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COMMITMENT & INTEGRITY DRIVE RESULTS

HULL WATER POLLUTION CONTROL FACILITY

December
2018

MONTHLY OPERATING REPORT



NPDES NO. MA0101231

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Cover pictures:

Setting of new Chain wall platform

Overhead view - Chain wall platform for new fuel tank in place

1 EXECUTIVE SUMMARY

This Monthly Operating Report provides a summary of the pertinent information and activities that occurred at Hull WPCF during the month of December 2018.

- No lost-time incidents for the month of December.
- There were 140 effluent samples taken in the month of December. Please see page (8) for details.
- There were no effluent permit violations. There were additional sludge trucks needed to reduce the sludge backlog in the process tanks and the gravity thickener.
- Plant average flows returned to levels that were more typical for this time of year. There were a few days of rainfall during the month, but the dates were spread out approximately 10 days apart, therefore, plant flow impact was significantly lower. The average daily flow for the month was 1.61 MGD, and the peak day was 2.78MGD on 12/2/18.
- As noted last month, plant and collection system odors are low for this time of year. The Bioxide system at PS 3 remains off for the season.
- Asset Management Accounts checkbook for tracking of expenses is ongoing weekly for year #4. A summary of year-to-date totals for [04M]. Review of account status between W&C and Hull Sewer Dept. is on-going.
- There was one grinder pump call out during the month of December that the staff responded to and corrected.
- As noted last month, the Underground Storage Tank Removal Project was completed. Work continued on the Above Ground Fuel Storage Tank. The chain wall preparation work was started in mid-December, with Comm Tank performing the work. Comm Tank erected the chain wall on 12/27-28, and nearly completed all of the backfilling and compaction needed by 12/31. Jason Anderson - W&C Engineering is providing oversight for this project.
- Still pending review - the lower than expected output flows for pumps at Pump Station 1 & Lift Station A.
- Ladder work for the pump stations is still on hold. Further discussions on the available need, review of OSHA requirements, and budgets available.
- National Water Main sewer line cleaning and CCTV work ahead of the planned paving project.
- W&C O&M working with engineering and HSD on the development of the "Critical Equipment" needs list for the SRF funded account.

Woodard & Curran strives to deliver a high-quality operations service and is responsive to our customers concerns. Please feel free to request any modifications to the format or content of this report.

2 FLOWS AND LOADINGS

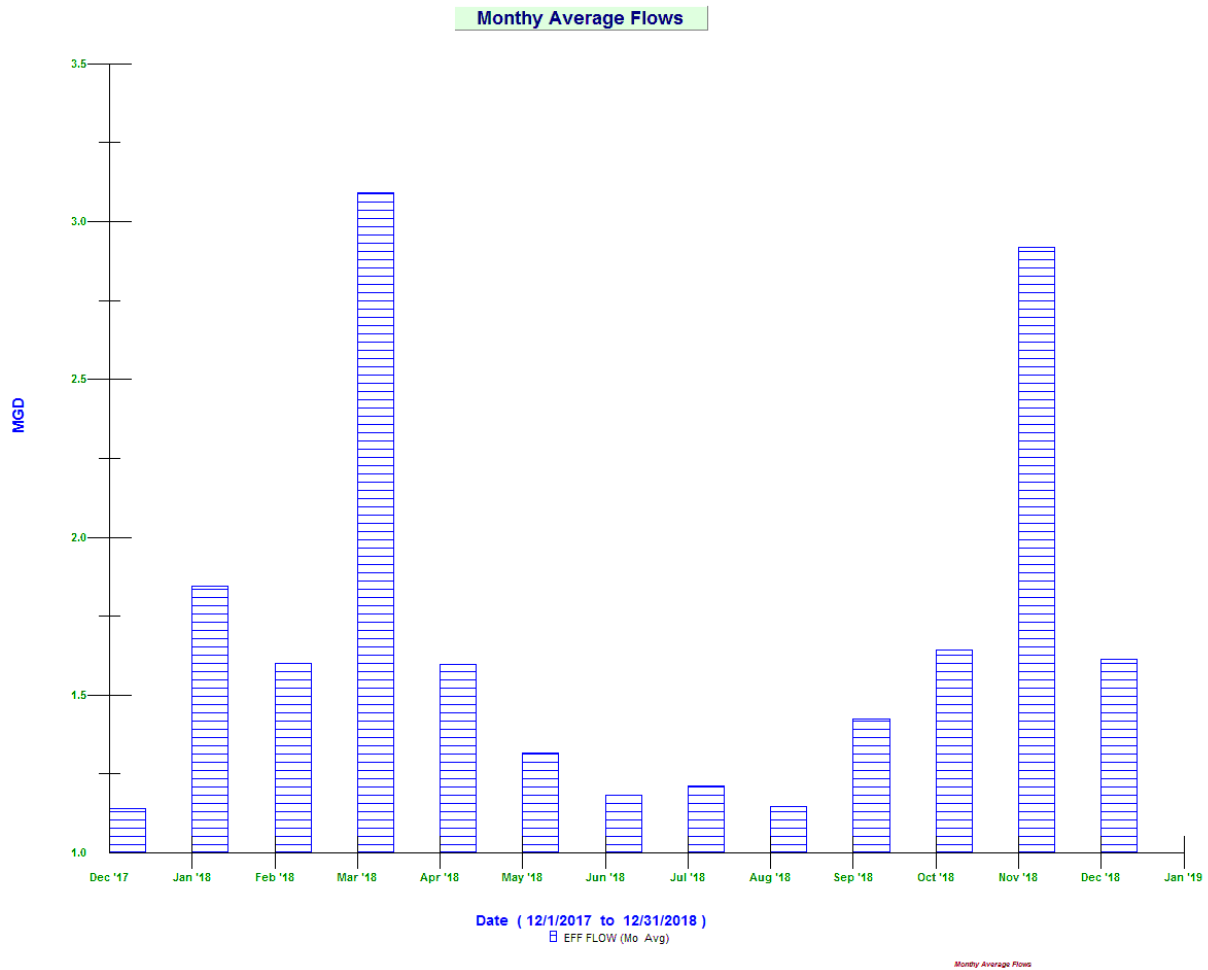


Average Daily Flows and Loadings for the Month:

	Eff Flow MGD	Inf Flow MGD	Inf BOD LBS	Inf TSS LBS	Eff BOD LBS	EFF TSS LBS
Dec 2016	1.347	1.614 *	2073	3790	77	199
Dec 2017	1.139	1.074 *	3102	3277	60	166
Dec 2018	1.615	1.811 *	1035	1722	67	199

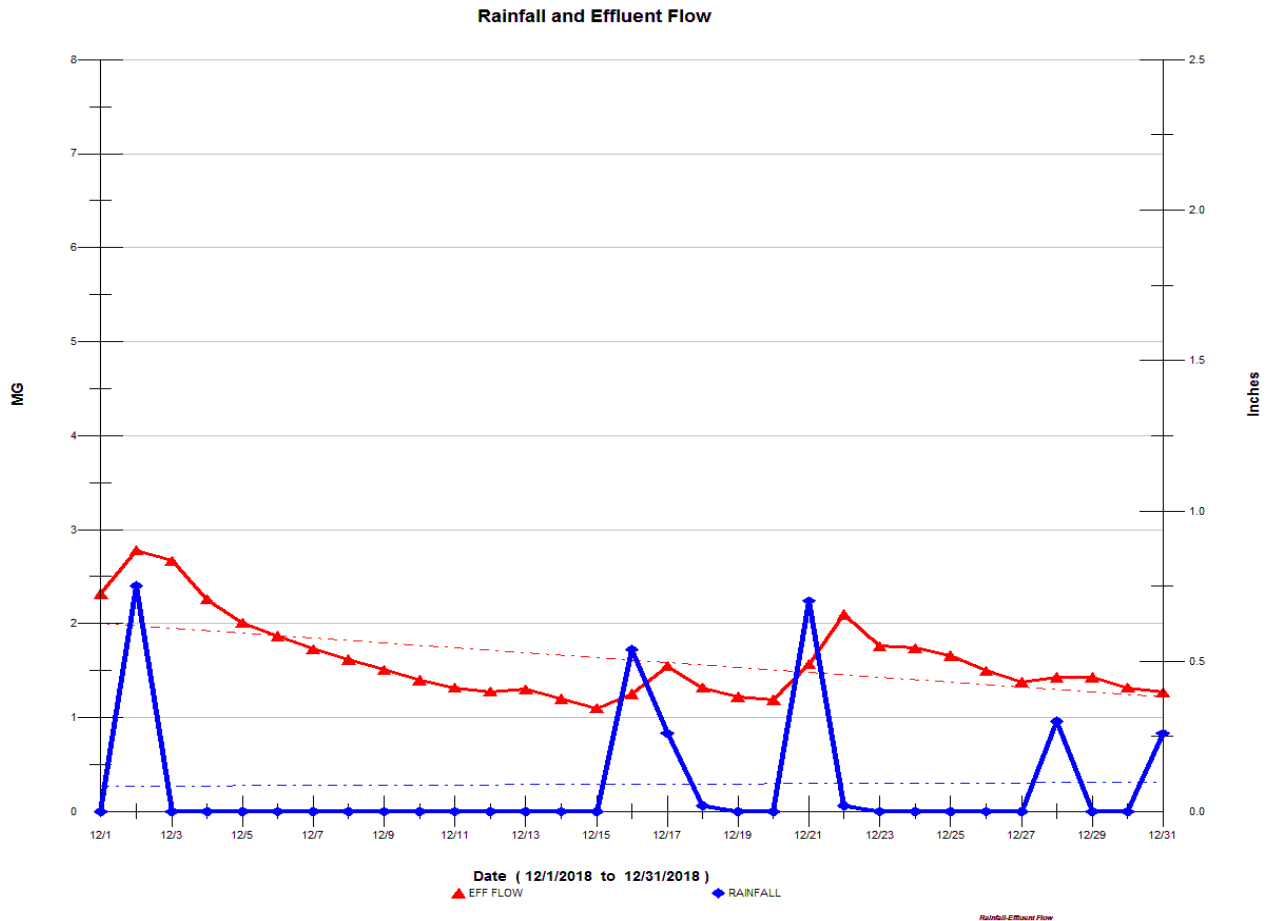
* Meter drift – influent flow meters are strap on doppler flow meters and the internal pipe condition prevents getting a strong signal. The staff adjusts accordingly and utilizes the area velocity meter in the aeration tank inlet channel as needed. All loadings are based on the effluent flow meter.

2.1 AVERAGE EFFLUENT MONTHLY FLOWS – ONE YEAR COMPARISON



Monthly average flow for December returned to more typical amount for the winter months. There was no snow recorded during the month of December.

2.2 MONTHLY SUMMARY OF RAINFALL AND THE INFLUENCE ON EFFLUENT FLOWS



This graph shows the days where plant flows were higher due to rainfall [Blue Peaks]. This graph provides a good indication of the influence that rainfall has on the effluent flows. Inflow and Infiltration out in the collection system has been noted with the increased effluent flow values when it rains.

3 COMPLIANCE



➤ Plant Effluent

- There were no exceedances for the month of December.
- Plant process conditions continue to be good & maintaining very well. The clarifier surface improved during the month and now good. Chlorination of the RAS was intermittent, based upon flows, RAS pump selection, and Drylet trial. The process solids inventory at the start of the month was very high due to the Drylet trial, and from the high November flows into the facility. The high flows contributed a lot more solids that made it to the facility that were scoured out from the collection system. All of the primary sludge generated is being pumped to the gravity thickener and co-settling with the secondary waste activated sludge.
- A very high volume of sludge gallons were removed from the facility to get the solids inventory down to manageable levels. A total of 168,000 gallons of sludge were transported out of the facility.
- Utilizing various aeration blower modes during the month, due to excessively high dissolved oxygen levels in the aeration tanks. Modes used were timed on and off mode & restricting suction valve on blower to draw in less air to the system. Both modes save on some electrical costs.
- Aeration Process mode changed over to contact stab mode on 12/21 in anticipation of higher flows, and decision made to stay in this mode, as process conditions seemed to improve.
- A Copy of the NPDES report for December 2018 was submitted to the DEP and then forwarded to the Hull Sewer Dept.
- Continued working with corporate team for planning and rollout of company /process control plan/ template. A meeting was held to review of process flow diagrams, detention time calculations,

previous performance evaluation reports. Chibby Alloway of W&C visited the plant in early December to review unit process reports, graphs, and limits for notification as conditions change.

- The Drylet Trial continued and passed the initial 90-day milestone date. Since there was still some uncertainty as to the anticipated solids reduction, W&C decided to continue with the program in order to monitor for a longer period of time. The variable and higher plant flows also contributed to the uncertainty of the amount of solids reduction, with the use of this product. To date, the facility's biological system has adapted well to the supplemental bacteria that is being added daily, however, the higher solids inventory is difficult to manage during the high flow periods. As noted above, the process scheme was changed in late December to the "contact stab" mode to lessen the solids loading on the secondary clarifiers. This change along with lowering the solids inventory has improved the secondary sludge settleability. There are regular calls, data exchange, dosage rates and updates discussed with the Drylet Team on an on-going basis.

Photos below show the improved conditions as a result of lowering the sludge inventory and changing of process flow mode. These pictures were taken on 12/28/18



Secondary Clarifier improved clarity



Aeration tank #3 – lower solids levels/better color

4 KEY PERFORMANCE INDICATORS



4.1 WATER QUALITY - DECEMBER

Parameter Info		Permit Requirements					Results				
Parameter	Units	Daily Max	Daily Min	Weekly Avg. Max	Monthly Avg. Max	Freq	Period Avg.	Period Min	Period Max	# of Samples	# of Violations
Eff TSS	MG/L	50		45	30	1 X Week	15.3	8.0	22.0	4	0
Eff TSS	LBS			1152	768	1 X Week	199.2	143.1	304.6		0
% TSS Rem	%		85			1 X Month	88.2				
Eff BOD	MG/L	50		45	30	1 X Week	5.3	3.3	9.2	4	0
Eff BOD	LBS			1152	768	1 X Week	67.5	45.7	101.3		0
% BOD Rem	%		85			1 X Month	93.6				
Eff Chlorine	MG/L	1.0			0.7	3 X Day	0.07	0.01	0.50	93	0
Eff Fecal	#/100 ML	260			88	1 X Week	10	10	10	4	0
Eff pH	SU	8.5	6.5			1X Daily	7.0	6.7	7.3	31	0
Enterococci	#/100 ML	276			35	1 X Week	15	10	30	4	0

- There were 140 effluent samples taken in the month of December with zero [0] NPDES Permit exceedances.
- Gallons Treated vs Sludge Disposed

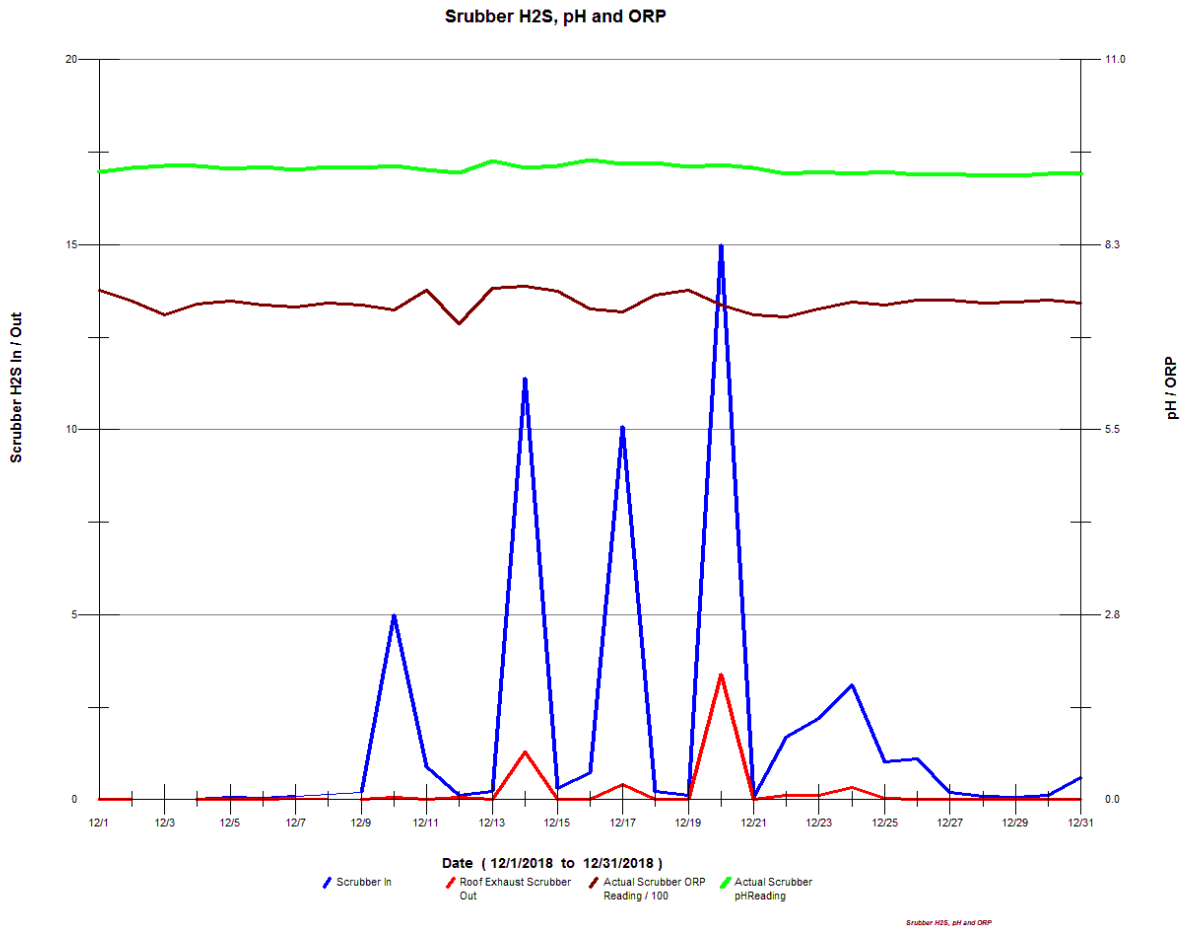
Month	Effluent Treated, MG	Sludge Disposed, Gals
December 2016	41.75	117,000
December 2017	35.30	115,600
December 2018	50.06	168,000

5 ODOR CONTROL

There were no odor complaints reported in December

The gravity thickener and primary clarifier were on for the month of December. Due to recent high plant flows, colder temperatures, and a high sludge inventory, it was necessary to keep these process units on line. The waste activated sludge currently is being pumped to the underground sludge holding tank #2, via the blend box. Aeration tank troughs are being flushed, to minimize build-up of odors.

The odor scrubber system was on line for the entire month. As noted last month, the scrubber media is scheduled to be replaced. The new media has been purchased and on site. The system pH and ORP probes were checked. Scrubber operation is good. A late January/early February target date is when the scrubber system will be down for maintenance. The colder temperatures will be favorable to performing this work, with little impact to plant site odors.



Graph shows several peaks for H₂S to the scrubber. These peaks were due to the H₂S generated in the primary sludge resulting from intermittent primary sludge pumping to the gravity thickener [GT]. This was due to the GT being full of sludge.

- “In-Pipe” bacteria addition continued with all 24 dosing stations operational. No additional actions taken for headworks sulfide reduction plan proposed by “In-Pipe. The inspection/replacement with full bottles took place on 12/10/18. All work being tracked on the Utility Cloud [UC]. In-Pipe’s technician assisted with the dosing station bottle changeouts, inspection of the dosing units, provided feedback on various maintenance tasks associated with the dosing stations.

- Continued the bi-weekly change outs of the bacteria bottles at three lift stations Microbe Dosing Stations (MDU's) with installation just in front of the three largest pump stations [in the wet wells or manhole just prior to the station. [PS 3, PS 5, PS 9] The re-load plan is delivering an additional 5.4 liters per month in total (1.8 liters x 3 locations). The goal is to see if we get a step change and reduce odors, while at the same time potentially reducing sludge. This change is being monitored closely over the summer months, for pump stations and at the plant.
- On-going – frequent pumping of the secondary scum wells. Tank cleaning performed quickly and as needed.
- No [Bioxide] product added, system off for the winter period.
- Mixing systems/aerators all functional at the pump stations, except for pump station #3. New Medora Gridbee mixing system for PS 3 not installed yet.
- Still in Progress - Vetting of ideas/discuss options for headworks area to reduce corrosion and odors. These items part of the discussion with Tighe and Bond's HVAC evaluation/upgrade.

6 MAINTENANCE SUMMARY

6.1 TASKS COMPLETED THIS MONTH

The monthly work order summary for December compiled and attached as pdf file for review.

Key items of note are listed below.

- 1) Completed cleaning out aeration tank #4. Windriver Environmental in to vector out remaining heavy solids from tank. Staff assisted with the in-tank work.



Pile of debris on floor



Bill & Dave cleaning tank with WRE vector truck

- 2) The Deragger unit at PS6 has been working very well with no issues. To date, the #1 pump has not needed any cleaning. The 2nd sump pump was installed by staff, and a new sump float cable cabinet installed by Fellows Elec. PS 4 and PS 6 aerator mixers now on timed control through SCADA.
- 3) Verizon "Comm Fail" issues with the pump station communication Saturday 12/22 through Monday 12/24. With no pump station data or alarms, the pump stations were checked 3 times daily at 8-hour intervals to ensure proper operation and wetwell levels. The problem was on Verizon's end, where a fiber-optic problem existed for a number of circuits.
- 4) Resolved issues with the 3-phase extension cord for the portable electric pump. Verified proper operation/rotation of the pump.
- 5) Various plant electrical issues addressed – MCC1 electrical bucket safety issue investigated [incorrect breaker in bucket]; thermostat for sludge room replaced, secondary heater replacements started.
- 6) On-going issue – the need to add oil to sec clarifier gear boxes and the GT gear boxes. All of the units have leaks [lower gear box seals are not good]. We are using a flowable grease that is heavier to lessen the amount of leakage. The estimated use of product is 2.5 gallons per week.

- 7) Weekly No loads and Monthly load tests completed on all generators including the portable generator and pump stations.
- 8) Completed the installation of new rotating assembly for return sludge [RAS] pump #2. The existing volute was corroded. The rot holes were cleaned and coated with a ceramic coating before installation of new rotating assembly. We will attempt to replace the mechanical seal for the older rotating assembly to be installed for RAS pump 3. All three RAS pumps are in fair to poor condition and two pumps have been recommended for replacement under the SRF critical spares replacements.



Before

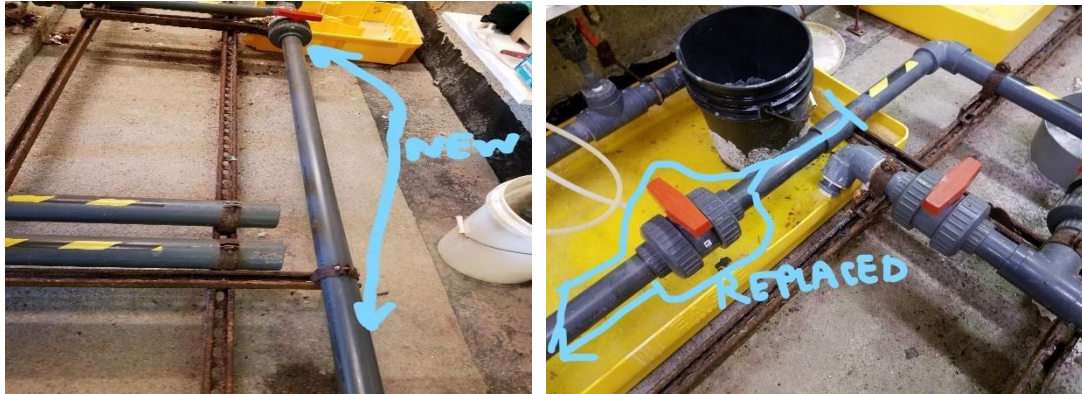


Ceramic repair coating

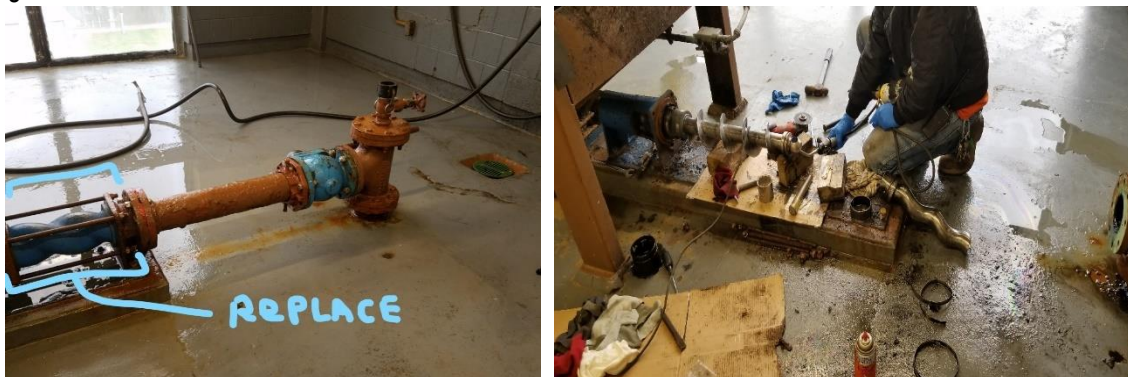
- 9) Steve Rose remote in for SCADA work on electrical data related to aeration blower. [snapshot of data being collected below]. Data collected will be useful to demonstrate energy tracking and cost saving efforts.

Town of Hull, MA										Prepared by Woodard & Curran					
Energy Tracking & Analysis										Engineer: Jesse Moorehead					
Date	AB PowerMonitor500				Basin 1			Basin 3			Blower System				
	Kw	KVA	KWH	PF	DO	CFM	Position	DO	CFM	Position	PSI	VFD 1 RPM	VFD 1 Kw	VFD 2 RPM	VFD 2 Kw
12/30/18 7:00 PM	225.31	226.35	177702.25	0.99	2.21	612.00	41.20	1.52	1021.00	98.80	5.70	0.00	0.00	2945.00	35.00
12/30/18 8:00 PM	235.93	236.99	177919.50	1.00	2.48	612.00	41.20	1.44	1039.00	98.70	5.70	0.00	0.00	2941.00	34.84
12/30/18 9:00 PM	215.78	217.09	178129.23	0.99	2.13	616.00	41.20	1.29	1036.00	98.70	5.70	0.00	0.00	2941.00	35.04
12/30/18 10:00 PM	223.17	224.34	178353.83	0.99	2.28	606.00	41.20	1.42	1036.00	98.70	5.70	0.00	0.00	2945.00	35.04
12/30/18 11:00 PM	210.74	214.65	178561.28	0.98	2.28	616.00	41.20	1.51	1040.00	98.80	5.70	0.00	0.00	2943.00	35.01
12/31/18 12:00 AM	203.52	207.71	178765.20	0.98	2.27	614.00	41.20	1.26	1043.00	98.70	5.70	0.00	0.00	2942.00	35.10
12/31/18 1:00 AM	246.72	247.69	178982.06	1.00	2.33	628.00	41.20	1.69	1040.00	98.70	5.70	0.00	0.00	2944.00	35.13
12/31/18 2:00 AM	209.95	210.94	179182.25	1.00	2.80	602.00	41.20	2.33	1041.00	98.70	5.70	0.00	0.00	2944.00	35.15
12/31/18 3:00 AM	199.61	200.64	179382.91	0.99	3.10	596.00	41.20	2.97	1020.00	98.70	5.70	0.00	0.00	2944.00	34.84
12/31/18 4:00 AM	204.04	205.00	179594.91	1.00	3.52	605.00	41.10	3.66	1021.00	98.70	5.70	0.00	0.00	2943.00	34.76
12/31/18 5:00 AM	189.00	192.97	179790.95	0.98	4.05	605.00	41.20	4.35	1037.00	98.70	5.70	0.00	0.00	2943.00	34.85
12/31/18 6:00 AM	218.17	219.07	179985.63	1.00	4.49	607.00	41.20	4.93	1024.00	98.80	5.70	0.00	0.00	2942.00	34.92
12/31/18 7:00 AM	217.07	220.51	180194.38	0.98	4.44	624.00	41.20	5.74	1025.00	98.80	5.70	0.00	0.00	2942.00	35.10

- 10) Repairs to hypochlorite storage room 2-inch PVC piping. Approximately 9 ft of pipe and new ball valve installed.

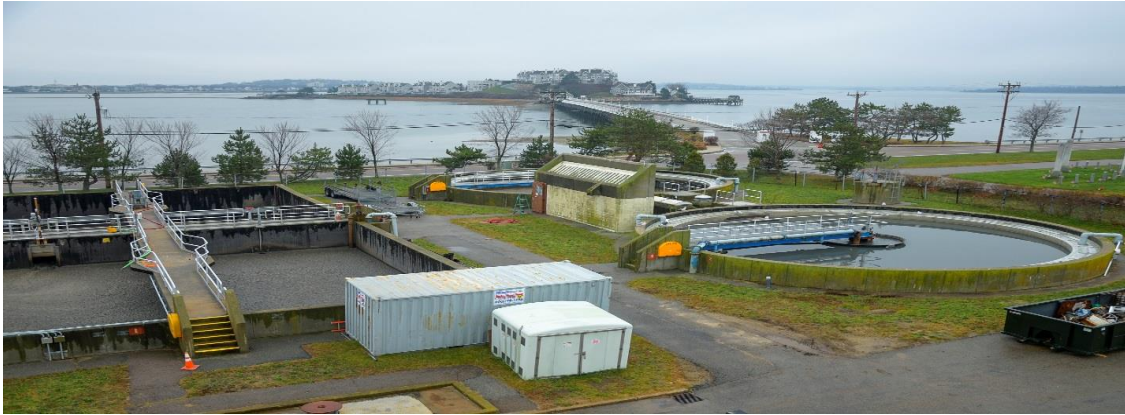


- 11) Callout to PS 4 for lower pump room sump issue – re-attach/secure discharge check valve assembly clamps [were loose]
- 12) Visits to D Street stormwater station as needed to ready/prime portable trash pump for back-up use. Attempted to reposition ocean level transmitter, with little or no improvement seen. Next step will be to contact manufacturer's rep.
- 13) On-going Dig-Safe mark outs completed, due to emergencies, upcoming paving projects, and responded various rattling manhole covers, broken manhole covers/rims, sunken manholes covers/rims. All work that W&C completed is documented in the monthly Work Order Report.
- 14) Completed rebuilding of the RST thickened sludge pump and installed new 4-inch isolation valve on discharge piping.



- 15) On-going repairs to E-1 grinder pumps by F R Mahony Corp. Maintaining the current spare pump inventory, as well as maintaining some stocked items/supplies for these systems.
- 16) There was one grinder pump call out during the month of December
- 170 N. Truro – replace grinder pump

6.2 ON GOING PROJECT UPDATES



- Drylet bacterial process enhancement trial continued in December. [See effluent/compliance section]. Continued monitoring of the biological system and additional sampling performed during September as requested. Most significant process change was to reduce high MLSS levels back down to 3500 mg/L.
- Pump Station 4, Pump Station 9, and Plant Headworks are now being evaluated together for a structural concrete repair design and bid to be done as part of an on-call services agreement with a contractor. The details are still being evaluated. As noted before, the mechanical work is being held up at pump station 4 due to structural safety concerns. As the bidding is not possible to do through O&M team, a larger structural project concrete repair work scope is in now in discussion / planning stages.
- Plant water basket strainer – We are still investigating a replacement unit, either the same as the current unit, or from a different Mfr. We have yet to evaluate the operating mode - manually cleaned or auto-cleaned. Also looking at where effluent water is drawn into the system, evaluating the size of the suction piping, considering other suction location for system to improve water quality – utilizing water from effluent wet well versus drawing from bottom of a manhole just after the secondary clarifiers. Will be listed under critical needs equipment under the SFR. Looking at the current manufacturer, Hellan, as well as another supplier, Eaton Products.
- The sluice gate supports for the inlet gates to primary clarifiers at the D-box. As noted previously, the supports have lifted away from the concrete and there is also cracked concrete under the supports. Quotes for the repair are on hold, and the work may be done, when the influent headworks structural repairs are performed. This item is currently listed under the 04M projected costs, as work could be committed in Spring.
- Still looking at an alternative use for one of the existing primary clarifiers, especially the #1 PC, since the drive unit has extensive damage. Conversion to a mixed tank and floating aerator are being considered. This would allow for hydraulic flow into the tank, and not restrict flow at the D-box, which is currently a concern, as having the primary tanks off line in the warmer months eliminates many of the odors around the facility. This item is being considered under the SFR Critical needs equipment. A couple of budgetary quotes have been received.

- Pump Station #1 – Two new pumps installed at Pump Station 1 by Aqualine Utility, assisted by W&C staff and safety rescue services provided for by O'Connor Safety. The work was completed on 11/9/18. While the new pump operation is good, the output flows are lower than anticipated, leading to a consultation with the Manufacturer, and assessment of a possible force main restriction, and a change in the overall system conditions. Impeller upsizing may be an option.
- Jim Sturgis visited the facility in early November to inspect the inside of aeration tank #3, since the tank was emptied out for repairs. He is also assisting with the ladder scope, various structural repairs/needs and AST project, and was on site for the Task Order "kick-off meeting on 11/7.
- Yard hydrant status unchanged. Four new yard hydrants received and will be installed in the spring. A local contractor will install.
- Tecta New England [roofing contractor] inspected and performed some repairs to the WWTF building roof. [Nov. 2018]. Recommendation made to address the stairwell roof leaks provided. A section of roof flashing is scheduled to be replaced. The O&M support staff will replace the weathered exterior for the exit door to the roof.

Picture of Operations building roof



Stairwell Roof



Section of flashing to be repl.



Exit door to roof – weathered

- The request for quotation to install new ladders was sent out in late September for all of the pump stations. The bids received in mid-October were reviewed. The pricing that did come back was higher than anticipated, and currently the work is on hold.
- On-going co-ordination calls & project management for the Horizon Gap2 Energy grant work. Odor control fan VFD, Engine block heater – heat pump unit, and Aeration system piping modifications. To date, the heat pump is operational, VFD on scrubber is operational, and the aeration piping modification has been completed [by O'Connor]. The air flow meter and controller for the air valve are expected to be completed in Jan/Feb. W&C SCADA group will be performing all of the controls set up and programming.

- Co-ordination for a Duperon site visit for an inspection of the influent channel flex rake is still being worked on. They have not had an available technician scheduled for our area. They were booked at least into mid-January. Ted Berry Co. - Clean & CCTV #1 Secondary Clarifier #1 RAS and MLSS Piping.
- Bill B and John S worked with TBerry to develop project scope that included the following: Jet/Vac clean piping as needed and CCTV inspect 12" steel piping from the RAS box to the 90° at the base of the concrete drum in #1SC. Use push camera through inspection windows in the center column of #1SC to further evaluate extent of current condition of 12" RAS suction pipe. Then Jet/Vac clean as needed and CCTV inspect the 16" MLSS influent pipe from the splitter gate valve to the opening into the concrete drum in #1SC. Plant flow to be bypassed during this inspection. Anticipated duration is for 1 – 2 Hours.4. Provide onsite consultation during work regarding trenchless rehabilitation methods that might be employed as well as evaluate extent of access required for such techniques with the intent to minimize demolition of #1SC components. Dispose of debris collected at plant disposal pit. Project targeted for Jan. 2019.
- Looking at available weather stations for use on the Operations building roof to replace a failed unit, no longer at the facility. No specific unit has been selected, but SCADA group has provided recommendation for a unit where the data can be transmitted and tracked in the SCADA system.
- SPCC: Plan for monitoring fuel stored at the facility. Regular inspections of the temporary AST and fuel day tank, as well as container storage of waste oil. Updated file.
- K. Richards confirmed that the "No Exposure" certification for Hull under the stormwater permitting program exempts the Town from the annual reporting requirement under the Multi-sector general permit. This doesn't apply to facilities who have certified No Exposure, but only to facilities that have coverage under the Multi-sector general permit [MSGP].

Please see the attached summary of the Asset Management accounts for contract year (4)
























7 SAFETY



It is Woodard & Curran's policy to maintain a safe and healthy work environment for every employee and to comply with applicable occupational health and safety regulations.

- No lost-time incidents for the month of December
- Ongoing - Daily safety briefing meetings, review site safety policies with sub-contractors, safety tailgate topics.
- Pure Safety topic– December – hand, wrist, finger safety
- Continued working with Andy Rowe on pump station ladder standards & specifications for replacement and other safety related issues.
- Key Points – Corporate H&S updates 12/14/18
- Jerome meter for H2S readings is still out-of-service. Loaner unit is currently in use.
- Monthly staff safety meeting conducted on 12/29/18
 - Emergency Action Plan Updated and copy placed in site specific binder
 - A recording of the Working in Winter Weather Mini Session reviewed
 - Mindfulness Meditation Practices - info provided/discussed for staff
 - November 2018 Lessons Learned, and safety observations discussed – Near misses and incidents from other company projects.
 - Bloodborne pathogens site specific update - copy in site specific binder for review.
 - Reminder on Nurse Hotline Change – All-One Health - new medical monitoring provider.
- There is still one 2-ton electric hoist currently out of service – unit repairs are not feasible.
- Storm Readiness Report prepared on 12/20/18.
- Completed company required annual tasks list for 2018 [see below]
- Firs alarm system placed in standby on multiple days while O'Connor worked on air piping in basement [welding]. A fire watch person was designated, and Hull Fire Dept consulted on project work.

Facility : Hull, MA (12)

✓	Conduct Evacuation Drill	2018	Yes	 	Conduct Evacuation Drill	...
	Evaluate Hearing Protector Attenuation	2018	Yes		Evaluate Hearing Protector Attenuation	...
	Inspect Lockout Tagout Procedures	2018	Yes	 	Inspect Lockout Tagout Procedures	...
	Pandemic Flu Plan Review	2018	Yes	 	Pandemic Flu Plan Review	...
	Perform Non-Entry CSE Rescue Practice	2018	Yes	 	Perform Non-Entry CSE Rescue Practice	...
	Review BBP Exposure Control Plan	2018	Yes	 	Review BBP Exposure Control Plan	...
	Review Confined Space Entry Permits	2018	Yes	 	Review Confined Space Entry Permits	...
	Review Confined Space Inventory	2018	Yes	 	Review Confined Space Inventory	...
	Review Emergency Action Plan	2018	Yes	 	Review Emergency Action Plan	...
	Review PPE Hazard Assessment	2018	Yes	 	Review PPE Hazard Assessment	...
	Review Respiratory Protection Program	2018	Yes	 	Review Respiratory Protection Program	...
	Update Chemical Inventory	2018	Yes	 	Update Chemical Inventory	...

8 STAFF DEVELOPMENT

Training is an important part of any operation to ensure employee health and safety is assured, quality standards are maintained, staff skills are improved, career opportunities become available, and higher productivity is achieved.

Listed is a general outline of training that the staff received over the course of the month:

- Monthly staff Safety training – completed – Pure Safety and monthly safety meeting.
- Operational updates and process control discussions, especially with recent electrical issues and plant shut-downs, pump station operations, odor issues, dig-safes, etc.
- W&C “near-miss” incidents at all projects for December discussed.
- On-going training for various staff – Cody P – attended company sponsored confined space training [he is now qualified to enter confined spaces as well as be an attendant]
- Staff – Oil Spill Prevention, Control, and Countermeasure (SPCC) Plan review.
- Jim G working with staff of various SEMS training – work order management & scheduling.

Staffing related items:

- Continued involvement with Mass Maritime [MM] internship program/career fair for future interns. Ryan Holman [senior] was selected for the Jan-Mar internship 2019 and will begin assignment on Jan 7, 2019.
- Sunday rotation schedule in place with Jim Gagliard working every other Sunday, and remaining weekends being filled by Roger B., Aram V., and Bill B. When Bill is not scheduled for a Sunday, he will be on a Monday-Friday schedule.
- Supplementing staff needs with O&M tech support where needed. Jim G and Jody S providing coverage when staff levels are lower due to sickness, vacation, or training.

9 COLLECTION SYSTEM

9.1 WET WELL CLEANING

The actual schedule for wet well cleaning: May 2018 to April 2019:

(X-Cleaned) - (Orange – Inspected) - (Green – See notes) - (blank – no work done)

Frequency of cleaning	Pump Station							
	A	1	3	4	5	6	9	D
May, 2018		X			*1	*1		
June, 2018					X	X		
July, 2018					*2			
Aug., 2018					X			
Sept. 2018				#3	#3		#3	
Oct., 2018	X	X	X	X	X		X	
Nov, 2018	#4	#4		#4	#4	#4		
Dec., 2018					X			
Jan., 2019								
Feb., 2019								
March 2019								
April 2019								

All pump stations except for Pump Station 3 and Station D have an aerator/mixer in the wet wells

- *1 Inspected and needs to be cleaned in June**
- *2 Inspected and needs to be cleaned in August**
- *3 Inspected and needs to be cleaned in October**
- #4 Wet wells were not inspected this month**

9.2 COLLECTION SYSTEM MAINTENANCE

Woodard & Curran assisted/conducted camera work in the Hull collection system at the following areas during the month of December.

58 Park Ave.
51 Park Ave & Rockland Circle
13 Berkley Road
20 Ipswich

180 Newport Road
56 Harborview Rd.
Bay Street/Porazzo Rd.

10 PROJECT MANAGEMENT & ADMINISTRATION



10.1 ON-GOING PROJECTS AND SUPPORT ITEMS

- Asset management checkbook for tracking of expenses. Review of account status between W&C and Hull Sewer Dept. is on-going. [04M]. The report information is available to the Sewer Department and located in the shared file location. The current snapshot of the account status as of 1/18/19 is included as an attached pdf file with this report.
- On-going AST work: Assisted with the following, with Jason Anderson & Frank Cavaleri leading the engineering effort.
 - Oversee Comm Tank's work – site prep, excavation, and air piping re-routing.
 - Staff assisted with laying tarps/covers to prevent freezing of the excavated area & pumping out of accumulated rainwater.
 - Co-ordinate chain wall area backfilling and compaction. Oversee chain wall delivery and setting into place on 12/27.
 - NE Geotech inspected site for backfill compaction
 - W&C ordered tank monitoring system
 - W&C review mechanical and electrical bids in order to make contractor selection
 - Review of costs to complete UST/AST project work
- Multiple engineering tasks were setup and being coordinated through engineering, and there is also SRF funded projects being developed for construction including an interceptor lining project and gun rock area collection system improvements project. In addition to this SRF phase the O&M team has been working on a critical needs list to be an equipment / "goods" purchase only SRF funded project. These items are to have a 20-year service life to qualify for consideration. The O&M team has identified and compiled a priority list of equipment that could be purchased to provide critical equipment replacements and critical spare needs at the WWTF. Jason Kriel and Rosemary Blacquier are leading the submittal effort.

- Peter Lyons [PL] continued to lead the paving program sewer inspectional work (CCTV and MH Inspections) to be completed. National Water Main started the work in mid-December. A brief summary is noted, and the full summary and totals provided next month.

NWM completed work on Bay Street and Kenberma Street. They have finished the original scope of CCTV inspection along Nantasket Ave, Newport Road, and Bay Street. They will continue on Kenberma Street and Revere Street. A few significant defects were located on Marginal Road just upstream of PS 4, as well as broken cover at the intersection of Samoset and Kenberma Street. Planned sewer line cleaning and CCTV linear foot totals will be near 16,000 ft and approximately 90 manholes will be inspected.

- Plant electrical issues: Power monitoring results indicated that the voltage harmonic distortion [THD] results were above the recommended allowable limits. W&C has made some recommendations to install a 150A active harmonic correction unit and estimated costs provided.
- Utility cloud is being used for collection system related asset tracking. In late November the tie card scanning project was completed. Bill B. coordinated the shipment of 3100 tie cards back and forth between Portland and Hull. All of the cards were scanned into "pdf's" and named according to the parcel ID and imported into Utility Cloud. The tie cards can easily be accessed digitally through Utility Cloud and this access will improve the capability and kick off additional Utility Card training for the Town and W&C Hull Staff. Some of the remaining tasks for the tie card project include:
 - A review of about 60 Tie Cards that were not imported to Utility Cloud due to a mismatch between the Tie Card file name and the Parcel #.
 - A review Tie Cards that cannot be named due to lack of information on the cards itself (approx. 40 cards)

Utility Cloud users will have easy access to the Tie Cards anywhere with an internet connection (Smartphone/tablets/PC). Click a parcel on the map – be presented with the Tie Card in the details section. The Town will have a folder containing all scanned tie cards as PDF's - named according to parcel #.

- Participated in several support meetings to discuss engineering task orders, CZM grants, capital planning, effluent outfall pipe assessment, SRF funding, HVAC support for T&B efforts., resiliency upgrades & budget estimates. Discussed effluent room flooding and flood elevation design settings/levels. AST support on-going.
- Co-ordinated with Mike Burns of W&C for the Engineering task order effort for the effluent pump room and about bypassing the headworks.
- Provided to HSD FY2020 initial budget estimates and recommendations per request. Basic CPI-U using Nov. 2018 data; adjusted the portions of 05M for CPI-U; adjusted 05C - collection system chemicals by the CPI-U [to cover potential increases in chemical costs; adjusted 05A – Base Project for additional staff and additional technical support for the SPCC and Air Permitting tasks.
- As needed, working with Woods Hole Group and HMLP for electrical transformer relocation and installation of new utility pole[s] for the new elevated electrical transformer.

- Effluent outfall pipe condition assessment. The actual work would take place in the spring, as it is being funded thru a more comprehensive state SRF loan project.
 - a. Based on discussions with REDZONE Robotics, Inc., they believe that an inspection is feasible, but contains some risk. From their first visit, RedZone thinks that the sonar sub would be the best equipment for the job, considering the outfall is surcharged. They would be able to collect debris and accumulation measurements in the line. Another site visit is planned so that they can prepare a more detailed proposal that would include the field inspection and mobilization/de-mobilization of equipment and crews.
 - b. John S reached out to Ted Berry Company to inquire about a proposal to do an external condition assessment of the effluent outfall. They would use new technology such as a submersible cabled CCTV unit. This approach would give a first good look at the outfall pipe. More information will be needed as to who may have a work boat that could be used as a launch platform.