Clean Air Act Section 129 (CAA129) standards, the Naugatuck incinerator will be required to meet more stringent emission standards no later than May 20, 2016.

Table 6: Summary of 2014: Annual Stack Emissions Test

Parameter	**Permit Limit ***	**Actual result**	**% of limit**
Arsenic (ug/M^3)	**79.3**	**0.17**	**0.2144%**
Beryllium (ug/M^3)	**15.9**	**0.04**	**0.2516%**
Cadmium (ug/M^3)	**634.6**	**0.2**	**0.0315%**
Chromium (ug/M^3)	**3966.3**	**1.65**	**0.0416%**
Copper (ug/M^3)	**31730**	**1.57**	**0.0049%**
Lead (ug/M^3)	**4759.6**	**8.93**	**0.1876%**
Manganese (ug/M^3)	**31730.7**	**2.11**	**0.0066%**
Mercury (ug/M^3)	**1586.5**	**87.58**	**5.5203%**
Nickel (ug/M^3)	**7932.7**	**2.6**	**0.0328%**
Selenium (ug/M^3)	**6346.1**	**12.66**	**0.1995%**
Zinc (ug/M^3)	**157653**	**26.93**	**0.0171%**
Total Hydrocarbons (lb/dt)	**-**	**0.1**	
Sulfur dioxide (lb/dt)	**2.7**	**1.35**	**50.0000%**
Nitrogen oxides (lb/dt)	**2.9**	**2.7**	**93.1034%**
Carbon monoxide (lb/dt)	**1.4**	**1.14**	**81.4286%**
Particulate matter (lb/dt)	**1.3**	**0.02**	**1.5385%**

*Existing Permit Maximum Allowable Stack Concentration

4. **Collection System Summary:**

Work on the Collection System continued throughout the contract year. The Collections crew continues to utilize their wall mounted sewer map of the Naugatuck sewer system. They use color-coding to identify sewers in the Borough that have been cleaned/repaired. The “Six-Month List” of known troublesome areas of the collection system continues to be jetted and inspected twice during the contract year. As expected, some portions of the six-month list are deleted as the previously identified areas were no longer a problem and other problem areas were added. Several repairs completed in CY13 were performed to continue reducing the number of trouble locations. These troublesome areas were due to various issues such as lack of manholes for effective jetting/cleaning of sewers, replacement of very old sewer lines and repairs to failed/collapsed lines. A CCTV camera is utilized on a routine basis. Occasionally the crews will CCTV home laterals, time permitting per the request of a homeowner.

The number of vactor days exceeded the contract requirements. The total jetting footage has also increased over previous years. Root treatment consisted of 4,911 feet treated. Root

treatment also consists of routine use of the root cutter. The device is automatically used whenever routine jetting is not successful.

Table 7A details collections costs regarding the use of the vac truck. Alternative Resources has reviewed in CY11 and found acceptable the method used to calculate those costs.

Table 7: Summary of Collection System Operations

Month	Total Calls For Service	Calls due to Sewer Issue	Total Jetting Footage	Total Video Footage	Total Root Treatment Footage	Vactor Miles Driven	Vactor Engine Hours	Vactor Days on Road
14-Jul	1	3	16,158	1,555	3,551	1,054	60	14
14-Aug	2	0	9,270	925	0	631	36	14
14-Sep	3	1	23,105	0	0	1,038	62	18
14-Oct	0	0	16,743	0	0	733	49	12
14-Nov	1	0	11,260	300	100	1,232	60	12
14-Dec	3	1	24,221	130	40	1,062	96	21
15-Jan	5	2	7,520	705	220	1,099	55	17
15-Feb	3	0	4,877	500	0	623	35	10
15-Mar	6	2	19,155	1,359	100	1,295	72	16
15-Apr	7	4	9,300	1,863	400	899	49	15
15-May	3	2	15,047	9,569	340	729	43	12
15-Jun	5	0	29,863	1,892	160	938	59	15
Totals	39	15	186,519	18,798	4,911	11,333	673	176

Table 7A: Summary of Collection Jetting Costs

	Days on road	Total Jetting	Labor for days on road	Annual Vactor R/M cost/12	Annual Vactor Fuel/12	Total Month days out cost -labor & vactor	Total ave jetting cost= total labor+vactor/feet cleaned
Jul-14	14	16,158	**$ 9,387.84**	**$ 886.81**	**$481**	**$10,755.38**	**$0.67**
Aug-14	14	9,270	**$ 9,387.84**	**$ 886.81**	**$481**	**$10,755.38**	**$1.16**
Sep-14	18	23,105	**$ 12,070.08**	**$ 886.81**	**$481**	**$13,437.62**	**$0.58**
Oct-14	12	16,743	**$ 8,046.72**	**$ 886.81**	**$481**	**$9,414.26**	**$0.56**
Nov-14	12	11,260	**$ 8,046.72**	**$ 886.81**	**$481**	**$9,414.26**	**$0.84**
Dec-14	21	24,221	**$ 14,081.76**	**$ 886.81**	**$481**	**$15,449.30**	**$0.64**
Jan-15	17	7,520	**$ 11,399.52**	**$ 886.81**	**$481**	**$12,767.06**	**$1.70**
Feb-15	10	4,877	**$ 6,705.60**	**$ 886.81**	**$481**	**$8,073.14**	**$1.66**
Mar-15	16	19,155	**$ 10,728.96**	**$ 886.81**	**$481**	**$12,096.50**	**$0.63**
Apr-15	15	9,300	**$ 10,058.40**	**$ 886.81**	**$481**	**$11,425.94**	**$1.23**
May-15	12	15,047	**$ 8,046.72**	**$ 886.81**	**$481**	**$9,414.26**	**$0.63**
Jun-15	15	29,863	**$ 10,058.40**	**$ 886.81**	**$481**	**$11,425.94**	**$0.38**
Total/Ave	176	186,519	**$118,018.56**	**$10,641.70**	**$5,769**	**$134,428.98**	**$0.89**

5. Asset Management Program & Maintenance Summary:

Staff continues to focus on repairs and design improvements. For example, the following highlights are presented:

- The roof for the sludge storage tanks was repaired and resurfaced in Oct 2014.
- The diffusers in aeration tank #5 and #6 were replaced in October 2014.
- A new centrifuge feed pump and grinder was installed in August 2014.
- Both centrifuges were completely rebuilt by the manufacturer.
- A new air compressor was installed in Oct 2014. Two air compressors now provide compressed air as needed with automated operations.
- The north and south centrifuge and power packs were completely rebuilt by the factory.
- A chiller was installed to cool the Piller blower's internal coolant.
- Four aeration tank external mixers were installed.
- A new aeration tank internal return activated sludge was installed and the original one was rebuilt.
- New sections of sludge conveying systems were replaced.
- The SCADA system operating system was upgraded to the newest version. The XP SCADA computers were upgraded to the new Windows 8 computers.
- New stainless steel support brackets for return rails, new FRP return rails, wear strips; sprockets, drive chain etc. were installed in secondary tank #4.
- The #2 primary tank was completely rebuilt consisting of new stainless steel support brackets for the return rails, new wear strips, new FRP return rails, and new flights, sprockets and chains.
- Two ventilation fans; 15,000 cfm and 5,000 cfm were installed to continuously draw air from the merchant cake unloading area. That air is discharged into the dewatering building and used as makeup air for the secondary scrubber and fluidizing blower.

- Another chopper pump replaced a thickener rake drive.
- A gate was installed for the ash lagoon area.
- The 20,000 gallon #2 fuel oil tank and piping was cleaned.
- The SCADA system continues to be updated with Help Screens and pop up alarms.
- The primary scrubber recirculation pump was replaced and foul air fan was rebuilt.
- An Oracle based maintenance system remains in use.

Other major maintenance activities involved significant expenditures but do not appear within the Asset Registry. These included replacements and improvements to the SCADA/PLC equipment, addition to critical spare parts inventories, repairs to plant roadways, collection system pump station improvements, and continued plant-wide network communications upgrades.

Asset Management Plan

As summarized in Table 8, actual expenditures versus planned activity were quite different. These remains attributed to failures/needed rebuilds falling outside of predicted periods along with major repairs previously identified. Some CY13 scheduled items will be delayed to CY14 or later based on acceptable condition precluding need for planned rehabilitation in CY13.

Table 8: Asset Management Plan Expenditure Summary for CY13:

AMP001	wwmainpump1	$20,244	$7,317
AMP002	wwmainpump1motor	$6,500	
AMP003	wwmainpump2	$11,512	$66,714
AMP004	wwmainpump2motor	$5,600	
AMP005	wwmainpump3	$20,244	
AMP006	wwmainpump3motor	$6,500	
AMP007	wwmainpump4	$11,512	
AMP008	wwmainpump4motor	$5,600	
ADP009	drainagepump1	$16,700	
ADP010	drainagepump2	$16,700	
WWHVAC01	wetwell lower level AH	$12,500	
		Totals	**$74,031**

Asset#	PRIMARY SYSTEM	Reb/Rep Cost	CY13 Spend
AP001	pri1collectors	$72,000	
AP002	pri1drive	$12,000	
AP003	pri1pump	$8,000	
AP004	pri1trough	$5,000	
AP005	pri2collectors	$72,000	$15,728
AP006	pri2drive	$12,000	
AP007	pri2pump	$8,000	
AP008	pri2trough	$5,000	
AP020	muffinmonster1	$5,000	
AP021	primacerator1	$11,500	
AP022	primacerator1pmp	$7,000	
AP023	primacerator2	$11,500	
AP024	primacerator2pmp	$7,000	
AP025	muffinmonster2	$5,000	
		Totals	**$15,728**

Asset#	AERATION SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
ABHVAC01	Adminbasement liebert	$28,813	
AB013	blower A	$49,345	
AB014	blower A intake silencer	$9,285	
AB015	blower A isolation transformer	$8,231	
AB016	blower A motor	$10,827	
AB017	blower B	$49,345	
AB018	blower B intake silencer	$9,285	

AB019	blower B isolation transformer	$8,231	
AB020	blower B motor	$10,827	
AB021	blower C	$49,345	
AB022	blower C intake silencer	$9,285	
AB023	blower C isolation transformer	$8,231	
AB024	blower C motor	$10,827	
AB025	blower D	$49,345	
AB026	blower D intake silencer	$9,285	
AB027	blower D isolation transformer	$8,231	
AB028	blower D motor	$10,827	
ABHVAC02	Blobldg D liebert	$28,813	
AB029	Pillar Blowers		$33,100
		Totals	**$33,100**

Asset#	BNR SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
AIB001	Nitrate Recycle Pump 1A	$75,000	
AIB002	Nitrate Recycle Pump 1B	$75,000	
AIB003	Nitrate Recycle Pump 2A	$75,000	
AIB004	Nitrate Recycle Pump 2B	$75,000	
AIB005	Nitrate Recycle Mixer 1A	$12,000	
AIB006	Nitrate Recycle Mixer 1B	$12,000	
AIB007	Nitrate Recycle Mixer 2A	$12,000	
AIB008	Nitrate Recycle Mixer 2B	$12,000	
AIB009	Anoxic Mixer 1A	$15,000	$4,900
AIB010	Anoxic Mixer 1B	$15,000	

AIB011	Anoxic Mixer 1C	$15,000	
AIB012	Anoxic Mixer 1D	$15,000	
AIB013	Anoxic Mixer 2A	$15,000	
AIB014	Anoxic Mixer 2B	$15,000	
AIB015	Anoxic Mixer 2C	$15,000	
AIB016	Anoxic Mixer 2D	$15,000	
		Totals	**$4,900**

Asset#	SECONDARY SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
AS001	sec1collectors	$109,000	
AS002	sec1eastdrive	$11,000	
AS003	sec1skimmingstrough	$5,231	
AS004	sec1westdrive	$12,024	
AS005	sec2collectors	$109,000	
AS006	sec2eastdrive	$11,000	
AS007	sec2skimmingstrough	$5,231	
AS008	sec2westdrive	$12,024	
AS009	sec3collectors	$109,000	$11,689
AS010	sec3eastdrive	$11,000	
AS011	sec3skimmingstrough	$5,231	
AS012	sec3westdrive	$12,024	
AS013	sec4collectors	$109,000	
AS014	sec4westdrive	$11,000	
AS015	sec4eastdrive	$12,024	
AS023	secraspump1	$15,746	

AS024	secraspump1drive	$8,000	
AS025	secraspump2	$15,746	
AS026	secraspump2drive	$8,000	
AS027	secraspump3	$15,746	$4,536
AS028	secraspump3drive	$8,000	
AS029	secraspump4	$15,746	
AS030	secraspump4drive	$8,000	
AS031	secwaspump1	$7,488	
AS032	secwaspump1drive	$5,100	
AS033	secwaspump2	$7,488	
AS034	secwaspump2drive	$5,100	
AS035	secwaspump3	$7,488	
AS036	secwaspump3drive	$5,400	
AS037	secwaspump4	$7,488	
AS038	secwaspump4drive	$5,400	
		Totals	**$16,225**

Asset#	CHLORINE SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
ACL001	ctchlorovac1	$6,157	
ACL002	ctchlorovac2	$6,157	
ACL003	ctchlorovac3	$6,157	
ACL004	ctchlorovac4	$11,497	
ACL005	ctwaterpump1	$5,290	
ACL006	ctwaterpump2	$5,290	
ACL007	ctwaterpump3	$5,290	

		Totals	**$0**
Asset#	THICKENER SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
AT001	th1mixer	$39,400	
AT002	th2mixer	$39,400	
AT003	th3mixer	$39,400	
AT005	thickener1mixerdrive	$16,000	
AT006	thickener1pump	$8,000	
AT007	thickener2mixerdrive	$16,000	
AT008	thickener2pump	$8,000	
AT009	thickener3mixerdrive	$16,000	
AT010	thickener3pump	$8,000	
AT013	thickenerfeedpump1	$9,000	
AT014	thickenerfeedpump2	$9,000	
AT015	thickenerfeedpump3	$9,000	
ATAH01	Thickener bldg ground level AH	$7,500	

		Totals	**$0**
Asset#	SLUDGE EQUIPMENT	Unamort Comp Reb/Rep Cost	CY13 Spend
ASL001	sludgestorage1drive	$36,000	
ASL002	sludgestorage1mixer	$31,400	
ASL003	sludgestorage2drive	$36,000	
ASL004	sludgestorage2mixer	$31,400	
ASL005	sludgestorage3drive	$36,000	
ASL006	sludgestorage3mixer	$31,400	

ASL007	sludgestorage4drive	$36,000	
ASL008	sludgestorage4mixer	$31,400	
AI325	pressfeedpump4	$5,150	
AI326	pressfeedpump5	$9,750	
ASL011	sludge transfer Vaughn pump	$8,550	
		Totals	**$0**

Asset#	SOLIDS PROCESSING	Unamort Comp Reb/Rep Cost	CY13 Spend
AIS001	Centrifuge 1	$300,000	$96,140
AIS002	Centrifuge 2	$300,000	$11,663
AIS003	Conveyors-Dewatering	$250,000	$8,797
AIS004	Conveyors-Silo Intake	$250,000	$112,143
AIS005	Conveyors-Silo Outlet/Dryer	$250,000	$20,966
AIS006	Silo and Live Bottom	$2,000,000	$8,560
AIS007	FSRS Bin and Live Bottom	$250,000	$2,200
		Totals	**$260,469**

Asset#	FBI AND EMISSIONS SYSTEMS	Unamort Comp Reb/Rep Cost	CY13 Spend
AIF001	Fluid Bed Incinerator	$8,000,000	$4,416
AIF002	Sludge Dryer	$1,000,000	
AIF003	FBI Feed Pump 1 and Hydraulics	$250,000	$9,538
AIF004	FBI Feed Pump 2 and Hydraulics	$250,000	$9,061
AIF005	Fluidizing Air Fan and Motor	$200,000	$7,961
AIF006	ID Fan and Motor	$200,000	$7,900
AIF007	Compressed Air Systems	$20,000	$49,044

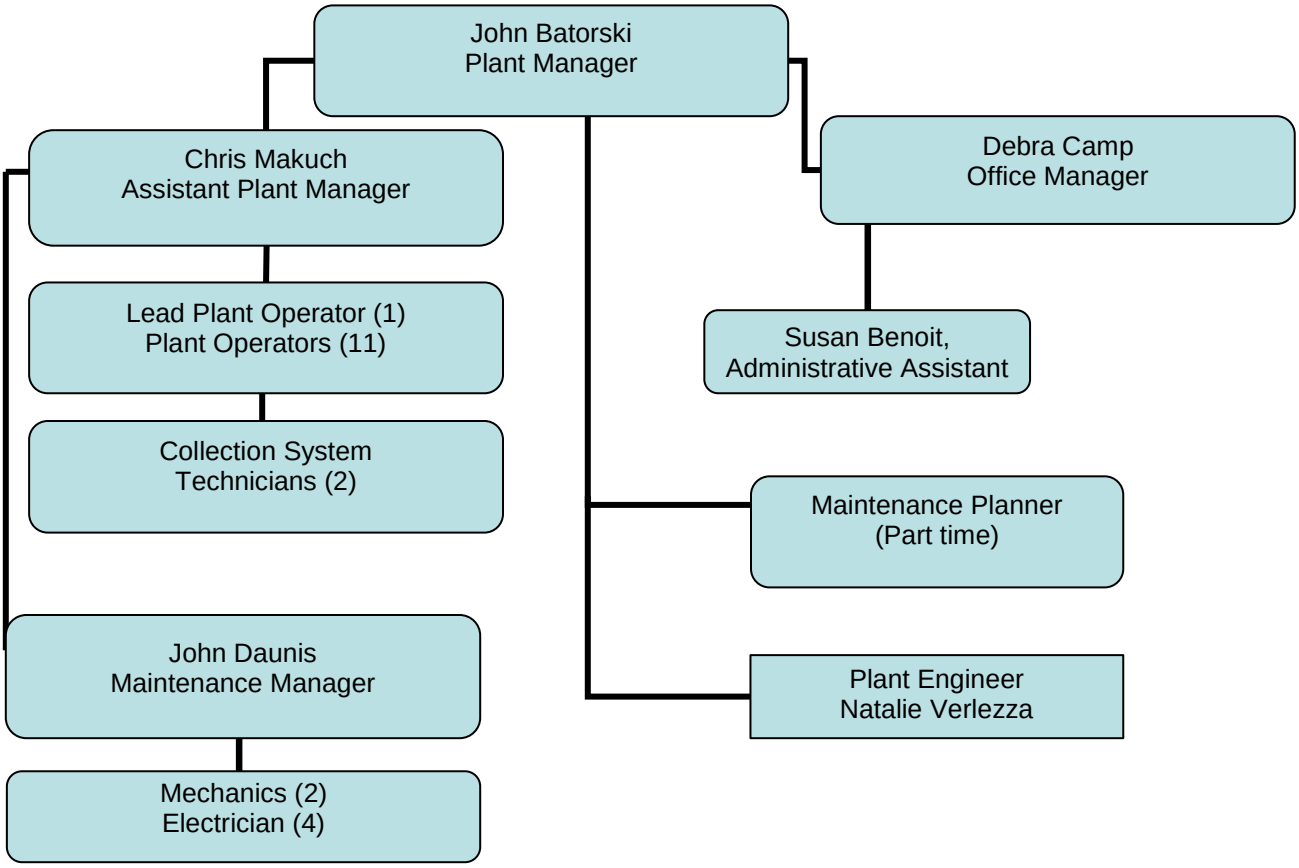
AIF008	Sand Systems	$250,000	
AIF009	FBI Preheat Burner System	$100,000	
AIF010	Primary HX and Overbed Systems	$800,000	
AIF011	Hot Oil HX and HTF Loops	$600,000	
AIF012	Venturi Scrubber	$200,000	
AIF013	Tray Scrubber	$200,000	
AIF014	CEMS System	$50,000	
AIF015	Exhaust Ductwork & Stack	$500,000	$6,104
		Totals	**$94,024**

Asset#	INCINERATION SYSTEM (BFP/PUTZs)	Unamort Comp Reb/Rep Cost	CY13 Spend
AI312	incin feed pump north(pump)	$16,000	
AI313	incin feed pump north(power pak)	$22,000	$9,155
AI314	incin feed pump north(screw feeder)	$18,000	$801
AI315	incin feed pump south(pump)	$16,000	
AI316	incin feed pump south(power pak)	$22,000	
AI317	incin feed pump south(screw feeder)	$18,000	
AIHVAC01	Filter/incinerator bldg AH unit	$8,500	
AIHVAC02	Incinerator south wall AH (east unit)	$12,000	
AIHVAC03	Incinerator south wall AH (west unit)	$12,000	
AIHVAC04	Filter/incinerator bldg AH unit	$12,000	
AI333	East incinerator ash pump north	$5,212	
AI334	East incinerator ash pump south	$5,212	
AGBT001	Gravity Belt Thickener	$74,025	
		Totals	**$9,956**

Asset#	ODOR SYSTEM	Unamort Comp Reb/Rep Cost	CY13 Spend
AOD263	odor scrub cve pump	$8,996	$26,775
		Totals	**$26,775**

Asset#	Structural/Building/Yard Piping	Unamort Comp Reb/Rep Cost	CY13 Spend
S0001	Admin Building		$12,101
S0002	Blower Building		$3,500
S0003	Filter Building		
S0004	Incinerator Building		$65,341
S0005	Thickener Building (incl. covers)		
S0006	Sludge Storage Building		$70,942
S0007	Drainage Pump Station		
S0008	Oil Storage Building		
S0009	Flume Building		
S0010	Headworks/Locker/Plant Water Building		$8,034
S0011	Tunnels		
S0012	Yard Piping		
S0013	Fencing/Gates/Yard Lighting		$2,233
S0014	Aeration Diffusers and Baffles		$2,114
S0015	Belt Filter Presses		$7,350
S0016	Facility Electrical Distribution Systems		
S0017	SCADA/PLC Systems		$67,595
		Total	**$239,210**
		Grand Total	**$774,418**

6. Facility Staff Summary



During CY13, there were changes in the maintenance department. A fourth licensed electrician was hired. The plant repair and preventative work has transitioned to electrical work as new equipment is installed. Maintenance is now schedule seven days per week.

Safety Performance

The facility achieved excellent safety performance throughout CY13, with no reportable or Lost Time Injuries.

The formal safety instruction included safety sessions on topics such as an OHSA 10 hour class, respirator fit testing/training, hazardous gas monitor training, confined space, general safety, incinerator review classes, and material safety data training. The facility continues to maintain a strong focus of safety through personal responsibility, 24/7 open-door policy to discuss and mitigate any concerns, and continuous improvement through self-evaluations

and corporate audits. Staff attends monthly safety training meetings that include a round-table open issue discussion and receive additional training is specialized training topics such as forklift safety, ladder safety, lifting sling safety, hot oil safety and respirator training. The hourly staff includes a safety coordinator delegate to help maintain lines of communication between management and staff.

In addition to safety focused training, all facility staff are encouraged to undertake position-specific classes in pursuit of certifications and skills improvement fully paid by Veolia Water. Staff completed courses in such topics such as advanced wastewater treatment O&M, utility management, incineration, personal protective equipment, OSHA 10 hour certifications, vacuum truck safety and collections systems O&M.

7. Future Contract Year Projections:

Major asset management plan activities in Year 14 are expected to be continued replacement of obsolete mixing drives in the storage tanks with chopper pumps, installation of a new boiler and hot water recirculation pumps for the main plant, improvements to the Spirac conveyors, installation of additional security cameras, installation off a new 53 ft. Conveyor, control enhancements to the centrifuges, Abel sludge cake pump rebuilds along with additional repairs to the primary and secondary tanks.

Although it has not been determined who will design the incinerator emission upgrades at the time of this report, we anticipate that emission upgrades will be designed and installed for the incinerator within acceptable timelines as approved by EPA. We also look forward to working with Kleinfelder Engineers to assist with their preparation of the facility plan and collection system issues.

Contract Year 14 will continue to build upon the OWAM maintenance efforts of facility staff. Work to identify and repair issues within the collection system will continue. Replacement and repair of equipment will continue and evaluation of systems will be a prominent portion of the year.