Monthly Report of the Operations & Maintenance Activities

Claremont Polychemical Operable Unit 5

Groundwater Treatment System

Old Bethpage, New York

March 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
Department of Environmental Conservation

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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
HMI	Human Machine Interface
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
PET	Peter Takach
PDB	Passive Diffusion Bags
PD	plant discharge
PFOA	Perfluorooctanoic Acid and related perfluorinated alkyl substances
PFOS	Perfluorooctanesulfonic Acid
PFF	Pressure Filter Feed
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 March. This report covers the operation and maintenance activities for the system during the period defined as beginning at 0730 hours, March 1, 2020 through 0730 hours, April 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 323 minutes of downtime due to various maintenance tasks.

Readings of the key plant process parameters are normally recorded each work day (if 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 functional. The pump for Recovery Well #4 (RW-4), the Pressure Filter Feed (PFF) Pump 1, and Air Stripper feed (ASF) P1 are off line with mechanical issues. 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, (12/31/2019) and is scheduled for replacement.

1.1 DAILY OPERATIONS SUMMARY REPORTS

The GWTS's daily operations and maintenance activities, project tasks, and observations during this 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 (03 Mar 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 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 March activities is further provided in the plant operator's daily log book.

Maintenance and project activities completed during March include:

- Routine and general maintenance tasks conducted at the plant, on the grounds, and in the well fields.
- The monthly electrical tests were conducted on the process equipment and the recovery well pumps, 3/3
- The Crydom control relay was replaced in the RW-3 control panel. (The relay counts the flow meter pulses). The flow meter transmission was restored, 3/3
- PM was conducted on the lab e-light. The battery was refurbished, but it is not retaining a full charge, 3/3
- ASF pumps were manually rotated, 3/4.
- The L-1 control relay (Warrick) for PFF was replaced, 3/4.
- The PFF vault was manually pumped dry for entry, 3/5
- The L1 and L2 PFF float switches were re-secured on the PFF vault support, 3/5.
- The PFF P1 pump shaft was checked, 3/5.
- The PFF vault was manually pumped dry for a second entry, 3/10.
- The PFF L-1 float switch was replaced, 3/10.
- The facility was frequently cleaned and scrubbed with bleach in light of the Corona virus concerns.
- The monthly equipment function tests were completed.
- The OU5 Annual 90 Minute power test was conducted, 3/12. The lab e-light failed. This is part of the required annual inspection and testing.
- New e-light was installed in lab, 3/13 to replace the failed unit.
- The OU4 comprehensive site and safety inspections were completed, 3/13.
- The OU4 90-Minute power test was conducted, 3/13 – all passed.
- The CPC site was inspected as well as the paths to the SUNY Farmingdale wellfield.
- The HMI was rebooted after it failed to display. It is now fully functional, 3/16.
- Recharge Basin 33 was inspected and the water level recorded.
- The RW-system was inspected, 3/16.
- The process pump seals were greased as part of routine PM.
- The new lab e-light was tested (90 minute power test) and passed, 3/20.
- The overload on the PFF P2 starter block was adjusted, 3/20.
- The in-house truck inspection was completed.
- The OU5 comprehensive site and safety inspections were completed, 3/27.

1.3 MAINTENANCE LOGS

The following operating logbooks 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 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 system throughout the period.
- Technical expertise and guidance was provided from the Mahwah, Newark, and NYC offices
- 3/5, Jennifer Rhee in to oversee the CSE.
- 3/10, John Guzewich in to oversee the frac tank disposition.
- 3/10, Ian Denholm, in to oversee the CSE and make adjustments to control system.
- 3/18, Matt Papula in to record the monitoring well system water levels.
- 3/23, Matt Papula in for GW sampling (3/23 thru 3/27).
- 3/25, Brendan Phillips – WA43 sampling (3/25 thru 3/27).

2.2 NYSDEC Personnel, sub-contractors and other visitors

- 3/6, BK Fire in at OU4 to inspect the sprinkler system.
- 3/6, PSEG-LI in to read the meters at OU4 and OU5.
- 3/10, Planet Waste in to remove the roll-off and empty the frac tank.
- 3/11, Dan Rivers, (Planet Waste) returned to clean the frac tank.
- 3/18, TA-NY picked up PD samples.
- 3/26, TA NY picked up GW samples and returned 3/27 and 30 for WA43 samples.

2.3 Deliveries

- 3/4, UPS delivered the GEMS order.
- 3/6, UPS delivered the Galco order.
- 3/11, UPS delivered the EON order.
- 3/13, Fed Ex delivered the MMC order.
- 3/13, UPS delivered the remaining MMC parts.
- 3/16, TA-NY dropped off sample vials.
- 3/23, TA-NY dropped off WA43 sample bottles.
- 3/24, Pine Environmental dropped off equipment. Returned 3/25 to drop off more equipment and pick up MultiRAE for evaluation and troubleshooting.
- Mail delivered 1 time.
- 3/31, Pine Environmental picked up the remaining sampling equipment for quarterly.

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.
- The lab pull box was tested. The alarm panel and unit were fully functional, 3/3.

- The OU4 comprehensive site and safety inspection was completed. There was nothing new to note, 3/13.
- The OU5 comprehensive site and safety inspections were completed. There was nothing new to note, 3/27.
- A Confined Space Entry (CSE), was made into the PFF vault to check the float switches and the P1 pump shaft, 3/5.
- A Second CSE was made into the PFF vault to replace the float switches, 3/10.

There were no other safety issues of note in March.

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 April Plant Discharge (PD) samples are scheduled for pick up on 4/16.
- The replacement of the RW-4 pump is scheduled for 4/7.
- PFF P1 was taken off line and its disposition needs to be determined.

5 MONITORING WELL WATER ELEVATIONS

The monitoring well system's groundwater level elevation data table was updated this month after the March 18 readings. This database is available for review. The next synoptic water level round will be scheduled for June 2020, after which the table will be updated.

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 March period, the HMI readings were recorded. The plant continued to operate in the auto mode. The treatment system experienced mechanical/alarm problems and was shut down for a total of 323 minutes for maintenance tasks.

The total volume of treated water discharged from 0730 hours on March 1, to 0730 hours on April 1, was approximately 22,925,000 gallons. The data in **Table 1** shows selected monthly flows discharged from the plant.
A graphic representation of the system's daily plant discharge output is provided in **Figure 1** and the daily plant totalizer readings for March 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 2020	451	633,000	19,623,000	1,185	43,531
February 2020	472	674,552	19,562,000	316	41478
March 2020	517	739,516	22,925,000	323	44317

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 March reporting period, the treated water was discharged directly to Recharge Basin No. 1 on the landfill property.

The flow summary for the processes can be found 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 March.

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 March.

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

8 WASTE DISPOSAL

The WA43 well project waste roll-off was removed from the site.
The WA43 well project frac tank was emptied and cleaned.

9 MONTHLY DISCHARGE MONITORING REPORT

The GWTS is operated under an equivalency permit from the NYSDEC. The analytical results for the March plant discharge samples are not yet available. The February sample results indicated all analyzed parameters were compliant with permit limits. These results can be seen 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 PFF pump 1 is failing and was taken out of service. An evaluation needs to be made.

ASF P1 is emitting a louder pitched whine. It was taken out of service until it can be evaluated.

The plans for the fire sprinkler system, fire alarm, and central monitoring systems at OU4 are awaiting NYSDEC approvals.

The backflow preventer device on the 6" water line into OU4 failed its December inspection. The repair proposal was received in March. The disposition of this repair needs to be determined.

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 including that of the injection well system 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 as follows:

- 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. These March activities included:

- Work continued on the maintenance spare parts list
- GP-05, plant start-up procedure was revised to rev. B
- GP-07, non-emergency plant shut down procedure was generated

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 March sampling activities were:

- The February PW samples were processed and submitted
- The PD samples were collected processed and shipped 3/18
- The monitoring well system water levels were recorded 3/18
- The GW plant samples were collected 3/23 & 24 and processed. All GW samples were shipped 3/26 to Eurofins-TestAmerica-NY
- The WA-43 wells were re-sampled for PFOAs and 1, 4-Dioxane.
- The pH or the GW samples were recorded

12.2 Field Data

Plant Discharge pH and Temperature

The 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 March can be found below in **Table 2**.

Table 2 – Effluent pH and Temperature Readings

Date	pH (su)	Temp °F
3/3	6.7	57
3/9	6.6	56
3/16	6.9	55
3/25	6.8	56
3/30	6.7	55
March Average	**6.74 su**	**56°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 this month meet 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 online. The March readings from the AS tower are provided in **Table 3**.

Table 3 – AS Tower Air Monitoring Readings

Date	Port B
3/3	0
3/9	0
3/17	0
3/26	0
3/30	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 in March were:

- The electric and water meter readings were recorded weekly.
- The plant sound levels were recorded bi-weekly.
- The electric and gas meter readings for OU4 were recorded monthly.
- The water levels in Sumps 3 and 4 were monitored.

- The recharge basins were inspected and the water levels noted.
- The differential pressure readings across the AS Tower were 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 motor controls were inspected and tested. A control relay at RW-3 was replaced, 3/3.
- The pump at RW-4 remained offline for the period. It is scheduled for replacement in April.
- 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, but 2 and 1 are off line.
- 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 but P1 was removed from service until it can be evaluated. The pumps are operated in the auto mode off the wet well level switches. The system has been coded to force the periodic shut off of the lead pump. Pump 1 as the lead pump does not keep up with influent flow and therefore it does not shut off. This requires occasional manual sequencing of the pump.
- The shaft seals were snugged up. Motors and seals were greased.
- 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 iron is being removed from the system.
- The discharge valve for ASF P1 appears to be frozen in the open position.

13.3 Plant Discharge (PD) Process

- Pump 1 has been taken out of service due to excessive noise and vibration.
- The L1 float switch was replaced.
- The starter switch overload for P2 was adjusted. It has not tripped since the adjustment.
- The shaft seals were tightened and greased. The motors were greased.
- The plant discharge continues to be directed to Recharge Basin No. 1. Currently no

discharge is going to Recharge Basin No. 33.

- The discharge valve for PFF P2 appears to be failing in the open position. The valve for Pump 3 has failed open.

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.
- The back lot was cleaned up.
- The roll-off was removed 3/10 and Frac tank was emptied and cleaned.
- The outdoor light timer is not operating. Nine of the outdoor building lights are currently out. These conditions should not impact safety or security.
- The Town of Oyster Bay (TOB) continues to maintain the grounds along the plant perimeter.

14.2 Well Field

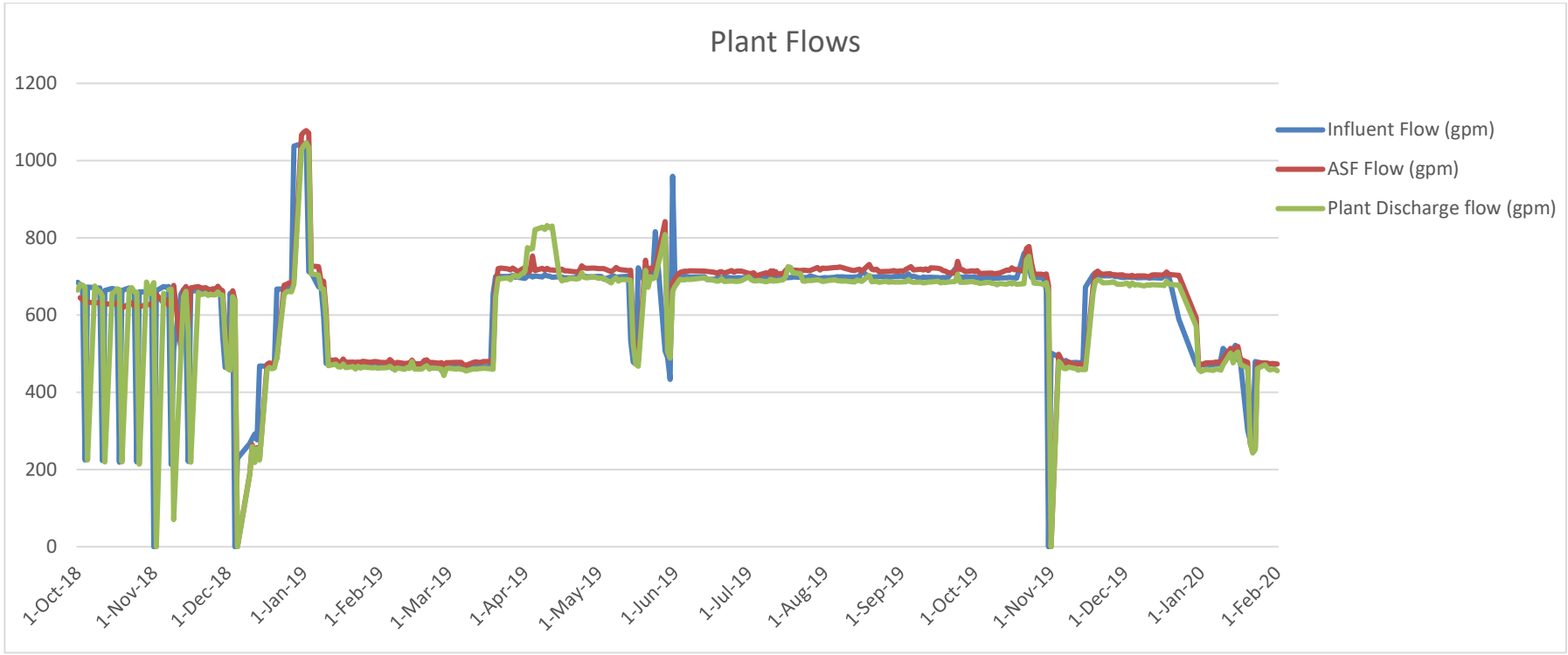
- Well, well field, and basin inspections continue.
- The well access paths are relatively clear, downed trees and overgrowth are removed as necessary.

14.3 Other

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

FIGURES

Figure 1 – Plant Discharge Daily Flow



TABLES

Table 4 – Plant Daily Totalizer Readings

March 2020 Flows	Plant Influent		Plant Discharge	
Date	Volume	Avg. Flow	Volume	Avg. Flow
1-Mar-20	675000	469	655000	455
2-Mar-20	679000	472	656000	456
3-Mar-20	711000	494	689000	478
4-Mar-20	702000	488	677000	470
5-Mar-20	766000	532	737000	512
6-Mar-20	2170000	502	2119000	491
9-Mar-20	749000	520	705000	490
10-Mar-20	710000	493	689000	478
11-Mar-20	783000	544	754000	524
12-Mar-20	789000	548	767000	533
13-Mar-20	2370000	549	2295000	531
16-Mar-20	792000	550	763000	530
17-Mar-20	755000	524	734000	510
18-Mar-20	795000	552	775000	538
19-Mar-20	803000	558	780000	542
20-Mar-20	2353000	545	2282000	528
23-Mar-20	756000	525	737000	512
24-Mar-20	829000	576	807000	560
25-Mar-20	784000	544	758000	526
26-Mar-20	766000	532	747000	519
27-Mar-20	2352000	544	2288000	530
30-Mar-20	781000	542	755000	524
31-Mar-20	781000	542	756000	525
March Total Plant **Influent** (Gal)			23,651,000	
March Total Plant **Effluent** (gal)			22,925,000	

Table 5 – Pump System Flow Readings

March	On-Time Minutes (actual)	Avg. Flow (gpm)	Avg. Flow (gpd) (over 31 days)	Total Flow (gal)
RW-1	15	-	-	3,480
RW-2	95	-	-	24,700
RW-3	44158	287	408,106	12,651,277
RW-4	0	-	-	0
RW-5	44298	237	338,484	10,493,000
Plant Influent	44317	534	762,935	23,651,000
Plant Effluent	44317	517	739,516	22,925,000

The treatment process was online 31 days in March. Flows are taken from the HMI meter readings. There was 323 minutes of downtime.

Table 6 – Claremont Corrective Actions Summary

Conditions of note and corrective actions planned 3/31/2020

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 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.** The Air Vent valve in the vault on the N-side of the 6th fairway is leaking from the influent nipple**. The shut-off valve was closed and the device isolated** The air-vent valve in the vault to the east of the 6th green is leaking. **The shut-off valve was closed and the device isolated.**	Plant staff and outside contractors	Possible shutdown	May require a CSE
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

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
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. EE observed that the overload was set at a lower amperage that the other units. **The overload on the starter was adjusted. No further action is required at this time.**	Operator and EE	Loss of redundancy. Requires P3 to be activated	None at this time
AS Tower 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
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.

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
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
Lack of central monitoring of the OU4 fire sprinkler system	New Nassau County Fire Code indicates that the system have a central monitoring and flow monitoring system installed. The fire alarm panels are off line As, the building will no longer be demolished, the NYSDEC has directed that all fire violations will need to be addressed. **The fire alarm system needs to be replaced** **A central station monitoring system needs to be installed**	Plant operator, EE and possible outside vender	None at this time	None at this time
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
Fire safety Code violations at OU5	The inspection revealed several action items that needed to be addressed. Currently, **A defective smoke detector is to be replaced and the existing system tested. All the other violations have been addressed.**	Plant operator, TOB personnel	Disposition of TOB materials	Moving materials from mezzanine level

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
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 activates the emergency light system and shuts off the 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
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. **The fitting should be replaced. The condition will be monitored. The replacement part has been received**	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
Several leaks were observed 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. **No further action is planned at this time.**	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 **The NYSDEC call-out contractor has been contacted and replacement is pending, (April).**	Outside contractors	None at this time	Crane work, Vault work
the PFF pumps started short cycling	The control relays started chattering and the system was not properly controlling the pumping operation. It was determined that the float switches need to be replaced The L-1 float switch was replaced and the short cycling has stopped. **Plans to replace the remaining 5 switches are being made.**	Plant operator and HDR resources	Plant shut down is required	Confined space entry work

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
PFF P1 has started making a lot of noise	The pump when activated immediately makes a lot of violent noise, and the pump drop tube shakes. Smoke/ fumes emanated at the Motor-shaft connection. The motor appears to be good. The pump was removed from service, 2/24. **It is recommended that the motor be disconnected, lifted, and the mechanical connection be checked.**	Outside contractors	Not at this time	To be determined
ASF P1 has started to emit a high pitched whine	The pump was taken out of service as a precautionary measure as its operating hum grew louder **The system will need to be checked.**	Plant operator and outside resources	Not at this time	To be determined
ASF P1 and PFF P3 discharge valves have failed Open	**The valves are stuck in the open position. This does not affect the day to day operation but may have an impact on future PM tasks.** **No further action at this time.**	**Plant operators**	**A shut down will be required to replace the valves**	**To be determined**

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 (AS) 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 3-18-2020. The most recent analytical results are for the February samples. The results are shown below.

Parameters	Discharge Limitations (SPDES)	Units	Results Feb '20
pH (Average)	6.5 – 8.5	SU	6.75
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	17.1
Chromium, Hexavalent	100	ug/l	U
Lead, Total recoverable	50	ug/l	U
Iron, Total recoverable	600	ug/l	211
Manganese, Total recoverable	600	ug/l	402
Mercury	Not indicated	ug/l	U
Zinc	Not indicated	mg/l	U
Nitrogen, Total (as N)	10	mg/l	4.1
Selenium, Total recoverable	40	ug/l	U
Solids, Total Dissolved	1000	mg/l	297
Chloride Ion	NL	mg/l	124
Cyanide	Not indicated	ug/l	U
Fluoride Ion	NL	mg/l	0.024
Sulfate Ion	NL	mg/l	21.6

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)
Apr ‘18	7.1
May ‘18	7.05
June ‘18	6.5
July ‘18	6.95
Aug ‘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
Apr ‘19	6.54
May ‘19	6.61
June ‘19	6.5
July ‘19	6.6
Aug ‘19	6.56
Sept ‘19	7.45
Oct ‘19	6.86
Nov ‘19	6.88
Dec ‘19	6.84
Jan ‘20	6.63
Feb ‘20	6.75
Mar’20	6.74