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**To:** Nevada Division of Environmental Protection  
Nevada Environmental Response Trust

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**Cc:** Nevada Environmental Response Trust Stakeholders

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**From:** Ryan Sullivan, Vice President Service and O&M

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**Date:** April 20, 2021

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**Subject:** NERT – GWETS Operation Monthly Report – March 2021

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At the request of the Nevada Environmental Response Trust (Trust), Envirogen Technologies, Inc. (ETI) is providing this summary of the groundwater extraction and treatment system (GWETS) operation and performance during March 2021.

### Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in March 2021. Flow from PC-119, PC-120, PC-121, and PC-133 was routed to the IX system, bypassing all flow meters associated with the FBR plant. The flow rate to the IX system averaged approximately 193 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1,012 gpm during March 2021. At the end of the month, the GW-11 Pond volume was at 34.4 million gallons (MG), which would allow 19.5 days of available additional storage in the event of an emergency FBR plant shutdown with continued well field pumping. The water volume stored in the GW-11 Pond did not change from the end of February 2020. Figure 1 in this report depicts the actual GW-11 pond volumes and additional storage available.

The influent perchlorate concentration to the IX system averaged 0.16 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 56 mg/L for the month, with a maximum concentration of 58 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of February 2021 averaged 61 mg/L, with a maximum concentration of 69 mg/L.

### Enhanced Operational Metrics

Tables 1 and 2 provide a summary of the current GWETS operational metrics data for flow rates, perchlorate and chromium concentrations, and mass removal. Figure 2 graphically presents historical perchlorate and chromium mass flux information. Attachment A provides a summary of the NPDES permit analytes with numerical discharge limits.

### Operational Issues

All routine plant repairs conducted by ETI were performed in accordance with the NERT Perchlorate

Treatment System Operations Manual. The following is a list of operational issues and major repairs and/or equipment replaced during this reporting period.

## 1. GW-11

There were no operational issues with GW-11 in the month of March.

## 2. Biological Plant

There were influent / effluent diversions during the reporting period generally associated with GW-11 pond level maintenance as well as extraction well short-term shutdown events. Below is a description of the events that occurred:

### Diversion Events / Well Shutdowns

- Influent diversion to GW-11 occurred on March 1, 2021 from 11:00am to 11:30am due to a computer logic controls malfunction. The logic controls setpoints were reentered and the plant was brought back online. Effluent diversion to GW-11 continued until lab testing confirmed compliance. Approximately 340,000 gallons of water were diverted to GW-11.
- Influent diversion to GW-11 occurred on March 3, 2021 from 9:15am to 10:30am due to maintenance efforts on the final Effluent pump check valve. Approximately 78,000 gallons of water were diverted to GW-11.
- Well Shutdown of extraction well E1-1 (AP-5) occurred on March 4, 2021 from 11:30am to 2:10pm due to maintenance activities on the electrical motor and pump. Maintenance was conducted and the well was brought back online.
- Well Field Shutdown of the Interceptor Well Field (IWF) occurred on March 5, 2021 from 6:59am to 7:05am due to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Effluent diversion to GW-11 occurred on March 7, 2021 from 7:24pm to 7:35pm due to high T-621 tank levels. Approximately 8,500 gallons of water were diverted to GW-11.
- Well Field Shutdown of the Interceptor Well Field (IWF) occurred intermittently on March 11, 2021 from 7:05am-7:17am, 7:42am-7:58am, 8:12am-8:27am, 8:40am-8:51am, 9:03am-9:17am, 9:31am-9:47, and 9:59am-10:04am due to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Well Field Shutdown of the IWF occurred on March 11, 2021 from 5:15pm to 6:40pm due to a damaged motor coupling. The coupling was replaced and the well field was brought back online.
- Well Field Shutdown of the IWF occurred intermittently on March 12, 2021 from 6:58am-7:10am, 7:21am-7:36am, 7:39am-8:14am, 8:32am-8:57am, and 9:32am-10:14am, to high inlet tank level alarms at the GWTP and maintenance activities at the level control sensor. Troubleshooting was conducted and the well field was brought back online.
- Well Field Shutdown of the IWF occurred intermittently on March 13, 2021 from 5:24am-5:35am, 6:07am-6:21am, and 6:48am-6:57am due to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Effluent diversion to GW-11 occurred on March 15, 2021 from 2:43pm to 2:56pm due to high T-621 tank levels. Approximately 9,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the IWF occurred intermittently on March 16, 2021 from 4:51am-5:02am, 5:34am-5:48am, 7:27am-7:36am, and 10:03am-11:03am due to high inlet tank level alarms at the

GWTP and maintenance efforts resulting from electrical issues at the pump VFDs. Troubleshooting and maintenance were completed and the well field was brought back online.

- Well Field Shutdown of the IWF occurred on March 17, 2021 from 10:30am to 2:05pm due to maintenance efforts in the influent pump (P-1b) VFD. Maintenance was completed, the pump was rewired, and the well field was brought back online.
- Influent diversion to GW-11 occurred on March 17, 2021 from 12:00pm to 12:44pm due to preventative maintenance efforts to conduct settled bed height measurements. Approximately 46,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the IWF occurred intermittently on March 23, 2021 from 8:22am-8:30am, 10:31am-10:41am, 11:11am-11:19am, 11:21am-12:04pm, 12:28pm-1:10pm, 1:39pm-2:21pm, and 2:51pm-3:01pm due to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Well Field Shutdown of the IWF occurred intermittently on March 24, 2021 from 4:33am-4:43am, 5:03am-5:13am, 5:41am-6:00am, and 7:06am-7:16am, to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Well Field Shutdown of the Seep Well Field (SWF) occurred on March 26, 2021 from 5:55am to 6:02am due to an overheated VFD panel. Maintenance was conducted on the cooling system and the well field was brought back online.
- Influent diversion to GW-11 occurred on March 26, 2021 from 9:29am to 9:55am due to maintenance efforts at the air lines at the FBR 7 and 8 pump skid. The air lines were replaced and the plant was brought back online. Approximately 28,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the IWF occurred on March 28, 2021 from 7:33am to 8:03pm due to high inlet tank level alarms at the GWTP. Troubleshooting was conducted and the well field was brought back online.
- Well Field Shutdown of the IWF occurred on March 29, 2021 from 10:42am to 12:28pm due to maintenance efforts in the electrical transformer. Electrical abnormalities have been present in the reoccurring level control problem, at the GWTP inlet tank, that has been causing the IWF shutdowns. Maintenance efforts were conducted and the well field was brought back online.
- Well Field Shutdown of the IWF occurred on March 30, 2021 from 1:02pm to 1:09pm and 3:06pm to 3:36pm due to maintenance efforts on the effluent pipeline. Maintenance was completed and the well field was brought back online.

### **3. Spills**

There were no reportable spills in the month of March.

### **4. Maintenance**

- Major maintenance performed by ETI in the reporting month included:
  - I. Pressure washed and inspected the south DAF.
  - II. Flushed the ORP lines.
  - III. Marked the Combo Valves for road construction near Lift Station 1.
  - IV. Traced and identified wires in the GWTP MCC.
  - V. Jetted the pipeline from the GWTP to the EQ Area.
  - VI. Changed the oil on the Lift Station 2 turbine pump.
  - VII. Flushed the sump pits around the plant.

- VIII. Flushed the solids from the bottom of the Influent tank at GWTP.
  - IX. Removed the solids from the reject tank for the sand filter.
  - X. Flushed the solids from separator 1 back to FBR1.
- Preventative Maintenance completed or being performed by ETI in the reporting month included:
    - I. Replaced the flowmeters on E2-4 and E1-1 extraction wells.
    - II. Installed the new P-1001 GWTP EFF pump.
    - III. Installed a new GWTP Influent 5hp motor, wires, VFD, control wires, and transformer.
    - IV. Replaced the coupling on the GWTP Influent pump.
    - V. Replaced the signal controller on FBR 5/6 feed valves.
    - VI. Installed a new positioner and actuator on FBR 6 feed valve.
    - VII. Installed a new check valve on the discharge of P-1302A final effluent pump.
    - VIII. Rebuilt the bed height pump for FBR 3.
    - IX. Replaced the sump pump at the GWTP.
    - X. Installed new fuses on the Chicago Pneumatic air compressor.

## **GWETS Upgrades and Facility Projects**

Unit 4 Chromium Water Treatment Plant – Envirogen received comments regarding the deliverable documents that were submitted to the Trust in July 2019 for this project. The revised documents dealing with the Controls Specification, Process Drawings, and Mechanical Details were re-submitted to the Trust in September 2020. Envirogen is awaiting further direction from the Trust regarding this matter. The Trust has advised Envirogen that this project is on hold pending finalization and approval of the forthcoming Unit 4 Source Area In-Situ Bioremediation Work Plan.

GWETS Extension–The signed Work Authorization for engineering and fabrication of the GWETS Extension was returned to the Trust on January 28, 2020. As a result of changes in the local zoning laws that prohibit the use of shipping containers as structures, Envirogen submitted a Work Authorization to the Trust for: re-designing the pump system containers to independent skids; modifying the electrical control panels; and providing 3-sided canopies to house sun sensitive equipment. The Work Authorization was signed by Envirogen and the Trust in March 2021. Envirogen received comments from the Trust regarding the GWETS O&M Work Authorization (Contract Amendment 8) and provided a response in March 2021.

## **GWETS Staffing**

ETI continues with 24-hour staffing of the GWETS at the direction of the Trust and continues to follow the security procedures in the Standard Operating Procedures (SOP).

# Tables

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*Operational Metrics*

Nevada Environmental Response Trust   Groundwater Extraction and Treatment System   Monthly Stakeholder Metrics				
Location ID	Average Flow Rate (gpm)	Perchlorate (mg/L) <sup>4 5</sup>	Chromium (TR) (mg/L) <sup>4 5</sup>	Chromium(VI) (mg/L) <sup>4 5</sup>
SWF Total Extraction <sup>1</sup>	749 <sup>3</sup>	7.0	0.0013	0.0012
AWF Total Extraction <sup>1</sup>	463 <sup>3</sup>	59	0.13	0.13
IWF Total Extraction <sup>1</sup>	61 <sup>3</sup>	405	6.4	6.7
AP Area Total Extraction <sup>1</sup>	8.7 <sup>3</sup>	639	0.14	0.14
GWTP Effluent <sup>2</sup>	59	253	0.07	ND
GW-11 Influent <sup>1</sup>	0.3	35	0.06	0.053
FBR Influent <sup>2</sup>	1,012	56	0.024	0.026

## Notes:

TR = Total Recoverable; NA = Not Analyzed; ND = Not detectable above laboratory method detection limit (Chromium (VI) = 0.25 ug/L).

1: Perchlorate and chromium TR sampled monthly, values reported from Eurofins TestAmerica.

2: Perchlorate, chromium TR, and chromium (VI) sampled weekly, values reported from Eurofins TestAmerica.

3: Sum of daily average flow for individual wells.

4: All concentrations reported are monthly flow weighted averages.

5: ND analytical values are treated as zero values in the flow weighted average calculations.

Nevada Environmental Response Trust   Groundwater Extraction and Treatment System   Monthly Stakeholder Metrics			
Location ID	Perchlorate (lbs/month) <sup>1</sup>	Chromium (TR) (lbs/month) <sup>1</sup>	Chromium (VI) (lbs/month) <sup>1</sup>
SWF Total Extraction	1,962	0.36	0.34
AWF Total Extraction	10,227	23	23
IWF Total Extraction	9,227	146	153
AP Area Total Extraction	2,072	0.45	0.46
GWTP Effluent	5,600	1.5	ND
GW-11 Influent	4	0.01	0.006
FBR Influent <sup>1</sup>	21,017	6.9	7.6

Notes:

TR = Total Recoverable; NA = Not Analyzed.

1: Total mass extracted is calculated from flow weighted average concentration and average flow (see Table 1).

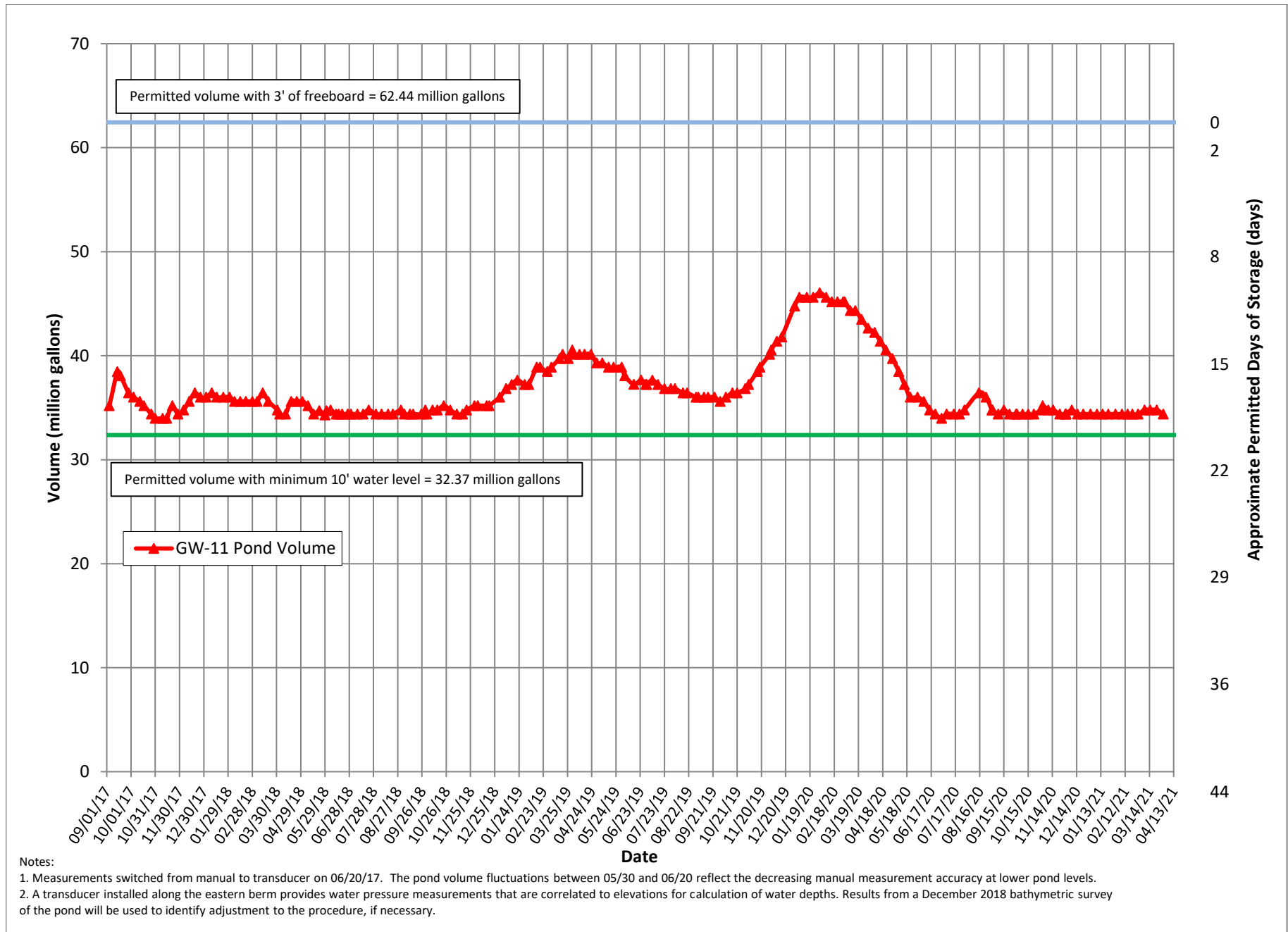
# Figures

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*Operational Metrics*

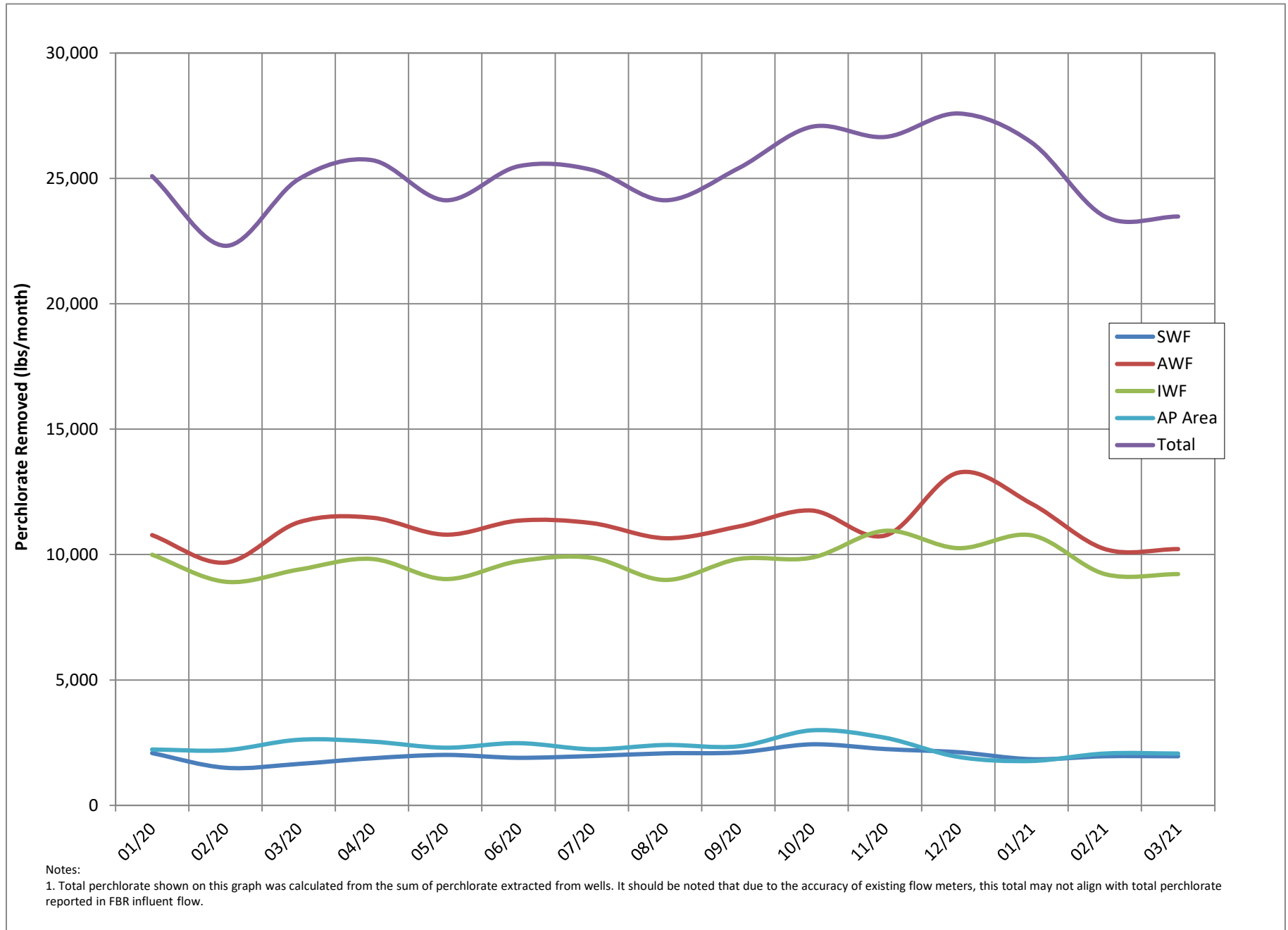


Figure 1 - GW-11 Pond Volume Through 03/31/2021



Notes:  
 1. Measurements switched from manual to transducer on 06/20/17. The pond volume fluctuations between 05/30 and 06/20 reflect the decreasing manual measurement accuracy at lower pond levels.  
 2. A transducer installed along the eastern berm provides water pressure measurements that are correlated to elevations for calculation of water depths. Results from a December 2018 bathymetric survey of the pond will be used to identify adjustment to the procedure, if necessary.

Figure 2 - Historical Perchlorate Mass Removed From Environment



# Attachment A

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*NPDES Tracking Sheet (Prepared by Ramboll)*

Treated Effluent at Outfall 001																					
Continuous		Daily Samples, composited weekly				Weekly Grab Samples										Weekly, collected separately			Quarterly		
Flow Rate		Perchlorate				pH	Hexavalent Chromium	Total Chromium	Manganese	Total Iron	Total Inorganic Nitrogen (TIN)	Total Suspended Solids (TSS)		Total Ammonia as N		Total Phosphorus as P		BOD <sub>5</sub> (inhibited)			Total Dissolved Solids (TDS)
30-Day Avg. (MGD)	Daily Maximum (MGD)	30-Day Avg. (µg/L)	30-Day Avg. (lbs/day)			Daily Min. (S.U.)	Daily Max. (S.U.)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (µg/L)	Daily Max. (mg/L)	Daily Average (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	Daily Max. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (lbs/day)	Daily Max. (mg/L)	
2.52	2.88	18	0.38			6.5	9.0	10	100	5,000	10,000	20	135	2,839	20*	10*	25	40	525	8,000	
January 2021	1.80	1.90	0.6	0.009		6.6	6.8	ND (<0.25)	12	100	1,300	1.0	19	290	4	7	ND (<5.0)	ND (<5.0)	38		
February 2021	1.76	1.85	0.55	0.008		6.5	6.7	ND (<0.25)	5.3	100	1,200	1.0	21	320	6	6.1	11	38	170	3,900	
March 2021 (month to date)	1.76	1.84	0.16	0.0023		6.5	6.9	ND (<0.25)	2.2	110	1,100	1.4	15	220	2.6	6.6	5	15	76		
April 2021 (month to date)	1.80	1.81	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Daily Grab Sample Dates	Composite Sample Date	µg/L	lbs/day	Sample Date	S.U.	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	Sample Date	mg/L	lbs/day	Sample Date	mg/L			
1/3 - 1/9	1/9/2021	ND (<0.31)	0.16	0.0023	1/4/2021	6.6	ND (<0.25)	2.2	100	650	0.16	24	367	--	0.064	1.0	--	0.38	5.8	1/6/2021	ND (<5.0)	2.5	38			
1/10 - 1/16	1/16/2021	ND (<0.31)	0.16	0.0023	1/12/2021	6.7	ND (<0.25)	2.9	82	720	0.32	21	319	--	0.14	2.1	--	0.36	5.5	1/13/2021	ND (<5.0)	2.5	38			
1/17 - 1/23	1/23/2021	1.8	1.8	0.027	1/18/2021	6.8	ND (<0.25)	3.6	83	1,300	1.0	18	278	--	0.87	13	--	0.68	10	1/20/2021	ND (<5.0)	2.5	38			
1/24 - 1/30	1/30/2021	ND (<0.31)	0.16	0.0023	1/25/2021	6.6	ND (<0.25)	1.2	64	940	0.21	14	215	--	0.095	1.5	--	0.39	6.0	1/27/2021	ND (<5.0)	2.5	39			
1/31 - 2/6	2/6/2021	ND (<0.31)	0.16	0.0023	2/1/2021	6.7	ND (<0.25)	5.3	49	880	1.1	13	198	--	0.99	15	--	0.43	6.6	2/3/2021	ND (<5.0)	2.5	38	2/2/2021	3,900	
2/7 - 2/13	2/13/2021	0.92	0.92	0.014	2/8/2021	6.6	ND (<0.25)	4.4	57	1,100	1.0	28	429	--	0.25	3.8	--	0.45	6.9	2/10/2021	ND (<5.0)	2.5	36			
2/14 - 2/20	2/20/2021	ND (<0.31)	0.16	0.0023	2/15/2021	6.5	ND (<0.25)	2.9	76	930	0.16	22	330	--	0.16	2.4	--	0.38	5.7	2/17/2021	38	569				
2/21 - 2/27	2/27/2021	0.96	0.96	0.0140	2/22/2021	6.7	ND (<0.25)	ND (<0.85)	100	1,200	0.19	21	316	--	0.16	2.4	--	0.34	5.1	2/24/2021	ND (<5.0)	2.5	37			
2/28 - 3/6	3/6/2021	ND (<0.31)	0.16	0.0022	3/2/2021	6.6	ND (<0.25)	1.1	96	570	1.4	11	155	--	0.30	4.2	--	0.34	4.8	3/4/2021	ND (<5.0)	2.5	38			
2/7 - 3/13	3/13/2021	ND (<0.31)	0.16	0.0023	3/8/2021	6.6	ND (<0.25)	2.2	110	760	0.21	20	286	--	0.21	3.0	--	0.37	5.3	3/10/2021	ND (<5.0)	2.5	37			
3/14 - 3/20	3/20/2021	ND (<0.31)	0.16	0.0023	3/15/2021	6.5	ND (<0.25)	ND (<0.85)	78	700	0.46	21	316	--	0.22	3.3	--	0.63	9.5	3/17/2021	ND (<5.0)	2.5	37			
3/21 - 3/27	3/27/2021	ND (<0.31)	0.16	0.0023	3/22/2021	6.9	ND (<0.25)	ND (<0.85)	53	1,100	ND (<0.050)	18	271	ND (<0.039)	0.020	0.29	--	0.55	8.3	3/24/2021	15	228				
3/28 - 4/1	4/1/2021	ND (<0.31)	0.16	0.0023	3/29/2021	6.6	ND (<0.25)	ND (<0.85)	61	840	0.25	ND (<10)	5	74	--	0.13	1.9	--	0.34	5.0	3/31/2021	ND (<5.0)	2.5	37		
					4/5/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/7/2021	NA	NA				

Note: All analytical responsibilities are performed by TestAmerica Laboratories, Inc. (TestAmerica) in Irvine, California, unless otherwise indicated.

\* An additional chromium sample was collected this week as part of the Quarterly sampling event.

NA = Not Available To Date

ND = Not Detected above laboratory reporting limit; concentration in adjacent cell to right is one-half the reporting limit (per Permit condition)

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

-- = Analyte detected; see column adjacent to right

\* Total phosphorus discharge limitation of 10 lbs/day applies between March 1 and October 31; Ammonia discharge limitation of 20 lbs/day applies between April 1 and September 30; no limits apply the rest of the year.

Last Updated: April 9, 2021

# Attachment B

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*Equipment Tracking Form*

Sub-System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
<b>Main Plant Equipment</b>						
<b>1 Seep Wells and Lift Station 1</b>						
1.01		Seep Well Field, 9 wells	Running			
1.02		Lift Station 1 Lift Pump A	Running			
1.03		Lift Station 1 Lift Pump B	Standby			
1.04		Area in and around Lift Station 1	Running			
<b>2 Athens Road Wells and Lift Station 3</b>						
2.01		Athens Road Well Field, 9 wells	Running			
2.02		Lift Station 3 Lift Pump A	Standby			
2.03		Lift Station 3 Lift Pump B	Running			
2.04		Area in and around Lift Station 3	Running			
<b>3 Lift Station 2 and Transmission Pipelines</b>						
3.01		Influent Pipeline	In operation			
3.02		Effluent Pipeline	Running			
3.03		Lift Station 2 Lift Pump A	Running			
3.04		Lift Station 2 Lift Pump B	Standby			
3.05		Area in and around Lift Station 2	Running			
<b>4 Interceptor Wells and Cr Treatment Plant</b>						
4.01		IWF Well Field, 30 wells	Running		2	Replaced the flowmeter on E2-4 and on E1-1
4.02		Ferrous Sulfate Feed System	Running			
4.03		Polymer Feed System	Running			
4.04		Clarifier	In operation			
4.05		Filter Press	Running			
4.06		GWTP Effluent Tank	In operation		1	Bypassed the GWTP to install new piping along with a new P-1001 mag drive pump. The discharge line to the EQ was also flushed out.
4.07		Interceptor Booster Pump A	Running			
4.08		Interceptor Booster Pump B	Standby		1	Powered down the GWTP to replace the 5 hp motor, the wiring to the motor, and the VFD. Power was also taken down to replace the blown transformer and reconnect in the main power switch.
4.09		Area In And Around GWTP	Running			
<b>5 Equalization Area and GW-11 Pond</b>						
5.01	PID10A	Pond GW-11	In operation			
5.02	PID10A	Pond Water Pump - P101A	Running			
5.03	PID10A	Pond Water Pump - P101B	Standby			

Status Codes

Running - Unit is in operation  
 Standby - Spare or duplicate, not currently in operation  
 Maintenance - Out of service for maintenance  
 Off - Not currently needed for use, but can be placed in service

Criticality Codes

1 = Critical - Cannot continue with operation until repairs made  
 2 = Important - Can still operate safely and in compliance with permits, but risks are increased  
 3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place  
 4 = Low - Minor repairs that in no way alter the performance of the plant

Sub-System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
5.04	PID10A	Equalization Tanks	In operation			
5.05	PID10A	Area in and Around EQ	In operation			
5.06	PID10A	Raw Water Feed Pump - P102A				
5.07	PID10A	Raw Water Feed Pump - P102B				
5.08	PID10A	F-101 Filters	Running			
5.09	PID10B	Carbon Absorber - LGAC 201A	Running			
5.10	PID10B	Carbon Absorber - LGAC 201B	Running			
5.11	PID10B	Carbon Absorber - LGAC 201C	Running			
<b>6</b>		<b>First Stage FBRs A, 1 &amp; 2</b>				
6.01	PID14	FBR A			4	The bed height control pump was rebuilt.
6.02	PID14	Separator Tank - 1401				
6.03	PID14	Media Return Pump - P 1401				
6.04	PID14	P1401A				
6.05	PID01A	P1401B				
6.06	PID01A	FBR 1	Running			
6.07	PID02A	FBR 2	Running			
6.08	PID01A	First Stage Separator Tank - T2011	Running			
6.09	PID01A	Media Return Pump - P2011	Running		3	Replaced the belt on the pump.
6.10	PID01A	First Stage FBR Pump - P1011	Standby			
6.11	PID01A	First Stage FBR Pump - P1012				
6.12	PID01A	First Stage FRB Pump - P101A	Running			
6.13	PID07A	FBR A pH Feed Pump - P71A	Off			
6.14	PID07A	FBR 1 pH Feed Pump - P711	Off			
6.15	PID07A	FBR 2 pH Feed Pump - P712	Off			
6.16	PID07A	FBR A Nutrient (Urea) Feed Pump - P72A	Off			
6.17	PID07A	FBR 1 Nutrient (Urea) Feed Pump - P721	Off			
6.18	PID07A	FBR 2 Nutrient (Urea) Feed Pump - P722	Off			
6.19	PID15	FBR A Nutrient (Phos Acid) Feed Pump - P1520A	Running		2	The old pump failed. A temporary feed pump was put in place until the new pump arrives.
6.20	PID15	FBR 1 Nutrient (Phos Acid) Feed Pump - P1521	Running			
6.21	PID15	FBR 2 Nutrient (Phos Acid) Feed Pump - P1522	Running			
6.22	PID07B	FBR A Electron Donor Assembly Pump - P73A	Running			
6.23	PID07B	FBR 1 Electron Donor Assembly Pump - P731	Running			
6.24	PID07B	FBR 2 Electron Donor Assembly Pump - P732	Running			
<b>7</b>		<b>First Stage FBRs 3 &amp; 4</b>				
7.01	PID01B	FBR 3	Running			

Status Codes

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Criticality Codes

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Sub-System	P&ID	Description	Status <sup>1</sup>	Checked	Criticality <sup>2</sup>	Notes
7.02	PID01B	FBR 4	Running			
7.03	PID02B	First Stage Separator Tank - T2012	Running			
7.04	PID01B	Media Return Pump - P2012	Running			
7.05	PID01B	First Stage FBR Pump - P1013	Running			
7.06	PID01B	First Stage FRB Pump - P1014	Running			
7.07	PID01B	First Stage FBR Pump - P102A	Running			
7.08	PID07A	FBR 3 pH Feed Pump - P713	Running			
7.09	PID07A	FBR 4 pH Feed Pump - P714	Running			
7.10	PID07A	FBR 3 Nutrient (Urea) Feed Pump - P723				
7.11	PID07A	FBR 4 Nutrient (Urea) Feed Pump - P 724	Off			
7.12	PID15	FBR 3 Nutrient (Phos Acid) Feed Pump - P1523	Running			
7.13	PID15	FBR 4 Nutrient (Phos Acid) Feed Pump - P1524	Running			
7.14	PID07B	FBR 3 Electron Donor Assembly Pump - P733	Running			
7.15	PID07B	FBR 4 Electron Donor Assembly Pump - P734	Running			
<b>8</b>		<b>Second Stage FBRs 5 &amp; 6</b>				
8.01	PID03A	FBR 5	Running			
8.02	PID03A	FBR 6	Running		2	Replaced the actuator and positioner on the feed valve.
8.03	PID03C	Second Stage Separator Tank - T3011	Running			
8.04	PID03A	Media Return Pump - P3011	Running			
8.05	PID03A	Second Stage FBR Pump - P3015	Running			
8.06	PID03A	Second Stage FBR Pump - P3016	Standby			
8.07	PID03A	Second Stage FBR Pump - P301A	Running			
8.08	PID07A	FBR 5 pH Feed Pump - P715	Off			
8.09	PID07A	FBR 6 pH Feed Pump - P716	Off			
8.1	PID07A	FBR 5 Nutrient (Urea) Feed Pump - P725	Off			
8.11	PID07A	FBR 6 Nutrient (Urea) Feed Pump - P726	Off			
8.12	PID07B	FBR 5 Electron Donor Assembly Pump - P735	Running			
8.13	PID07B	FBR 6 Electron Donor Assembly Pump - P736	Running			
<b>9</b>		<b>Second Stage FBRs 7 &amp; 8</b>				
9.01	PID03B	FBR 7	Running			
9.02	PID03B	FBR 8	Running			
9.03	PID03D	Second Stage Separator Tank - T3012	Running			
9.04	PID03B	Media Return Pump - P3012	Running		3	Replaced the belt on the pump
9.05	PID03B	Second Stage FBR Pump - P3017	Running			
9.06	PID03B	Second Stage FBR Pump - P3018	Running			
9.07	PID03B	Second Stage FBR Pump - P302A	Running			

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9.08	PID07A	FBR 7 pH Feed Pump - P717	Off			
9.09	PID07A	FBR 8 pH Feed Pump - P718	Off			
9.10	PID07A	FBR 7 Nutrient (Urea) Feed Pump - P727	Off			
9.11	PID07A	FBR 8 Nutrient (Urea) Feed Pump - P728	Off			
9.12	PID07B	FBR 7 Electron Donor Assembly Pump - P737	Running			
9.13	PID07B	FBR 8 Electron Donor Assembly Pump - P738	Running			
<b>10</b>		<b>Aeration and DAF System</b>				
10.01	PID04	Aeration Tank	In operation			
10.02	PID04	Aeration Blower - B401	Running			
10.03	PID04	Bio filter	In operation			
10.04	PID04	Nutrient Solution	Running			
10.05	PID04	Bio filter Sump				
10.06	PID04	Nutrient Pump - P401	Running			
10.07	PID04	Bio filter Sump Pump - P402A	Standby			
10.09	PID04	Bio filter Blower	Running			
10.10	PID05	DAF Pressure Tanks	In operation			
10.11	PID05	DAF Vessel - D501	Running		2	Took the vessel offline to clean and inspect.
10.12	PID05	DAF Pressure Pump - P501	Running			
10.13	PID05	DAF Float Pump - P502	Running			
10.14	PID05	DAF Vessel - D551	Running			
10.15	PID05	DAF Pressure Pump - P551	Running			
10.16	PID05	DAF Float Pump - P552	Running			
10.17	PID05	Screw Conveyer Drive	Standby			
10.18	PID05	Skimmer Drive	Running			
<b>11</b>		<b>Pumping System (Old Effluent)</b>				
11.01	PID06	Effluent Tank 601	In operation			
11.02	PID06	Effluent Pump - P601	Running			
11.03	PID06	Effluent Pump - P602	Standby			
<b>12</b>		<b>Sand Filter System</b>				
12.01	PID17	Sand Filter				
12.02	PID17	Filter Reject Tank	In operation		3	Removed the solids from the reject tank
12.03	PID17	Filter Reject Pump - P1701A	Standby			
12.04	PID17	Filter Reject Pump - P1701B	Running			
<b>13</b>		<b>Effluent Tank and Pumping</b>				
13.01	PID10C	UV Effluent Tank	Running			
13.02	PID10C	Effluent Booster Pump - P1302A	Running		1	Replaced the discharge check valve

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13.03	PID10C	Effluent Booster Pump - P1302B	Standby			
13.04	PID10C	Area Around Effluent and North D-1	Running			
<b>14</b>		<b>Solids Collection and Pressing System</b>				
14.01	PID16	Sludge Storage Tank	In operation			
14.02	PID16	Solids Storage Effluent Pump - P1601	Running			
14.03	PID16	Solids Cond. Tank	In operation			
14.04	PID09	Sludge Mixer	Running			
14.05	PID09	Filter Press Pump - P901	Running			
14.06	PID09	Filter Press Pump - P902				
14.07	PID09	West Press	Standby			
14.08	PID09	East Press	Running			
14.09	PID09	Filtrate Tank	In operation			
14.10	PID09	Filtrate Tank Effluent (recycle) Pump - P903	Running		4	Replaced a damaged nipple from the discharge flush line of the pump.
		<b>Chemical Systems</b>				
<b>15</b>		<b>Electron Donor System</b>				
15.01	PID07B	Electron Donor Tank	In operation			
15.02	PID07B	Booster Pump P739A	Running			
15.03	PID07B	Booster Pump P739B	Standby			
17	PID07C	Micro Nutrient System	In operation			
18	PID07C	Hydrogen Peroxide System	In operation			
19	PID07C	De-Foam System	In operation			
20	PID15	Nutrient (Phosphoric Acid) System (Tank only - pumps included in FBRs)	In operation			
21	PID07A	Nutrient (Urea) System (Tank only - pumps included in FBRs)	In operation			
22	PID07A	pH System (Tank and effluent pH feed pump only - other pumps included in FBRs)	In operation			
23	PID07C	Ferric Chloride	In operation			
24	PID07B	Polymer Systems - DAF	In operation			
25	PID09	Polymer System - Solids Dewatering (2 tanks, 2 centrifugal pumps, mixer, volumetric feeder)	In operation			
		<b>Utility Systems</b>				
<b>26</b>		<b>Compressed Air System</b>				
26.01	PID08	West Compressor	Running			

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26.02	PID08	East Compressor	Running			
26.03	PID08	O2 Compressor	Running		1	The motor on the compressor failed. Air Center is performing the work to replace the motor.
26.04	PID08	Compressed Air Receiver Tank	In operation			
26.05	PID08	Air Dryer	Running			
26.06	PID08	Oil Removal Filter	In operation			
26.07	PID08	Particulate Filter	In operation			
27	PID16	Oxygen System	In operation			
28		GWETS Plant Controls/ Siemens Controls	In operation			
29		Well Control System/ Allen Bradley Controls	In operation			
30		MCC FBR Pad	In operation			
31		MCC in D-1	In operation			
32		MCC in EQ area	In operation			
<b>Miscellaneous Systems</b>						
33		Operations Office/Network	In operation			
34		Laboratory Analyzers	In operation			
35		Security Systems	In operation			
<b>Shelf Spares</b>						
		Media Return Pump Rebuild Kit	In stock			
		pH Feed Pump	In stock			
		Nutrient Feed Pump	In stock			
		Electron Donor Feed Pump	In stock			
		Phosphoric Acid Feed Pump	In stock			
		Interceptor Well Pumps (4 each)	In stock			
		Seep Well Pump (1 each, same as Athens so total of 2)	In stock			
		Athens Road Well Pump (1 each, same as Seep so total of 2)	In stock			

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