
To: Nevada Division of Environmental Protection
Nevada Environmental Response Trust

Cc: Nevada Environmental Response Trust Stakeholders

From: Michael Del Vecchio, Director Engineering and Project Management

Date: February 20, 2024

Subject: NERT – GWETS Operation Monthly Report – January 2024

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 January 2024.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in January 2024. Flow from PC-115, PC-119, PC-120, PC-121, and PC-133 were routed to the IX system, bypassing all flow meters associated with the FBR plant for the month of January. The flow rate to the IX system averaged approximately 284 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1002 gpm. At the end of the month, the filled GW-11 Pond volume was at 41.0 million gallons (MG), which would allow 14.91 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 decreased since the end of December 2023; 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 2.3 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 45 mg/L for the month, with a maximum concentration of 47 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of December 2023 averaged 50 mg/L, with a maximum concentration of 57 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 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 January.

2. Biological Plant

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

Diversions Events / Well Shutdowns

- Influent diversion occurred on January 8, 2024 from 4:39pm to 5:06pm due to a malfunctioning effluent flow valve at the CTS. Troubleshooting was conducted, the valve was repaired, and the plant was brought back online. Approximately 25,000 gallons of water were added to the GW-11 Pond.
- Effluent diversion occurred on January 10, 2024 from 9:21am to 10:18am as a precautionary measure due to poor effluent turbidity. Adjustments were made to the process and the effluent was returned to the outfall. Approximately 51,000 gallons of water were added to the GW-11 pond.
- Effluent diversion occurred on January 10, 2024 from 10:30pm to January 11, 2024 at 12:30am as a precautionary measure due to elevated levels of perchlorate in the FBRs. Adjustments were made to the process and the effluent was returned to the outfall. Approximately 114,000 gallons of water were added to the GW-11 pond.
- Effluent diversion occurred on January 11, 2024 from 11:51am to 12:18pm as a precautionary measure due to elevated levels of perchlorate in the FBRs. Adjustments were made to the process and the effluent was returned to the outfall. Approximately 27,000 gallons of water were added to the GW-11 pond.
- Influent diversion occurred on January 16, 2024 from 12:20pm to 3:39pm due to scheduled maintenance on the CTS I/O cabinet. Maintenance was conducted and the plant was brought back online. Approximately 190,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on January 17, 2024 from 3:40pm to 8:49pm due to an electrical malfunction at the FBR MCC as a result of a short occurring at the CTS. Maintenance was conducted and the plant was brought back online. Approximately 293,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on January 24, 2024 from 9:49am to 10:35am due to a follow up scheduled maintenance on the CTS I/O cabinet. Maintenance was conducted and the plant was brought back online. Approximately 44,000 gallons of water were added to the GW-11 Pond.

3. IX Treatment Plant

During the month of February 2022, flooding conditions were observed adjacent to the SWF as a result of the City of Henderson's (CoH's) use of inactive Birding Ponds 10 through 13. The discharge to these ponds resulted in an increase in groundwater elevation adjacent to the SWF by approximately 5 feet. This increase in groundwater elevation caused flooding adjacent to the SWF extraction wells and within four extraction well vaults. Flooding conditions were observed again in September 2023 as a result of the CoH's use of inactive Birding Ponds 10 through 13 again in August and September 2023. ETI temporarily increased the pumping rate of extraction wells PC-120 and PC-121 to reduce flooding with the well vaults. Additionally, the concentration of perchlorate in shallow groundwater increased again resulting in increased loading to the IX treatment plant during September 2023. The CoH ceased discharging water to Birding Ponds 10 through 13 in early October 2023. Both the groundwater elevation adjacent to the SWF and the perchlorate concentrations in groundwater are elevated and are expected to remain elevated for an extended period as result of CoH's August/September 2023 use of the inactive Birding Ponds assuming no additional significant usage by the CoH occurs.

4. Treatment System Extension (TSE)

During January 2024, operations at the TSE plant were idled resulting from the TIMET infiltration galleries being unable to accept treated water. Throughout the month of January representatives of NERT and TIMET participated in multiple discussions regarding operations of the TSE and TIMET facilities. Timeline for restart of the system pending discussions between NERT and TIMET.

5. Effluent Filtration System (EFS)

During January 2024, the EFS operated normally and produced approximately 415,000 gallons of filtered GWETS effluent which supported the utility water requirements of GWETS operations.

6. Chromium Treatment Subsystem (CTS)

During January 2024, the CTS operated normally and treated approximately 1,580,000 gallons of groundwater, with approximately 63,000 gallons extracted from the Unit 4 Source Area In-Situ Bioremediation Treatability Study.

7. Spills

There were no reportable spills in the month of January.

8. Maintenance

- Major maintenance performed by ETI in the reporting month included:
 - I. Installed a new CTS effluent pump.
 - II. Replaced the discharge valves and the check valve for P-210.

- III. Installed a new flowmeter on E2-1 and new suction valves.
 - IV. Replaced the filters and regulators on the FBR-3 and FBR-4 pump skid.
 - V. Changed out the caustic feed pumps.
 - VI. Pulled and changed the discharge fittings of the sump pump P-1101.
 - VII. Replaced the check valve on the North DAF sludge pump.
 - VIII. Installed a new solenoid for the South DAF pressure tank.
 - IX. Replaced the motor starter for the east compressor.
 - X. Cleared the filtrate lines and replaced the air supply fittings for airlifts #2 and #4.
- Preventative maintenance performed by ETI in the reporting month included:
 - I. Flushed and calibrated the ORP probes.
 - II. Calibrated and verified the level control valves for the separators.
 - III. Verified the flow on the chemical feed pumps.
 - IV. Inspected the combo valves.
 - V. Changed the packing on the Lift Station 1 turbine pumps.
 - VI. Greased all rotating equipment as needed.
 - VII. Cleaned the air ends on the filter press pumps.
 - VIII. Verified correct operation of the valve that controls the level of T-601.
 - IX. Verified function of the new feed valves on the front stage.

Attachment B contains a summary of all maintenance activities completed during the reporting period.

Facility Projects

1. Facility Repair/Replacement Items – Envirogen and the Trust have finalized a list of facility items to be addressed in connection with Amendment 8 to the O&M Agreement. All work with the exception of the replacement of the DAF have been completed. Specific details on in-progress items are provided below:
 - I. (WA 23-03) Dissolved Air Flootation (DAF) Vessel replacement
 1. The replacement DAF was delivered in December 2023 and will be installed in March 2024.
 - II. Concrete Repair at various locations on FBR pad
 1. Scheduling work with selected contractor. Work is anticipated to be completed in February 2024.
2. Improved Biological Treatment Plant Efficiency – Consistent with Attachment D to the December 2021 GWETS Operation Monthly Report, Envirogen plans to take five FBRs out of service and maintain them in working condition should they be needed in the future. This action will reduce the use of electricity and water and still maintain sufficient treatment capacity to address current groundwater extracted from the IWF, AWF, and the SWF. FBR A was placed into Offline mode on April 13, 2022. The electrical and mechanical components of the pump skid were inspected and removed when applicable. The removal of the sand media is complete. Final inspection of all internal components is also complete. The remaining FBRs scheduled to be taken out of service will be addressed in the 2nd quarter of 2024.

Tables

Operational Metrics

Nevada Environmental Response Trust Groundwater Extraction and Treatment System Monthly Stakeholder Metrics				
Location ID	Average Flow Rate (gpm) ⁴	Perchlorate (mg/L) ⁵	Chromium (TR) (mg/L) ⁵	Chromium(VI) (mg/L) ⁵
SWF Total Extraction ¹	744	5.2	0.00021	0.0014
AWF Total Extraction ¹	411	50	0.10	0.10
IWF Total Extraction ¹	45	376	5.7	5.3
AP Area Total Extraction ¹	6.9	740	0.32	0.20
Chromium Treatment Subsystem Effluent ²	51	387	0.33	0.00027
GW-11 Influent ¹	0.16	28	0.054	0.054
FBR Influent ²	1,002	45	0.11	0.036
Treatment System Extension Influent ^{2,3}	0.0	0.0	0.0	0.0

Notes:

- 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: TSE offline from 01/01 to 01/31.
- 4: Sum of daily average flow for individual wells.
- 5: All concentrations reported are monthly flow weighted averages.

Nevada Environmental Response Trust Groundwater Extraction and Treatment System Monthly Stakeholder Metrics			
Location ID	Perchlorate (lbs/month) ¹	Chromium (TR) (lbs/month) ¹	Chromium (VI) (lbs/month) ¹
SWF Total Extraction	1,217	0.048	0.32
AWF Total Extraction	7,723	15	15
IWF Total Extraction	6,329	95	89
AP Area Total Extraction	1,916	0.84	0.52
Chromium Treatment Subsystem Effluent	7,315	6.3	0.0052
GW-11 Influent	1.7	0.0033	0.0033
FBR Influent ¹	16,876	42	13
Treatment System Extension Influent ^{1,2}	0.0	0.0	0.0

Notes:

TR = Total Recoverable.

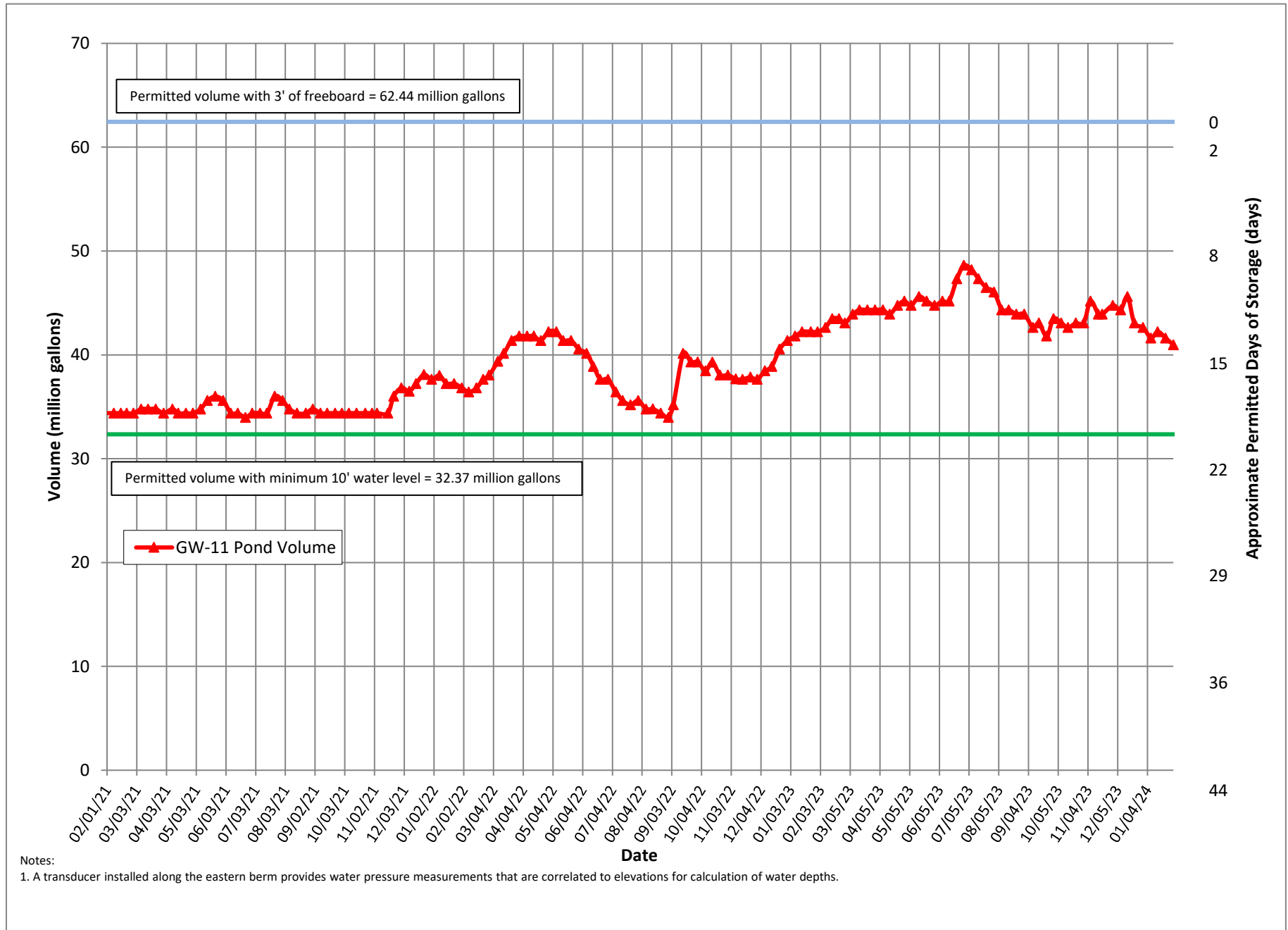
1: Total mass extracted is calculated from flow weighted average concentration and average flow (see Table 1).

2: TSE offline from 01/01 to 01/31.

Figures

Operational Metrics

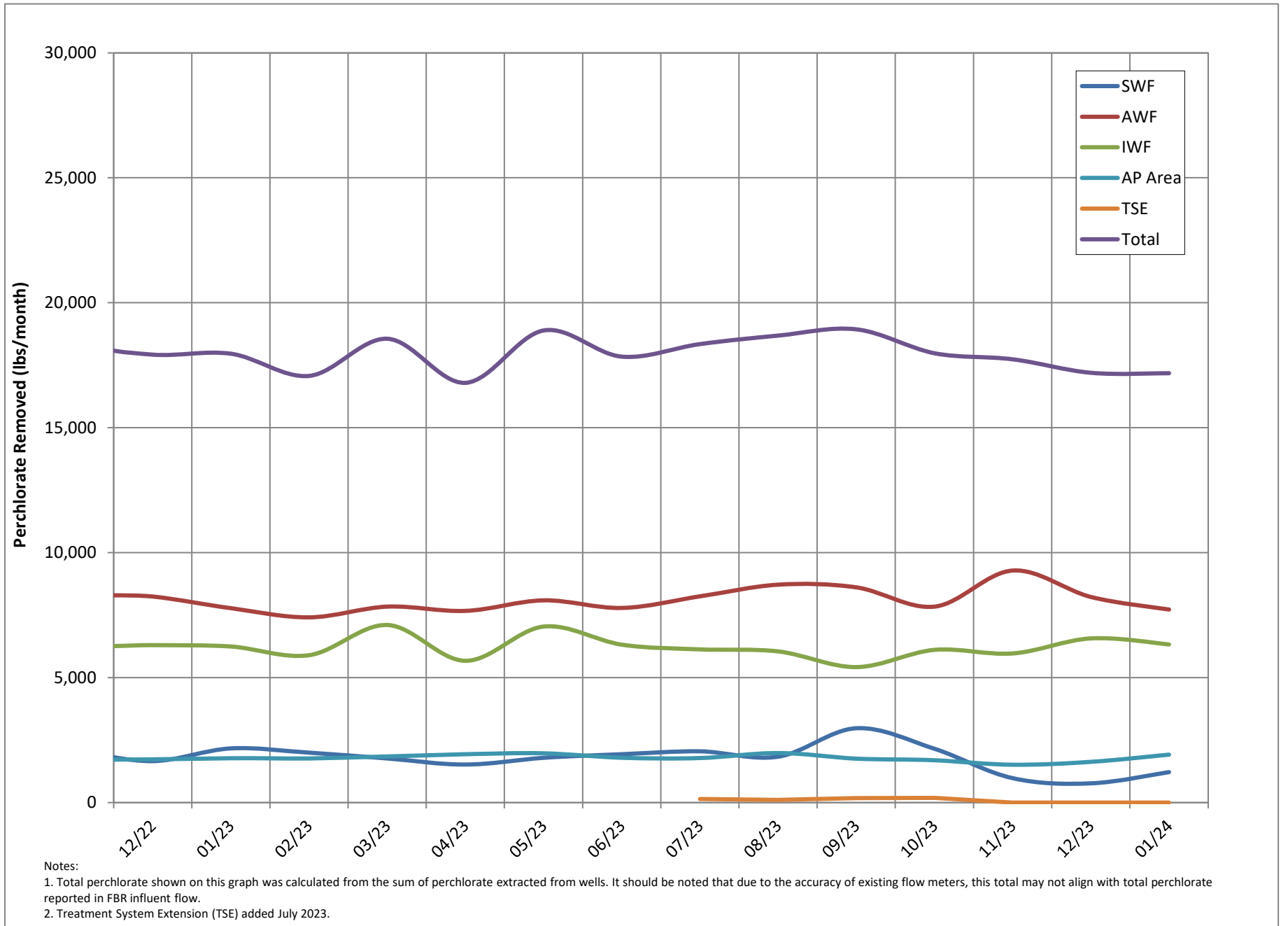
Figure 1 - GW-11 Pond Volume Through 01/31/2024



Notes:

1. A transducer installed along the eastern berm provides water pressure measurements that are correlated to elevations for calculation of water depths.

Figure 2 - Historical Perchlorate Mass Removed From Environment



Attachment A

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 ₅ (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. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (lbs/day)	Daily Max. (mg/L)	8,000
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		NA
January 2024 (month to date)																							
1.76	1.85	ND (<1.6)	0.023			6.98	7.21	ND (<0.150)	12	320	1,200	1.8	20	280	1.8	5.3			6.3	21	83		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	Sample Date	mg/L	lbs/day	Sample Date	mg/L			
12/31 - 1/6	1/6/2024	ND (<1.6)	0.8	0.012	1/3/2024	6.98	ND (<0.150)	12	260	830	0.89	--	16	233	--	0.12	1.7	--	0.44	6.4	1/3/2024	ND (<5.0)	2.5	36
1/7 - 1/13	1/13/2024	ND (<1.6)	0.8	0.012	1/10/2024	7.18	ND (<0.150)	11	310	590	0.72	--	19	268	--	0.13	1.8	--	0.48	6.8	1/10/2024	ND (<5.0)	2.5	35
1/14 - 1/20	1/20/2024	ND (<1.6)	1.8	0.027	1/17/2024	7.01	ND (<0.150)	12	320	1,200	0.80	--	28	358	--	0.071	0.9	--	0.47	6.0	1/17/2024	21 ¹	21	272
1/21 - 1/27	1/27/2024	ND (<1.6)	2.8	0.042	1/24/2024	7.21	ND (<0.150)	5.0	280	360	1.8	--	17	251	--	0.27	4.0	--	0.29	4.3	1/24/2024	ND (<5.0)	2.5	37
					1/31/2024	7.12	ND (<0.150)	8.3	270	770	0.63	--	20	296	ND(<0.039)	0.0195	0.3	--	0.19	2.8	1/31/2024	ND (<5.0)	2.5	37

Note: Analytical responsibilities are performed by Eurofins Environment Testing (Eurofins) in Phoenix, Arizona, and hexavalent chromium is analyzed by Pace Analytical (Pace) in Las Vegas, Nevada, unless otherwise indicated.
 * Additional samples were collected this week.
 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)
 NS = Not Sampled or Not Analyzed
 -- = 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.
¹ Average of 8.6 mg/L and 34 mg/L; rerun was analyzed past hold time.
 Last Updated: February 9, 2024

Attachment B

Equipment Tracking Form

Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
		Main Plant Equipment				
1		Seep Wells and Lift Station 1				
1.01		Seep Well Field, 9 wells	Running		2	Replaced the 5 hp motor on PC-115.
1.02		Lift Station 1 Lift Pump A	Running		4	Replaced the packing on the turbine.
1.03		Lift Station 1 Lift Pump B	Standby			
1.04		Area in and around Lift Station 1	Running		4	Reset the faults in the MCC cabinets and blew out the dust from the cabinets.
2		Athens Road Wells and Lift Station 3				
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		4	Reset the faults in the MCC cabinets and blew out the dust from the cabinets.
3		Lift Station 2 and Transmission Pipelines				
3.01		Influent Pipeline	In operation		3	Checked for leaks on the air release valves.
3.02		Effluent Pipeline	Running		3	Pulled and inspected the combo valves.
3.03		Lift Station 2 Lift Pump A	Running		4	Greased the motor.
3.04		Lift Station 2 Lift Pump B	Standby			
3.05		Area in and around Lift Station 2	Running		3	Swapped out the HMI. The new system needs further programming.
4		Interceptor Wells and Cr Treatment Plant				
4.01		IWF Well Field, 30 wells	Running		3	Installed new flowmeter on E2-1 and replaced the valves on the piping. Cleared debris from the flowmeter for E2-2.
4.02		Ferrous Sulfate Feed System	Running		2	The tubing was re-routed and the fittings were replaced.
4.03		Polymer Feed System	Running		3	Installed a new style pump.
4.04		Clarifier	In operation			
4.05		Filter Press	Running			
4.06		GWTP Effluent Tank	In operation			
4.07		Interceptor Booster Pump A	Running			
4.08		Interceptor Booster Pump B	Standby			
4.09		Area In And Around GWTP	Running		2	Changed out the eff pump and changed out the valve and the check valve.
5		Equalization Area and GW-11 Pond				
5.01	PID10A	Pond GW-11	In operation			
5.02	PID10A	Pond Water Pump - P101A	Running			
5.03	PID10A	Pond Water Pump - P101B	Standby			
5.04	PID10A	Equalization Tanks	In operation			

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Criticality Codes

1= Critical - Cannot continue with operation until repairs made
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 3 = Moderate - Work needs to be performed, but plant can still operate with redundancy that is in place
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Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
5.05	PID10A	Area in and Around EQ	In operation		3	Pulled and inspected the diversion actuator.
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				
5.10	PID10B	Carbon Absorber - LGAC 201B				
5.11	PID10B	Carbon Absorber - LGAC 201C				
6		First Stage FBRs A, 1 & 2				
6.01	PID14	FBR A				EQUIPMENT OFFLINE
6.02	PID14	Separator Tank - 1401				EQUIPMENT OFFLINE
6.03	PID14	Media Return Pump - P 1401				EQUIPMENT OFFLINE
6.04	PID14	P1401A				EQUIPMENT OFFLINE
6.05	PID01A	P1401B				EQUIPMENT OFFLINE
6.06	PID01A	FBR 1	Running			
6.07	PID02A	FBR 2	Running		3	Calibrated the pressure switch.
6.08	PID01A	First Stage Separator Tank - T2011	Running			
6.09	PID01A	Media Return Pump - P2011	Running			
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			Equipment offline
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			
7		First Stage FBRs 3 & 4				
7.01	PID01B	FBR 3	Running		1	Performed PM's on the pumps, valves, and other equipment incorporated with the pump skid.
7.02	PID01B	FBR 4	Running		1	Performed PM's on the pumps, valves, and other equipment incorporated with the pump skid.

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Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
7.03	PID02B	First Stage Separator Tank - T2012	Running			
7.04	PID01B	Media Return Pump - P2012	Running		3	Flushed the line forward to keep the pump 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		3	Inspected the check valve at the injection point.
8		Second Stage FBRs 5 & 6				
8.01	PID03A	FBR 5	Running			
8.02	PID03A	FBR 6	Running			
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			
9		Second Stage FBRs 7 & 8				
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			
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			
9.08	PID07A	FBR 7 pH Feed Pump - P717	Off			
9.09	PID07A	FBR 8 pH Feed Pump - P718	Off			

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Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
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			
10		Aeration and DAF System				
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			
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		3	Replaced the check flap on the pump.
10.17	PID05	Screw Conveyer Drive	Standby			
10.18	PID05	Skimmer Drive	Running			
11		Pumping System (Old Effluent)				
11.01	PID06	Effluent Tank 601	In operation			
11.02	PID06	Effluent Pump - P601	Running			
11.03	PID06	Effluent Pump - P602				
12		Sand Filter System				
12.01	PID17	Sand Filter			3	Unplugged airlift #2 and #4 along with the filtrate line.
12.02	PID17	Filter Reject Tank	In operation			
12.03	PID17	Filter Reject Pump - P1701A	Standby			
12.04	PID17	Filter Reject Pump - P1701B	Running			
13		Effluent Tank and Pumping				
13.01	PID10C	UV Effluent Tank	Running			
13.02	PID10C	Effluent Booster Pump - P1302A	Running			
13.03	PID10C	Effluent Booster Pump - P1302B	Standby			
13.04	PID10C	Area Around Effluent and North D-1	Running			
14		Solids Collection and Pressing System				

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Criticality Codes

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Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
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		4	Set the plate shifters to rise. Waiting on parts for them to extend
14.08	PID09	East Press	Running		4	Set the plate shifters to rise. Waiting on parts for them to extend
14.09	PID09	Filtrate Tank	In operation			
14.10	PID09	Filtrate Tank Effluent (recycle) Pump - P903	Running			
Chemical Systems						
15		Electron Donor System				
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		4	Changed out for different style pumps.
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		3	Cleaned the level sensors in the application tank and mixing tank.
Utility Systems						
26		Compressed Air System				
26.01	PID08	West Compressor	Running			
26.02	PID08	East Compressor	Running			
26.03	PID08	O2 Compressor	Running			
26.04	PID08	Compressed Air Receiver Tank	In operation			
26.05	PID08	Air Dryer	Running		4	A new air dryer has been ordered.
26.06	PID08	Oil Removal Filter	In operation			

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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			
Miscellaneous Systems						
33		Operations Office/Network	In operation			
34		Laboratory Analyzers	In operation			
35		Security Systems	In operation			
Shelf Spares						
		Media Return Pump Rebuild Kit	In stock		4	New discs and trunnions have been ordered.
		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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