Monthly Report of the Operations & Maintenance Activities

Claremont Polychemical Operable Unit 5

Groundwater Treatment System

Old Bethpage, New York
January 2020

NYSDEC Standby Engineering Contract
Work Assignment #D0076025-28

Prepared for
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233

NEW YORK STATE OF OPPORTUNITY
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ACRONYMS AND ABBREVIATIONS

AS	air stripper
ASF	air stripper feed
BSP	Bethpage State Park (Black Golf Course)
CPC	Claremont Polychemical
CSE	confined space entry
DOSR	daily operations summary report
DTB	depth to bottom
DTW	depth to water
EFF	effluent
EON	EON Products, Inc.
ESS	Environmental Sampling Supply
Fed Ex	Federal Express
GPD	gallons per day
GPM	gallons per minute
GW	groundwater
GWTS	groundwater extraction, treatment, and reinjection system
HCl	hydrochloric acid
HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C.
HHL	High-high level
INF	influent
LOTO	Lock-out, tag-out
MW	monitoring well
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
OBL	Old Bethpage Landfill
OU4	Operable Unit 4
OU5	Operable Unit 5
PDB	Passive Diffusion Bags
PD	plant discharge
PFOA	Perfluorooctanoic Acid and related perfluorinated alkyl substances
PFOS	Perfluorooctanesulfonic Acid
PID	photo ionization detector
PSEG	Public Service Enterprise Group, electrical power supplier
PW	process water
RAP	Remedial Action Plan
RW	Recovery well, process well
SOP	standard operating procedure
SSHP	site safety and health plan
SU	standard pH units
TA	TestAmerica Laboratory
TOB	Town of Oyster Bay
UPS	United Parcel Service
VAC	Vapor phase activated carbon
VOCs	volatile organic compounds

1 OPERATION AND MAINTENANCE ACTIVITIES

Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) continued the daily operation and maintenance (O&M) of the Claremont Polychemical Superfund Site Groundwater Treatment System (GWTS) Operable Unit 5 (OU5) during the month of January. This report covers the operation and maintenance activities for the system during the period defined as beginning at 0730 hours, January 1, 2020 through 0730 hours, February 1, 2020. O&M conducted during this reporting period was guided by the site O&M Manual.

The GWTS – treatment plant, grounds, and well systems - were maintained for the 31 days in this reporting period during which the treatment system experienced 1,185 minutes of downtime due to an unbalanced flow condition and some problems with the recovery well pumps.

Readings of the key plant process parameters are normally recorded each work day. (When the plant is not occupied, the system is monitored remotely). These readings and the Human Machine Interface (HMI) flow trend lines are used to monitor the system's performance and condition. Selected readings are recorded in the Daily Database which is an electronic file maintained in the monthly operating document folder.

The treatment process control and alarm systems are fully functional. The recovery well pumps and the process pumps are operated in the automatic mode and are remotely controlled and monitored. The pump at RW-4 has failed, (12/31/19) and will need to be replaced.

1.1 DAILY OPERATIONS SUMMARY REPORTS

The GWTS's daily operations and maintenance activities, project tasks, and observations during this reporting period are briefly described in the Daily Operations Summary Report (DOSR). The DOSR is based in part on the treatment system's daily operating worksheets and logs which include:

Daily Operating Log – flow readings (Form-01)
Daily Process Data Sheet – point process readings (Form-30)
Daily Safety and Site Inspection – plant condition checklist (Form-02)
Daily Plant Activity Notes – plant manager's daily summary (Form-03)
Employee Sign-In Sheet – employee on-site hours (Form-15)
Log Book – plant operator's daily log book (CPC 5-7)
Daily Database – daily process readings (01 Jan 20 Database.xlsx)

1.2 SUMMARY OF MAINTENANCE ACTIVITIES

The maintenance of the treatment system, facility, and associated equipment is performed in accordance with the site GWTS O&M Manual.

The maintenance, operation, and inspection of the plant incorporates the equipment manufacturers' recommendations, operations experience, and good engineering and maintenance practices. A detailed accounting of the January activities is further provided in the plant operator's daily log book.

Maintenance and project activities completed by HDR during the January reporting period are:

- Routine and general maintenance tasks were conducted at the plant, on the grounds and in the well fields
- The remote connection to the HMI monitoring system was re-established
- The overload heaters were replaced on the motor starter for the RW-4 pump
- Repairs were made to the water line leak in the plant
- Electrical testing at the pump controls for RW-4 continued
- The ASF pumps were manually rotated
- The motor starter overload heaters at RW-1 were replaced
- The water levels of the recharge basins were noted
- The magnehelic gauges from the carbon beds at OU4 were removed for use at OU5
- The monthly process equipment function tests were conducted
- The truck was re-fueled
- The inventory of spare parts continued. A data base is being generated
- The unbalanced flow condition alarm coding was revised and the flow signal from RW-5 was restored
- The automatic actuation of RW-5 was restored
- Electrical testing at RW3 continued
- The RW system incoming power was adjusted from ~500 VAC to ~475 VAC
- The new overload relay was assembled and installed at RW-3. The function of RW-3 was restored
- Two on-hand motor starter contact blocks (upper half) were tested and put into inventory
- The accumulated excess pallets were stowed on the back lot
- Miscellaneous items were removed from the HVAC room
- The pump seal for PFF P3 was tightened and greased

Also included in the January activities were scheduled inspections of:

- The main recharge basins
- The recovery well systems
- The SUNY Farmingdale wellfield
- The OU4 facility
- The Claremont Polychemical site
- The plant truck
- The OU5 safety systems

1.3 MAINTENANCE LOGS

The following operating log books are currently in use and maintained at OU5:

- CL-43 Field Support Log
- CL-47 Misc. Projects Field Notebook (PET)
- CPC 5-4 Project Support Log Book (site)
- CPC 5-7 Site Supervisor's Daily Log Book (PET)

The completed log books associated with the project (with the exception of books CPC-1 and 6) have been scanned, all are in storage at OU5, and are available for review.

2 TECHNICAL SUPPORT ACTIVITIES

2.1 HDR Personnel

- HDR maintained the plant throughout the January reporting period
- Various personnel at the Mahwah, NJ, New York, NY, and Newark, NJ offices remotely provided oversight, guidance and technical expertise for the project.
- 01/03: Tom Fogarty was in to restore the HMI communication connections
- 01/06: Matt Keaveney was in for the WA43 well installation oversight. He returned every workday thru 01/17
- 01/10: Ed Chappell was in for monthly electrical testing of the process equipment and to troubleshoot issues with RW-4
- 01/10: Brett Singley was in to assist Ed Chappell
- 01/28: Jennifer Rhee was in to discuss operational progress on OU5 and WA#43 field efforts.
- 01/28: David Spencer was in to go over the fire code violations

2.2 NYSDEC Personnel, sub-contractors and other visitors

- 01/16: BK Fire was at OU4 to inspect the sprinkler system
- 01/23: Eurofins-TestAmerica-NY was on-site to pick up the PD samples
- Cascade drilling was at the site daily

2.3 Deliveries

- 01/17: UPS delivered the Radwell parts
- 01/22: UPS delivered the MMC order
- 01/22: Pine Environmental picked up the WA43 rental equipment
- 01/23: Eurofins-TestAmerica-NY delivered the VOA vial order
- 01/24: UPS delivered the Galco order
- 01/31: UPS delivered the EON order

3 HEALTH AND SAFETY

Work at the Claremont GWTS OU5 was conducted in accordance with the approved Site Safety and Health Plan (SSHP). Safety related activities during this period included:

- Daily site safety inspections were completed as part of the routine O&M activities
- Non-permit required confined space entries were made into the vault at RW-4 on 01/10
- The OU4 comprehensive site and safety inspection was completed on 01/21 with nothing new to note
- The OU5 comprehensive site and safety inspections were completed on 01/30 with nothing new to note

There were no other safety issues of note in January.

4 PLANNED ACTIVITIES AND SCHEDULES

The evaluation of the plant operating system and equipment is ongoing by HDR. A list in the form of corrective actions or maintenance tasks has been generated, as is a monthly system status report. These reports are updated as needed and reviewed at least monthly. Both are electronically filed. The corrective action list is included at the end of the text of this report as Table 6 – Claremont Corrective Action Summary.

Upcoming tasks include:

- The quarterly Process Water Sampling task is scheduled for the week of 02/10
- Missing exit light and emergency lighting is to be replaced at OU4
- The disposition of the RW-4 pump replacement is awaiting NYSDEC approvals
- The disposition of the OU4 facility is awaiting NYSDEC approval
- The repair of the OU5 smoke detectors is awaiting the NYSDEC approvals
- The disposition of the OU4 carbon beds is to be determined by NYSDEC

5 MONITORING WELL WATER ELEVATIONS

The monitoring well system's groundwater level elevation data table was updated after December 2019 groundwater sampling. This database is available for review. The next synoptic water level round is scheduled for March 2020, prior to the next quarterly groundwater sampling task.

6 TREATMENT SYSTEM FLOWS

The volume of treated water discharged by the treatment plant to the selected recharge basin is generally determined daily from readings of the plant effluent flow meter output. During the January reporting period, the HMI readings were recorded. The plant continued to operate in the auto mode. The treatment system experienced an alarm condition which caused the shutdown of the production well pumps. This, and accompanied pump start up failures accounted for 1,185 minutes of downtime in January.

The total volume of treated water discharged from 0730 hours on January 1, to 0730 hours on February 1, was approximately19,623,000 gallons. The data provided in **Table 1** shows selected monthly flows discharged from the plant.

A graphic representation of the system's daily treated water output is presented in **Figure 1** and the daily plant totalizer readings for January are provided in **Table 4**, both following the text of this report.

Table 1 – Flow Average and Volume Discharged

Period	Average Flow (gpm)	Average Daily volume (gal)	Total Period Flow (gal)	Min off	Min on
Q4 2016	517	745,000	68,540,000	7,309	125171
Q1 2017	520	748,244	67,342,000	655	128945
Q2 2017	576	829,130	76,280,000	6,165	126315
Q3 2017	634	913,576	84,049,000	1,110	131370
Q4 2017	256	368,762	33,926,110	69,165	63315
Q1 2018	53	75,989	6,839,000	118,180	11420
Q2 2018	179	258,284	23,762,103	102,929	29551
Q3 2018	504	725,280	66,725,717	57,416	75064
Q4 2018	726	1,045,065	96,145,984	23,734	108746
Q1 2019	527	758,467	68,262,000	735	128865
Q2 2019	662	953,877	87,756,724	405	132075
Q3 2019	685	985,802	90,693,740	108	132372
October 2019	687	980,742	30,403,000	356	44284
November 2019	568	816,000	22,019,360	4,478	38722
December 2019	668	957,885	29,694,420	205	44435
January 2019	451	633,000	19,623,000	1,185	43,531

Under current conditions, the Programmable Logic Controller (PLC) and the control system are stable and fully functional. Flows from the individual recovery wells are remotely read, transmitted, and totalized.

During January reporting period, the treated water was discharged directly to Recharge Basin 1 on the landfill property.

The flow summary for the processes are provided in **Table 5** at the end of this report.

7 CHEMICAL CONSUMPTION

The hydrochloric acid feed system is currently off-line and the system is empty of acid. There are four drums of virgin acid on site. No acid was consumed in January.

The sodium hydroxide storage system is currently not in use and the system is empty of caustic. There is no bulk sodium hydroxide on site and no caustic was consumed in January.

The sodium hypochlorite storage system is currently not in use and the system is empty of bleach. No bulk sodium hypochlorite is stored onsite. No sodium hypochlorite was consumed in January.

8 WASTE DISPOSAL

Accumulated electronic parts and chemical type wastes were dropped off at the TOB collection site by HDR in January.

9 MONTHLY DISCHARGE MONITORING REPORT

The GWTS is operated under an equivalency permit from the NYSDEC. A review of the analytical results for the January plant discharge samples indicated all analyzed parameters were compliant with permit limits. These results are provided in **Table 7** following the text of this report.

The plant's water discharge permit is in the process of being renewed by the NYSDEC.

10 PENDING ISSUES AND CONSIDERATIONS

The pump for RW-4 has failed. Electrical testing indicated that it needs replacement. The project is awaiting guidance from the NYSDEC

Inspections of the CPC property and discharge basins will continue

The repairs to the OU5 fire alarm open loop are to be approved by NYSDEC and scheduled

The plant lights are kept on overnight because the plant lighting and emergency lighting are wired to the same circuit breaker (sole switch)

The OU4 plant is offline and its disposition is pending

The plant exhaust system is controlled by the methane monitoring system

Removal and disposal of vapor phase activated carbon at OU4 is to be scheduled

The status of key aspects of OU4 are:

- The plant heat is on
- The fire alarm panels are off-line and there is no central monitoring
- The facility is secure and physical monitoring continues
- The facility is not maintained

11 PLANT DOCUMENTS

Procedures and standard forms are written, reviewed, and revised as needed. As-built drawings are generated and updated as necessary. This activity in January are:

- Table 1 of this report (flow totals) was revised
- Form-15, employee sign in sheet was revised to rev. I
- Form-30, E-light Power Test was revised to rev. B

12 MONITORING RESULTS

The Claremont Polychemical GWTS is monitored through the analysis of off-site laboratory analytical data and on-site field data.

12.1 Off-site Analytical Data Results

Monthly PD samples are taken for organic analysis in compliance with the NYSDEC discharge permit. Quarterly groundwater (GW) samples are taken for organic analysis, and quarterly process water (PW) samples are taken for organic, inorganic, and generic analysis. The January sampling activities were:

- The December GW data was processed and submitted
- The December PD data was processed and submitted
- The January PD samples were collected on 01/21 and shipped to Eufofins-TestAmerica-Edison, NJ for analysis
- An inventory of the bottles needed for the upcoming PW sampling task was made and additional bottles ordered. The sampling date was set for a 02/13 pick up
- The January PD data was processed and submitted

12.2 Field Data

Plant Discharge pH and Temperature

Treatment plant effluent is monitored for pH and temperature on a weekly basis in order to obtain a monthly average in compliance with the NYSDEC discharge permit requirements. These readings are taken from the plant effluent at a controlled point with a calibrated portable meter. The plant discharge readings for January are provided below in **Table 2**.

Table 2 – Effluent pH and Temperature Readings

Date	pH (su)	Temp °F
1/6	6.7	54
1/14	6.5	56
1/20	6.6	53
1/27	6.7	56
January Average	**6.63 su**	**55°F**

The NYSDEC discharge permit requires the plant discharge to have an average monthly pH between 6.5 and 8.5 standard units (su). The results for January meets this requirement. Data showing the plant discharge's monthly average pH trend over several months is provided in **Table 8** following the text of this report.

AS Tower Air Monitoring

Using a calibrated PID meter, weekly air monitoring readings are taken from the effluent air stream of the AS Tower through Port B when the treatment system is on-line. The January readings from the AS tower are provided in **Table 3**.

Table 3 – AS Tower Air Monitoring Readings

Date	Port B
01/06	0
01/14	0
01/20	0
01/29	0

There were no emissions from the Air Stripping System observed this month. No emissions have been detected since HDR began operation of the plant in October of 2016.

Other routine data collected by HDR in January were:

- The electric and water meter readings; recorded weekly
- The plant sound levels, recorded bi-weekly
- The electric and gas meter readings for OU4; recorded monthly
- The water levels in Sumps 3 and 4
- The water levels of the recharge basins
- The differential pressure readings across the AS Tower; recorded bi-weekly

13 PROCESS ANALYSIS and SYSTEM STATUS

The treatment system is currently operated 24/7 in automatic mode.

13.1 Extraction (RW) Processes

- The flow signal from RW-5 was interrupted causing an unbalanced flow condition in the system. Upon the manual restart, the pump would not operate in Auto mode. In Hand mode, the pump functioned but the flow meter did not. Electrical Engineering support restored the flow signal and the pump control function. The RW-5 system is now fully functional
- The pump for RW-3 failed to restart after the unbalanced flow condition. The overload relay was replaced and the pump is now fully functional
- The incoming power supply was adjusted from 500 VAC down to 480 VAC
- The pump at RW-4 remained off-line for the period. It will need to be replaced
- The overload heaters were returned to the motor starter at RW-1
- The pump system is remotely controlled and monitored it operates in the Auto mode. The pumps at RW-1, -2, -3, and -5 are fully functional
- Pump flow readouts are transmitted to the plant and the totalizers for 3, 4, and 5 are fully functional
- The A/V valve at station 16+57 remains isolated from the transmission line
- The A/V valve at station 17+10 remains isolated from the transmission line
- RW-1 and RW-2 are off-line and periodically run for PM purposes. The flow meters are not transmitting
- The vault heaters are on and panel heaters are active

13.2 Air Stripping (AS) Process

- The three AS feed pumps are fully functional and are operated in the auto mode off the wet well level switches. The pumps have been coded to rotate into service. When P1 is the lead pump, it does not keep up with influent flow and therefore it does not rotate off. This requires occasional manual rotation of the pump
- The AS tower main drain valve is not functional (fail open)
- The tower media appears clean as the pressure differential between the top and bottom ports remains relatively constant. The lower section of media has been visually inspected. Analysis of the sampling data indicates that little iron is getting into the system and is very often be removed by the treatment flow
- The discharge valve for ASF P1 appears to be frozen in the open position

13.3 Plant Discharge (PD) Process

- The three plant discharge pumps are fully functional. The pumps have been coded to automatically rotate into service
- The seal for P3 was tightened and greased
- The control and monitoring systems are fully functional
- The plant discharge continues to be directed to Recharge Basin 1. Currently no discharge is going to Basin 33
- The discharge valve for PFF P2 appears to be failing in the open position
- Pump 2 continues to occasionally trip

13.4 Other

- The Auto-dialer is fully functional
- The plant's first light bank is wired to the e-light recharging system, therefore the circuit must be kept on. The light activity is intermittent
- A leak has developed in the water supply line running through the plant. A temporary patch was installed. The water service was restored

14 GROUNDS

14.1 Plant Perimeter

- General outdoor clean-up tasks are on-going
- Cascade's work has been completed and they have removed their equipment from the back lot
- The Frac tank, roll-off, and empty pallets remain on the back lot
- The last power outage disabled the clock mechanism on the outdoor light timer. In addition, five of the outdoor building lights are not functioning. These conditions should not impact safety or security
- The TOB continues to maintain the grounds along the plant perimeter

14.2 Well Field

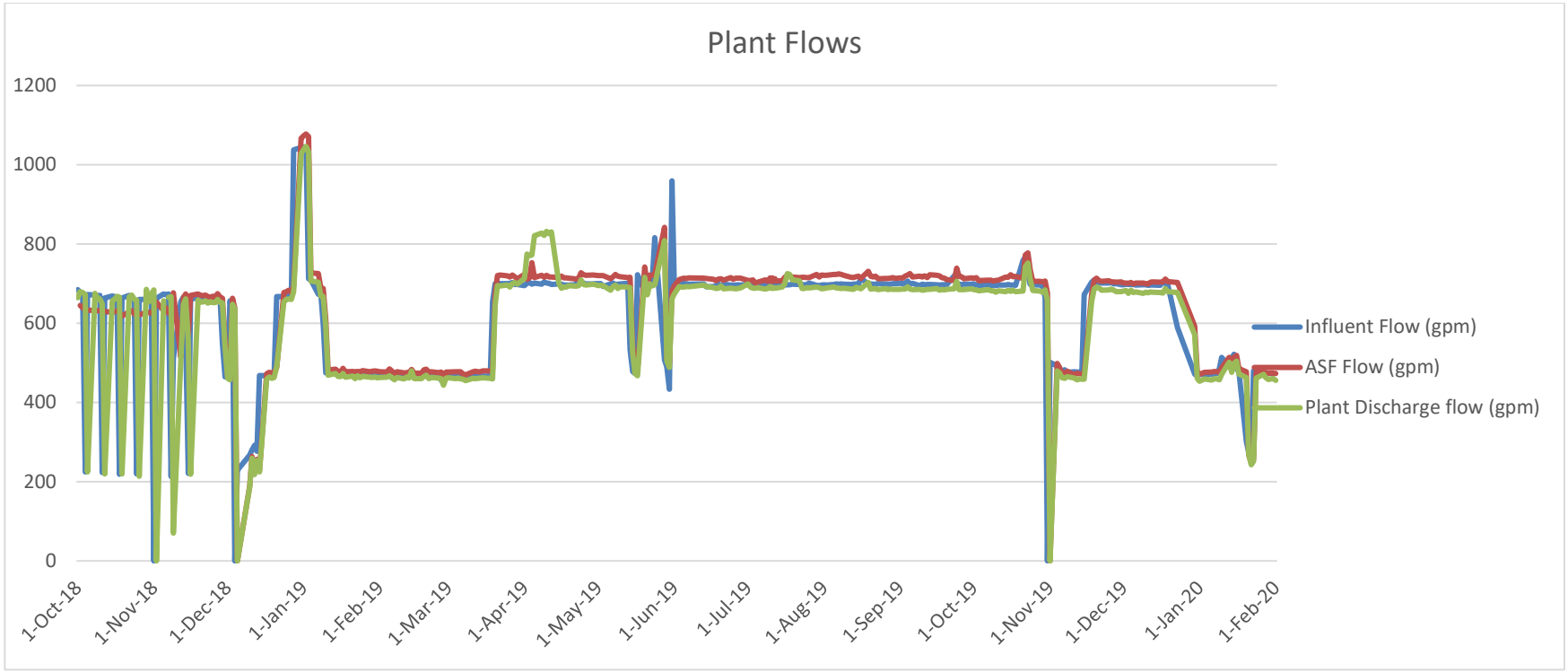
- Well, well field, and basin inspections continue and are secure
- Two new wells have been installed south of the treatment zone
- The well access paths are relatively clear, downed trees and overgrowth are removed as necessary

14.3 Other

- The grounds continue to be inspected but not maintained at OU4
- The Claremont site is currently secured with a locked gate. There is currently no tenant on the property

FIGURES

Figure 1 – Plant Discharge Daily Flow



TABLES

Table 4 – Plant Daily Totalizer Readings

January 2020 Flows				
	Plant Influent		Plant Discharge	
Date	Volume	Avg. Flow	Volume	Avg. Flow
1-Jan-20	1396000	969	1359000	944
3-Jan-20	2024000	469	1974000	457
6-Jan-20	684000	475	663000	460
7-Jan-20	677000	470	660000	458
8-Jan-20	683000	474	664000	461
9-Jan-20	670000	465	648000	450
10-Jan-20	2108000	488	2044000	473
13-Jan-20	748000	519	730000	507
14-Jan-20	693000	481	672000	467
15-Jan-20	745000	517	725000	503
16-Jan-20	756000	525	731000	508
17-Jan-20	2081000	482	2026000	1407
20-Jan-20	600000	417	581000	403
21-Jan-20	128000	89	115000	80
22-Jan-20	402000	279	355000	247
23-Jan-20	406000	282	361000	251
24-Jan-20	2078000	481	2001000	463
27-Jan-20	680000	472	669000	465
28-Jan-20	687000	477	669000	465
29-Jan-20	693000	481	669000	465
30-Jan-20	681000	473	661000	459
31-Jan-20	664000	461	646000	449
Jan. Total Plant **Influent** (Gal)				20,284,000
Jan. Total Plant **Effluent** (Gal)				19,623,000

Readings from HMI digital outputs

Table 5 – Pump System Flow Readings

January	On-Time Minutes (actual)	Avg. Flow (gpm)	Avg. Flow (gpd) (over 31 days)	Total Flow (gal)
RW-1	11	225	-	2475
RW-2	8	260	-	2080
RW-3	40,136	263	377,464	10,569,000
RW-4	0	0	0	0
RW-5	43,531	213	298,599	9,256,575
Plant Influent	43,531	466	654,323	20,284,000
Plant Effluent	43,531	451	633,000	19,623,000

The treatment process was on-line 31 days in January. Flows are taken from the HMI meter readings. There was 1,185 minutes of downtime.

Table 6 – Claremont Corrective Actions Summary

Conditions of note and corrective actions planned 1/31/2020

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
Plant heaters UH-1 and UH-2 are not working	UH-2 - needs a timer relay and wiring repairs at the unit UH-1 – needs a transformer It should be noted that the heating system AH-2 is adequate to heat the process area ***No further action is planned at this time***	Electrical and/ or plant personnel	Not needed at this time. Repairs can be made with treatment system on-line.	Task may require working off ladders or elevated surface
The Air vent valve in the vault north of the 6th fairway (BSP-B) has a leak	The nipple connecting the A/V valve to the RW manifold is leaking. The isolation valve has been closed and the device is out of service. The piping needs replacement ***No further action has been taken***	Plant staff and contractors	None, isolation valve is functioning	Confined Space Entry
The Air vent valve in the vault east of the 6th green has a leak	The A/V valve has been isolated by the shut off valve. The device itself is leaking. The unit needs replacement or rebuilding ***No further action is planned at this time***	Plant staff and contractors	System shut down until the remedy was made	Confined space entry

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
NaOH Vault sump pump not actuating	System needs to be inspected A portable submersible well pump was set up in the vault sump for manual operation ***No further action is planned at this time***	Plant staff Electrical support	None at this time	Oversight needed
The RW Discharge Manifold integrity is suspect	The condition of the various devices in the RW manifold vaults are suspect ***A full set of function tests should be scheduled.***	Plant staff and outside contractors	Possible shutdown	May require a CSE
Plant discharge Pump 2 frequently trips	Pump continues to trip. It requires manual resetting. The control panel does not indicate the status EE indicated that the motor starter contact block appears to be getting stuck ***When possible the unit will be cleaned.***	Operator and EE	Loss of redundancy. Requires P3 to be activated	None at this time
AST main drain valve does not close	Tests on the valve indicate that it does not close. This is not a problem until the tower media needs to be acid washed ***This valve should be replaced.***	Operator	Plant will need to be shut down to change out the valve	None at this time

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The piping configuration for the RW pump pressure switches, pressure gages and sample ports are corroding and unwieldy and subject to catastrophic failure	The systems at RW-5 and RW-3 have failed. While piping components have been replaced, the design has not been changed. The top-heavy configuration needs a re-design and re-build or eliminated ***Are the pressure switches required for the safety of the pumps? Can they be eliminated or do they need a re-design?***	Plant operator and spotter	Each well system will be shut down during the upgrade	Confined space entries will be required. These will generally not be permit required
RW-2 flow sensor output is no longer displaying	The flow element mechanical output is spinning and therefore is functional. The HS sending unit needs to be checked as well as the 12 volt power supply and wiring ***This work needs to be scheduled as needed.***	Electrical techs	None anticipated. The system is isolated and off line	Confined space entries may be necessary
New Nassau County Fire Code indicates that the sprinkler system at OU4 be centrally monitored	The fire alarm panels are off-line and their viability needs to be determined Initial investigation indicated that the panel can be powered up but it emits nuisance alarms. Further work on panels will require EE time and may not solve problem ***The plan was to take down the building, thus eliminating the system and the issue. However, the building will no longer be demolished, and at the direction of the NYSDEC all fire violations will need to be addressed. Memo sent to NYSDEC 12/20/19- no response***	Plant operator, EE and possible outside vender	None at this time	None at this time

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The pump isolation valve at RW-5 does not fully function	The valve does not fully close and it should be removed and cleaned or replaced ***No further action is planned at this time***	Plant operator and spotter	Replacement of valve will require shutting down the manifold	Confined space work
NYS Fire Marshall safety inspection at OU4	The inspection revealed several action items that needed to be addressed. Currently, the e-lights have been removed. Fire alarm panel function does not fully function Central monitoring is not in place The roof leak remains ***See above- Memo sent to NYSDEC 12/20/19- no response.***	Plant operator and certified contractors	None	To be determined
NYS Fire Marshall safety inspection at OU5	The inspection revealed several action items that needed to be addressed. Currently, ***there is a defective smoke detector which is to be replaced once NYDEC approves the plan***	Plant operator, TOB personnel	Disposition of TOB materials	Moving materials from mezzanine level
The power to the plant lights and the emergency light charging system are on the same electrical switch	Normally when the plant lights are shut off at night, it inadvertently shuts down the emergency lights and battery charging system. This action may have damaged the charging system ***The plant lights are left on overnight.***	Plant operator. EE, outside contactors	In code violation	Possible emergency evacuation impact

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The activation of the HVAC room and plant exhaust fans are connected to the methane monitoring system and not independently operated	It has not been determined how to manually start the exhaust fans without putting the facility into a methane alarm ***When available, EE will look into this***	Plant operator, EE	None	Possible problem with excessive heat of fume conditions
The first bank of plant lights are functioning intermittently (CB-1)	The plant lighting stopped functioning after the 3rd e-light was installed. The e-light charging system and the plant lights are on the same circuit ***When available, EE will look into this.***	Plant operator, EE	None, the second bank of plant lights is functional	None at this time
A leak has developed at the Victaulic fitting on the PFF vent line	The Victaulic nipple to PVC connector is corroded and starting to leak. Flow is minimal. ***Fitting should be replaced*** ***The condition will be monitored***	Plant operator	Shut down will be required	Ladder work
The loss of power 11/1/19 appears to have affected the outdoor lighting timer	Unit receives power but appears to not function. It is a 270 volt unit ***The unit should be replaced***	Plant operator	none	Electrical work

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
At least one leak was uncovered in the plant overhead water supply line	Adjacent to the north door, a leak was observed. The covering and insulation was removed and a clam-shell type clamp was applied The second observed leak needs to be addressed In addition, there appears to be a problem with the supply shut off valve	Plant operator Outside plumbing contractor?	None at this time	Sanitary water may be shut off during repairs
The pump for RW-4 has failed	**Electrical testing has indicated that the motor needs to be replaced**	**Outside contractors**	**None at this time**	**Crane work, Vault work**

Other Plant Conditions of Note (no action required at this time)

- The methane detection system is offline. **To function, it will need a technical inspection and technical maintenance**
- Air stripper air flow meter is not functional. **It will need to be powered up to determine if it is functional**
- The RW-1 flow sensor is not functional. **The unit is not in service and no further action is planned at this time**
- The AH-1 HVAC system is not functioning. **No further action is planned at this time**
- The RW-2 flow sensor is not functional. **No further action is planned at this time**
- It has been determined that intrinsically safe components are no longer required in the plant

Table 7 – Recent Plant Discharge Analytical Results

The plant discharge was last sampled January 21. The results are shown below.

Parameters	Discharge Limitations (SPDES)	Units	Results December 2019
pH (August Average)	6.5 – 8.5	SU	6.63
1,1,1-Trichloroethane	5	ug/l	U
1,1-Dichloroethane	5	ug/l	U
1,1-Dichloroethylene	5	ug/l	U
1,2- Dichloroethane	0.6	ug/l	U
Benzene	0.7	ug/l	U
Chlorobenzene	5	ug/l	U
Chloroform	7	ug/l	U
CIS 1,2-Dichloroethylene	5	ug/l	U
Ethylbenzene	5	ug/l	U
Methylene Chloride	5	ug/l	U
Tert-butyl alcohol (TBA)	Not indicated	ug/l	U
Tert-Butyl-Methyl ether (MTBA)	5	ug/l	U
Tetrachloroethylene(PCE)	5	ug/l	U
Toluene	5	ug/l	U
Trans 1,2-Dichloroethylene	5	ug/l	U
Trichloroethylene(TCE)	5	ug/l	U
Bis(2-ethylhexyl)phthalate	5	ug/l	U
Di-n-butyl phthalate	50	ug/l	U
Nitro Benzene	0.4	ug/l	U
Antimony, Total recoverable	3	ug/l	U
Arsenic, Total recoverable	50	ug/l	U
Barium, Total recoverable	2000	ug/l	NS
Chromium, Hexavalent	100	ug/l	NS
Lead, Total recoverable	50	ug/l	NS
Iron, Total recoverable	600	ug/l	NS
Manganese, Total recoverable	600	ug/l	NS
Mercury	Not indicated	ug/l	NS
Zinc	Not indicated	mg/l	NS
Nitrogen, Total (as N)	10	mg/l	NS
Selenium, Total recoverable	40	ug/l	NS
Solids, Total Dissolved	1000	mg/l	NS
Chloride Ion	NL	mg/l	NS
Cyanide	Not indicated	ug/l	NS
Fluoride Ion	NL	mg/l	NS
Sulfate Ion	NL	mg/l	NS

NS – Not sampled **J** – Estimated value **U** – Analyzed but not detected **NL** – Monitor only

Discharge limitations updates as per the water discharge permit.
Not monitored but of interest: **1, 4-Dioxane – not detected**

Table 8 – Plant Discharge Monthly Average pH

Month	pH(su)
Feb ‘18	6.87
Mar’18	7.35
Apr ‘18	7.1
May ‘18	7.05
June ‘18	6.5
July ‘18	6.95
August ‘18	6.85
Sept ‘18	6.74
Oct ‘18	7.2
Nov ‘18	7.3
Dec ‘18	6.82
Jan ‘19	7.1
Feb ‘19	7.05
Mar ‘19	6.68
April ‘19	6.54
May ‘19	6.61
June ‘19	6.5
July ‘19	6.6
Aug ‘19	6.56
Sept ‘19	7.45
October ‘19	6.86
November ‘19	6.88
December ‘19	6.84
January ‘20	6.63