
To: Nevada Division of Environmental Protection
Nevada Environmental Response Trust

Cc: Nevada Environmental Response Trust Stakeholders

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

Date: August 20, 2021

Subject: NERT – GWETS Operation Monthly Report – July 2021

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 July 2021.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in July 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 192 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1,043 gpm during July 2021. At the end of the month, the available GW-11 Pond volume was at 35.6 million gallons (MG), which would allow 18.6 days of available additional storage in the event of an emergency FBR plant shutdown with continued well field pumping. The available water volume stored in the GW-11 Pond increased since the end of June 2021; 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 0.15 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 62 mg/L for the month, with a maximum concentration of 69 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of June 2021 averaged 58 mg/L, with a maximum concentration of 61 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 July.

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:

Diversions Events / Well Shutdowns

- Effluent diversion to GW-11 occurred on July 4, 2021 from 11:41pm to July 5, 2021 at 2:20am due to low GW-11 pond level. Approximately 210,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 5, 2021 from 11:36pm to July 6, 2021 at 3:40am due to low GW-11 pond level. Approximately 255,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 6, 2021 from 7:00pm to 9:00pm as a precautionary measure due to high effluent perchlorate results. Adjustments were made and the effluent was returned to the outfall. Approximately 132,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the Athens Well Field (AWF) occurred on July 9, 2021 from 3:45pm to 4:30pm due to a high temperature alarm at the lift station turbine pump. Troubleshooting was done on the air conditioning unit and the wells were brought back online.
- Well Field Shutdown of the AWF occurred on July 10, 2021 from 3:49pm to 4:35pm due to a high temperature/electrical breaker alarm at the lift station turbine pump. Troubleshooting was done on the temperature sensor and the wells were brought back online.
- Well Field Shutdown of the AWF occurred on July 11, 2021 from 3:19pm to 4:17pm due to a high temperature/electrical breaker alarm at the lift station turbine pump. Troubleshooting was done on the electrical breaker and the wells were brought back online.
- Effluent diversion to GW-11 occurred on July 12, 2021 from 11:10pm to July 13, 2021 at 3:00am due to low GW-11 pond level. Approximately 233,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the Interceptor Well Field (IWF) occurred on July 13, 2021 from 7:27am to 8:40am due to maintenance activities at the GWTP effluent flow meter. Maintenance was completed and the wells were brought back online.
- Effluent diversion to GW-11 occurred on July 13, 2021 from 11:13pm to July 14, 2021 at 3:02am due to low GW-11 pond level. Approximately 243,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 14, 2021 from 11:08pm to July 15, 2021 at 2:32am due to low GW-11 pond level. Approximately 200,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on July 16, 2021 from 11:46pm to July 17, 2021 4:34am due to low GW-11 pond level. Approximately 310,000 gallons of water were diverted to GW-11.
- Well Field Shutdown of the Seep Well Field (SWF) occurred on July 18, 2021 from 3:49pm to July 19, 2021 at 12:05pm due to a damaged high voltage fuse as a result of an electrical storm. High Voltage electrical contractors replaced the fuse and the wells were brought back online.
- Influent diversion to GW-11 occurred on July 20, 2021 from 4:40am to 5:46am as a precautionary measure due to high perchlorate results in the frontstage FBRs. Adjustments were made,

perchlorate reducing conditions were restored, and the effluent was returned to the outfall. Approximately 70,000 gallons of water were diverted to GW-11.

- Influent diversion to GW-11 occurred on July 21, 2021 from 7:41pm to 11:00pm due to a PLC rack failure. The affected PLC cards were replaced, the plant was brought back online, and the effluent was returned to the outfall. Approximately 210,000 gallons of water were diverted to GW-11.

3. Spills

There were no reportable spills in the month of July.

4. Maintenance

- Major maintenance performed by ETI in the reporting month included:
 - I. Replaced the main fuses at LS1 from resulting from a NV Energy power surge and power loss during a storm event. The level control transmitter was reset to normal setting. Drains were also cut in on the transformer containment.
 - II. Replaced a combo valve on the effluent pipeline.
 - III. Replaced a fuse on IWF extraction well I-V along with a new HOA switch.
 - IV. Replaced the discharge hose of the recycle pump under the clarifier.
 - V. Changed out the GWTP filter press pump.
 - VI. Replaced the VFD for the chromium treatment plant P-1001 effluent pump.
 - VII. Replaced the pump diaphragm on the FBR A ethanol pump. The injection check valve and digital conversion card were also replaced.
 - VIII. Drained separator 1 to inspect for solids. All media was transferred into FBR3.
 - IX. Installed an air bypass loop for the feed valve on FBR5.
 - X. Replaced damaged clips from the South DAF skimmer system.
 - XI. Installed the new rebuilt pump on the P-601 pump skid.
 - XII. Cleared obstructions from the reject lines of the sand filter.
 - XIII. Cleaned the west press and completed repairs to any damaged cloths.
 - XIV. Repaired the oil cooler system on the east compressor.
- Preventative maintenance performed by ETI in the reporting month included:
 - I. Changed the oil and packing on the north turbine at Lift Station 1.
 - II. Cleaned the air filters on the A/C's at Lift Station 3.
 - III. Greased the recycle motors around the plant.
 - IV. Flushed all ORP and pH lines.
 - V. Tightened connections on all electrical in the HMI at Lift Station 3.

GWETS Upgrades and Facility Projects

Unit 4 Chromium Water Treatment Plant – Envirogen participated in a meeting with the Trust in April 2021 to discuss moving this project forward. Envirogen received notification at the end of May that the Trust will be repurposing one of the AP tanks to support the Unit 4 Source Area In-situ Bioremediation Treatability

Study. Groundwater extracted as part of this treatability study will be conveyed to this tank via tanker truck where it will be stored and subsequently routed to the treatment plants for processing. Envirogen will take over responsibility for operating this tank for the duration of treatability study. Envirogen will work with the Trust in the coming months to establish a scope of work for this activity.

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 comments received from Clark County 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. Components of the system have arrived onsite and are being stored until construction begins. Envirogen received comments from the Trust regarding the GWETS O&M Work Authorization (Contract Amendment 8) and provided a response in March 2021. The Authorization has not been completed, Envirogen is waiting to receive the final version of the Contract Amendment.

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

Operational Metrics

Nevada Environmental Response Trust Groundwater Extraction and Treatment System Monthly Stakeholder Metrics				
Location ID	Average Flow Rate (gpm)	Perchlorate (mg/L) ^{4 5}	Chromium (TR) (mg/L) ^{4 5}	Chromium(VI) (mg/L) ^{4 5}
SWF Total Extraction ¹	749 ³	6.2	0.00036	0.0015
AWF Total Extraction ¹	453 ³	61	0.13	0.14
IWF Total Extraction ¹	53 ³	428	6.0	7.1
AP Area Total Extraction ¹	8.4 ³	629	0.19	0.17
GWTP Effluent ²	64	447	0.36	ND
GW-11 Influent ¹	0.33	52	0.06	0.0320
FBR Influent ²	1,043	62	0.024	0.018

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) ¹	Chromium (TR) (lbs/month) ¹	Chromium (VI) (lbs/month) ¹
SWF Total Extraction	1,746	0.100	0.41
AWF Total Extraction	10,304	22	24
IWF Total Extraction	8,502	120	141
AP Area Total Extraction	1,979	0.59	0.54
GWTP Effluent	10,609	8.6	ND
GW-11 Influent	6.5	0.0076	0.00398
FBR Influent ¹	24,265	9.4	7.0

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

Operational Metrics

Figure 1 - GW-11 Pond Volume Through 7/31/2021

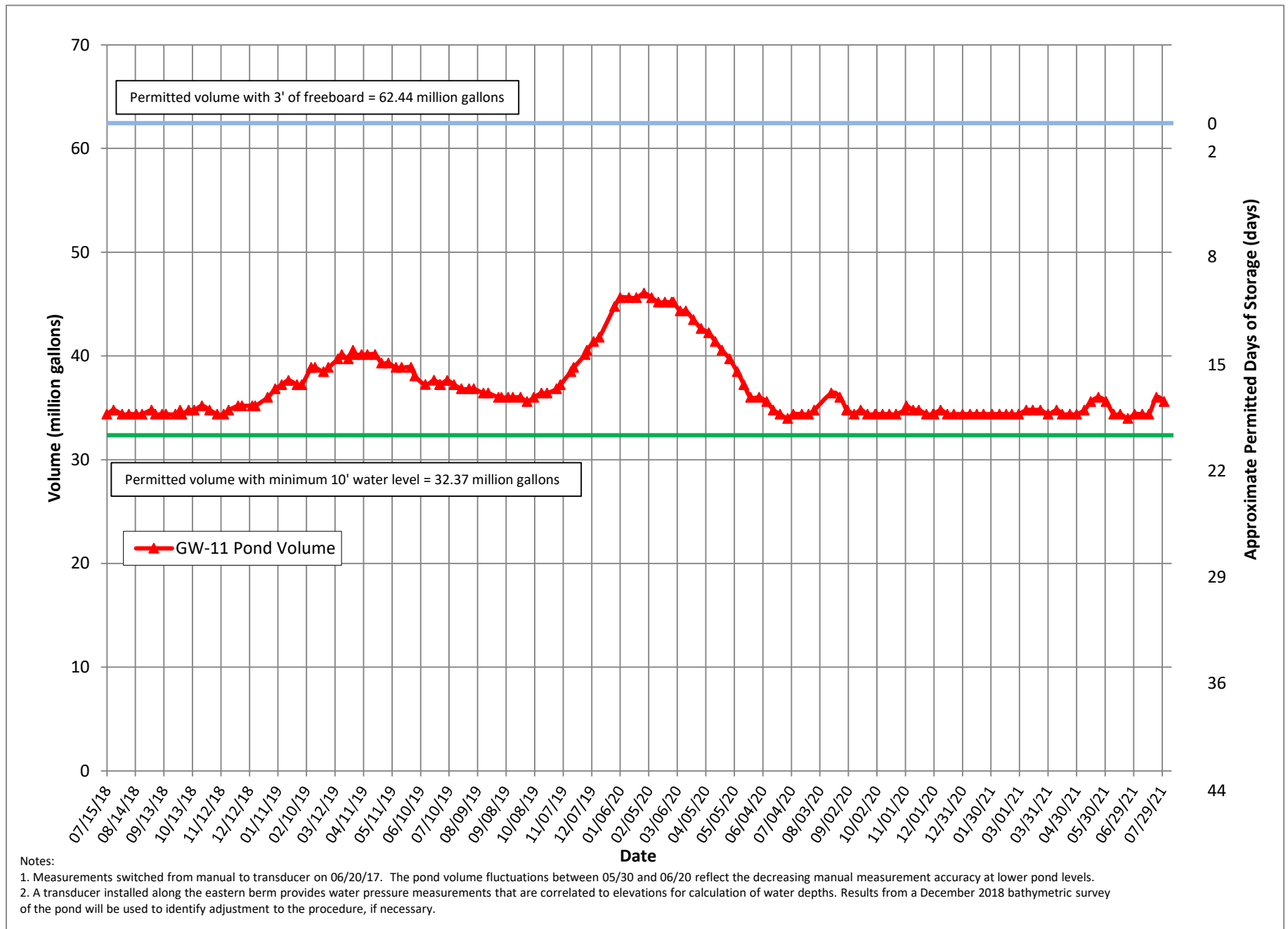
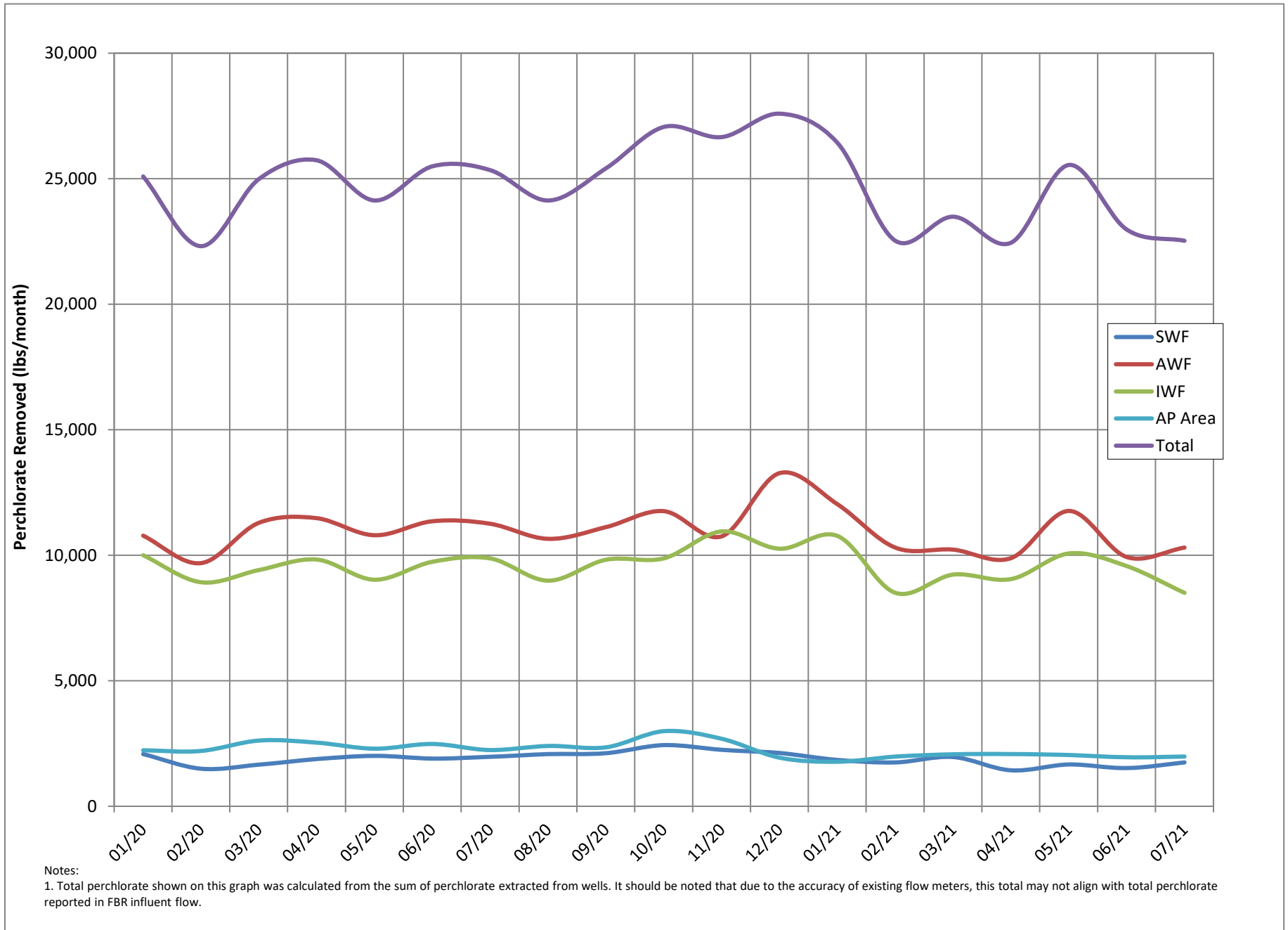


Figure 2 - Historical Perchlorate Mass Removed From Environment



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. (lbs/day)	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. (mg/L)	Daily Average (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (lbs/day)	30-Day Avg. (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	3,900
February 2021	1.76	1.85	0.55	0.008	6.5	6.7	ND (<0.25)	5.6	100	1,200	10	21	320	6	6.1	11	38	170	
March 2021	1.76	1.84	ND (<0.31)	0.0023	6.5	6.9	ND (<0.25)	2.2	110	1,100	1.4	15	220	2.6	6.6	5	15	80	3,600
April 2021	1.72	1.82	9	0.12	6.6	7.2	ND (<0.25)	1.2	72	940	0.29	7	100	2.2	5.2	ND (<5.0)	ND (<5.0)	37	
May 2021	1.65	1.84	0.16	0.0021	6.5	6.9	ND (<4.0)	4.7	100	1,700	0.56	16	220	2.8	3.2	ND (<5.0)	ND (<5.0)	34	
June 2021	1.72	1.82	0.16	0.0022	6.5	6.6	ND (<0.25)	2.1	78	990	0.69	15	230	1.7	5.7	ND (<5.0)	ND (<5.0)	35	
July 2021	1.62	1.86	0.16	0.0021	6.6	7.0	ND (<0.25)	14	100	1,500	0.50	20	210	1.0	4.4	ND (<5.0)	ND (<5.0)	27	NA
August 2021 (month to date)	1.79	1.84	NA	NA	6.5	6.5	ND (<0.20)	1.2	36	1,900	0.67	29	450	6.1	14	ND (<5.0)	ND (<5.0)	NA	

Daily Grab Sample Dates	Composited 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	6.8	ND (<0.25)	12	64	940	0.21	14	215	--	0.95	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)	4.4	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		
2/7 - 2/13	2/13/2021	0.921	0.92	0.014	2/8/2021	6.6	ND (<0.25)	4.4	57	1,100	10	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	0.961	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 - 4/3	4/3/2021	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		
4/4 - 4/10	4/10/2021	10	10	0.14	4/5/2021	6.6	ND (<0.25)	1.1	38	880	0.22	ND (<10)	5	74	--	0.16	2.4	--	0.37	5.5	4/7/2021	ND (<5.0)	2.5	37		
4/11 - 4/17	4/17/2021	ND (<0.31)	0.16	0.0023	4/12/2021	7.0	7.0*	ND (<0.85)	30	920	0.24	--	13	194	--	0.14	2.1	--	0.33	4.9	4/14/2021	ND (<5.0)	2.5	37		
4/18 - 4/24	4/24/2021	ND (<0.31)	0.16	0.0022	4/19/2021	7.0	7.0	ND (<0.25)	1.2	49	940	0.29	ND (<10)	5	75	--	0.15	2.2	--	0.33	4.9	4/21/2021	ND (<5.0)	2.5	37	
4/25 - 5/1	5/1/2021	24	24	0.35	4/27/2021	7.2	ND (<0.25)	ND (<0.85)	72	790	0.23	ND (<10)	5	75	--	0.15	2.3	--	0.35	5.3	4/28/2021	ND (<5.0)	2.5	38		
5/2 - 5/8	5/8/2021	ND (<0.31)	0.16	0.0020	5/3/2021	6.8	ND (<4.0)	ND (<0.85)	54	950	0.33	ND (<10)	5	59	--	0.19	2.3	--	0.31	3.7	5/5/2021	ND (<5.0)	2.5	25		
5/9 - 5/15	5/15/2021	ND (<0.31)	0.16	0.0021	5/11/2021	6.7	ND (<0.25)	<0.85 - 0.85	72	970	0.56	15	217	--	0.44	6.4	--	0.38	5.5	5/12/2021	ND (<5.0)	2.5	37	5/12/2021		
5/16 - 5/22	5/22/2021	ND (<0.31)	0.16	0.0021	5/17/2021	6.9	ND (<0.25)	3.7	100	1,700	0.14	23	301	--	0.11	1.4	--	0.079	1.0	5/19/2021	ND (<5.0)**	2.5	37			
5/23 - 5/29	5/29/2021	ND (<0.31)	0.16	0.0023	5/24/2021	6.5	ND (<0.25)	4.7	98	790	0.21	20	295	--	0.090	1.3	--	0.17	2.5	5/26/2021	ND (<5.0)	2.5	37			
5/30 - 6/5	6/5/2021	ND (<0.31)	0.16	0.0023	6/1/2021	6.6	ND (<0.25)	2.1	77	690	0.33	12	180	--	0.15	2.2	--	0.41	6.1	6/2/2021	ND (<5.0)**	2.5	37			
6/6 - 6/12	6/12/2021	ND (<0.31)	0.16	0.0023	6/7/2021	6.6	ND (<0.20)	1.6	78	990	0.22	16	237	--	0.065	1.0	--	0.10	1.5	6/9/2021	ND (<5.0)	2.5	37			
6/13 - 6/19	6/19/2021	ND (<0.31)	0.16	0.0022	6/14/2021	6.6	ND (<0.20)	1.7	61	960	0.69	23	343	--	0.11	1.6	--	0.53	7.9	6/16/2021	ND (<5.0)	2.5	35			
6/20 - 6/26	6/26/2021	ND (<0.31)	0.16	0.0021	6/21/2021	6.5	ND (<0.20)	ND (<0.85)	50	530	0.35	15	222	--	0.12	1.8	--	0.36	5.3	6/23/2021	ND (<5.0)	2.5	30			
6/27 - 7/3	7/3/2021	ND (<0.31)	0.16	0.0022	6/28/2021	6.5	ND (<0.20)	1.4	54	860	0.52	11	164	--	0.12	1.8	--	0.52	7.8	6/30/2021	ND (<5.0)	2.5	30			
7/4 - 7/10	7/10/2021	ND (<0.31)	0.16	0.0022	7/6/2021	6.7	ND (<0.20)	1.9	55	630	0.27	20	205	--	0.084	0.86	--	0.31	3.2	7/7/2021	ND (<5.0)	2.5	37			
7/11 - 7/17	7/17/2021	ND (<0.31)	0.16	0.0021	7/12/2021	6.6	ND (<0.20)	0.94	45	750	0.22	ND (<10)	5	66	--	0.058	0.76	--	0.28	3.7	7/14/2021	ND (<5.0)	2.5	37		
7/18 - 7/24	7/24/2021	ND (<0.31)	0.16	0.0017	7/20/2021	6.6	ND (<0.20)	14	100	1,500	0.50	45	404	--	0.22	2.0	--	0.45	4.0	7/21/2021	ND (<5.0)	2.5	34			
7/25 - 7/31	7/31/2021	ND (<0.31)	0.16	0.0024	7/27/2021	7.0	ND (<0.25)	2.7	50	1,100	ND (<0.050)	11	171	ND (<0.039)	0.020	0.30	--	0.43	6.7	7/28/2021	ND (<5.0)	2.5	38			
8/1 - 8/7	8/7/2021	NA	NA	NA	8/2/2021	6.5	ND (<0.20)	1.2	36	1,900	0.67	29	445	--	0.40	6.1	--	0.88	14	8/4/2021	ND (<5.0)	2.5	NA			
					8/9/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8/11/2021	NA	NA	NA			

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

* An additional sample was collected this week.

** Sample result has quality control (QC) qualifiers. CBOD was detected in the control blank and therefore the laboratory control sample (LCS) is outside acceptance limits.

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)

-- = 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: August 13, 2021

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			
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		1	A power loss from NV Energy caused the main fuses to blow. The fuses were replaced. The level control transmitter was reset to normal setting. The lift station came back up in auto. Drains were cut in on the transformer containment.
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			
3		Lift Station 2 and Transmission Pipelines				
3.01		Influent Pipeline	In operation			
3.02		Effluent Pipeline	Running		3	One combo valve failed. The float rusted off. The valve was isolated. A new combo valve, of appropriate size, has been ordered.
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			
4		Interceptor Wells and Cr Treatment Plant				
4.01		IWF Well Field, 30 wells	Running		2	A fuse was replaced on I-V along with a new HOA switch.
4.02		Ferrous Sulfate Feed System	Running			
4.03		Polymer Feed System	Running		3	Replaced the discharge hose of the recycle pump.
4.04		Clarifier	In operation			
4.05		Filter Press	Running		3	Changed out the press pump.
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		4	Replaced a light bulb on the east side of the GWTP. Replaced the VFD for the EFF 1001 pump.
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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Sub-System	P&ID	Description	Status ¹	Checked	Criticality ²	Notes
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			
6		First Stage FBRs A, 1 & 2				
6.01	PID14	FBR A				
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			
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			
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		2	The pump diaphragm was replaced. The injection check valve was replaced. The digital conversion card was replaced.
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			
7.02	PID01B	FBR 4	Running			
7.03	PID02B	First Stage Separator Tank - T2012	Running		2	Drained the separator to inspect for solids. All media was transferred into FBR3.

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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			
8		Second Stage FBRs 5 & 6				
8.01	PID03A	FBR 5	Running		3	Installed an air bypass loop for the feed valve.
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			
9.10	PID07A	FBR 7 Nutrient (Urea) Feed Pump - P727	Off			
9.11	PID07A	FBR 8 Nutrient (Urea) Feed Pump - P728	Off			

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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			
10.17	PID05	Screw Conveyer Drive	Standby			
10.18	PID05	Skimmer Drive	Running		3	Replaced damaged clips from the S.DAF skimmer system.
11		Pumping System (Old Effluent)				
11.01	PID06	Effluent Tank 601	In operation			
11.02	PID06	Effluent Pump - P601	Running		4	Installed the new rebuilt pump.
11.03	PID06	Effluent Pump - P602				
12		Sand Filter System				
12.01	PID17	Sand Filter			2	Took the sand filter offline to clear the obstructions from the reject lines
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				
14.01	PID16	Sludge Storage Tank	In operation			
14.02	PID16	Solids Storage Effluent Pump - P1601	Running			

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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		1	The press is offline to pressure wash and make repairs.
14.08	PID09	East Press	Running			
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			
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			
Utility Systems						
26	Compressed Air System					
26.01	PID08	West Compressor	Running			
26.02	PID08	East Compressor	Running		2	The compressor is offline to make repairs to the oil cooler system.
26.03	PID08	O2 Compressor	Running			
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			

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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			
		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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