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:	November 20, 2023
Subject:	NERT – GWETS Operation Monthly Report – October 2023

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 October 2023.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in October 2023. Flow from 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 October. The flow rate to the IX system averaged approximately 247 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1004 gpm. At the end of the month, the filled GW-11 Pond volume was at 43.1 million gallons (MG), which would allow 13.5 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 decreased since the end of September 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 2.5 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 44 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 September 2023 averaged 51 mg/L, with a maximum concentration of 53 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 October.

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:

Diversion Events / Well Shutdowns

- Extraction well field shutdown of the SWF occurred on October 10, 2023 from 7:25pm to 7:37pm due to a malfunction at the temporary electrical generator at Lift Station 1. Maintenance activities were completed and Lift Station 1 was brought back online. Extraction well PC-119 did not resume pumping until October 11, 2023 at 4:01am.
- Extraction well field shutdown of the SWF occurred on October 16, 2023 from 3:45pm to 5:15pm due to an electrical malfunction. Maintenance activities were completed and Lift Station 1 was brought back online.
- Effluent diversion occurred on October 18, 2023 from 1:15am to 2.05am as a precautionary measure due to elevated levels of perchlorate in the effluent. Adjustments were made to the process and the effluent was returned to the outfall following confirmation via laboratory testing that perchlorate was below the effluent guideline. Approximately 124,000 gallons of water were added to the GW-11 Pond.
- Effluent diversion occurred on October 24, 2023 from 1:23pm to 2:18pm as a precautionary measure due to elevated levels of perchlorate in the effluent. Adjustments were made to the process and the effluent was returned to the outfall following confirmation via laboratory testing that perchlorate was below the effluent guideline. Approximately 57,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on October 26, 2023 from 6:00am to 3:54pm due to scheduled repairs on the effluent pipeline at the EQ area. The repairs were conducted and the plant was brought back online. Approximately 630,000 gallons of water were added to the GW-11 Pond.
- Influent diversion occurred on October 29, 2023 from 9:35am to 3:30pm due to a PLC error. Troubleshooting was conducted, the error was resolved, and the plant was brought back online. Approximately 75,000 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. Spills

There were no reportable spills in the Month of October.

5. Maintenance

- Major maintenance performed by ETI in the reporting month included:

  I. Pumped out the water from PC-120 and PC-121 well vaults. Replaced fuses as needed.
  II. Repaired generator and parts for resin changeouts at the IX.
  III. Replaced the motor on the pump in AWF extraction well ART-7A.
  IV. Replaced the pump on the pump in AWF extraction well ART-8A.
  V. Installed a new pump and motor at Interceptor booster pump P1-A.
  VI. Pulled the pump from the sump at the southwest corner of the GW-11 Pond and repaired the connections.
  VII. Replaced the damaged 8'' piping on the effluent line.
  VIII. Replaced the discharge check valve.
  IX. Removed the old transducer from the level control valve for Separator 1.
  X. Rebuilt the head of the pump for the ethanol feed for FBR2.
  XI. Repaired the rakes and brought the North DAF back online.

- Preventative maintenance performed by ETI in the reporting month included:

  I. Re-calibrated the level sensor on the wet well.
  II. Calibrated the feed valve on FBR 4.
  III. Replaced the fittings on the check valve of the injection point of FBR 6.
  IV. Cycled the feed valves on the backstage FBRs for proper operation.
  V. Opened the Aeration tank and inspected and removed solids.
  VI. Replaced the belt and the air filter on the Aeration tank blower.
  VII. Calibrated the flow control valve on the P-601 pump.
  VIII. Inspected and cleaned the HMI cabinets at LS3.
  IX. Calibrated the pH and ORP lines.
  X. Inspected and locked the screens on the flowmeters.

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

6. Treatment System Extension

During October 2023, the flow rate to the TSE averaged approximately 50.6 gpm. The influent perchlorate concentration to the TSE averaged 9.1 mg/L for the month, with a maximum concentration of 8.7 mg/L. In comparison, the influent perchlorate concentration to the TSE for the month of October 2023 averaged 8.7 mg/L, with a maximum concentration of 9.4 mg/L.

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 Floatation (DAF) Vessel replacement
        1. DAF equipment is on order. The expected delivery is December 2023.

    II. Concrete Repair at various locations on FBR pad
        1. Scheduling work with selected contractor. Work is anticipated to be completed in December 2023.

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 as well as groundwater to be extracted as part of the Unit 4 Source Area In-Situ Bioremediation Treatability Study. 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.

3. Water Reuse – Consistent with the Trust's efforts to reduce its water consumption and acknowledgment of best management practices, accelerated by the Basic Water Company (BWC) bankruptcy filing, the Trust has actively pursued multiple options to become independent of the BWC water distribution system. To that end, it is the objective of the Trust to replace the water currently distributed by BWC through implementation of an effluent filtration system (EFS) to allow for reuse of the GWETS effluent. The filtered effluent can only be used within treatment operations. The filtration system was delivered to the NERT Site in May 2023 and equipment integration began in June 2023 following receipt of NDEP's approval of the 100 percent design on June 6, 2023. A second identical filtration unit has been integrated into the EFS and is operating in a lead-lag configuration.

Tables

Operational Metrics

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics				
Location ID	**Average Flow Rate (gpm)**	**Perchlorate (mg/L)[4]**	**Chromium (TR) (mg/L)[4]**	**Chromium(VI) (mg/L)[4]**
SWF Total Extraction[1]	776[3]	8.9	0.00018	0.0025
AWF Total Extraction[1]	451[3]	47	0.11	0.12
IWF Total Extraction[1]	47[3]	349	5.4	5.6
AP Area Total Extraction[1]	7.9[3]	572	0.18	0.20
Chromium Treatment Subsystem Effluent[2]	56	374	0.95	0.00040
GW-11 Influent[1]	0.22	29	0.047	0.057
FBR Influent[2]	1,004	44	0.097	0.037
Treatment System Extension Influent[2]	51	9.7	0.22	0.24

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: Sum of daily average flow for individual wells.

4: All concentrations reported are monthly flow weighted averages.

Nevada Environmental Response Trust I Groundwater Extraction and Treatment System I Monthly Stakeholder Metrics			
Location ID	**Perchlorate (lbs/month)[1]**	**Chromium (TR) (lbs/month)[1]**	**Chromium (VI) (lbs/month)[1]**
SWF Total Extraction	2,151	0.044	0.60
AWF Total Extraction	7,839	18	20
IWF Total Extraction	6,115	94	97
AP Area Total Extraction	1,693	0.52	0.58
Chromium Treatment Subsystem Effluent	7,740	20	0.0084
GW-11 Influent	2.4	0.0039	0.0047
FBR Influent[1]	16,364	36	14
Treatment System Extension Influent[1]	184	4.2	4.5

Notes:

TR = Total Recoverable.

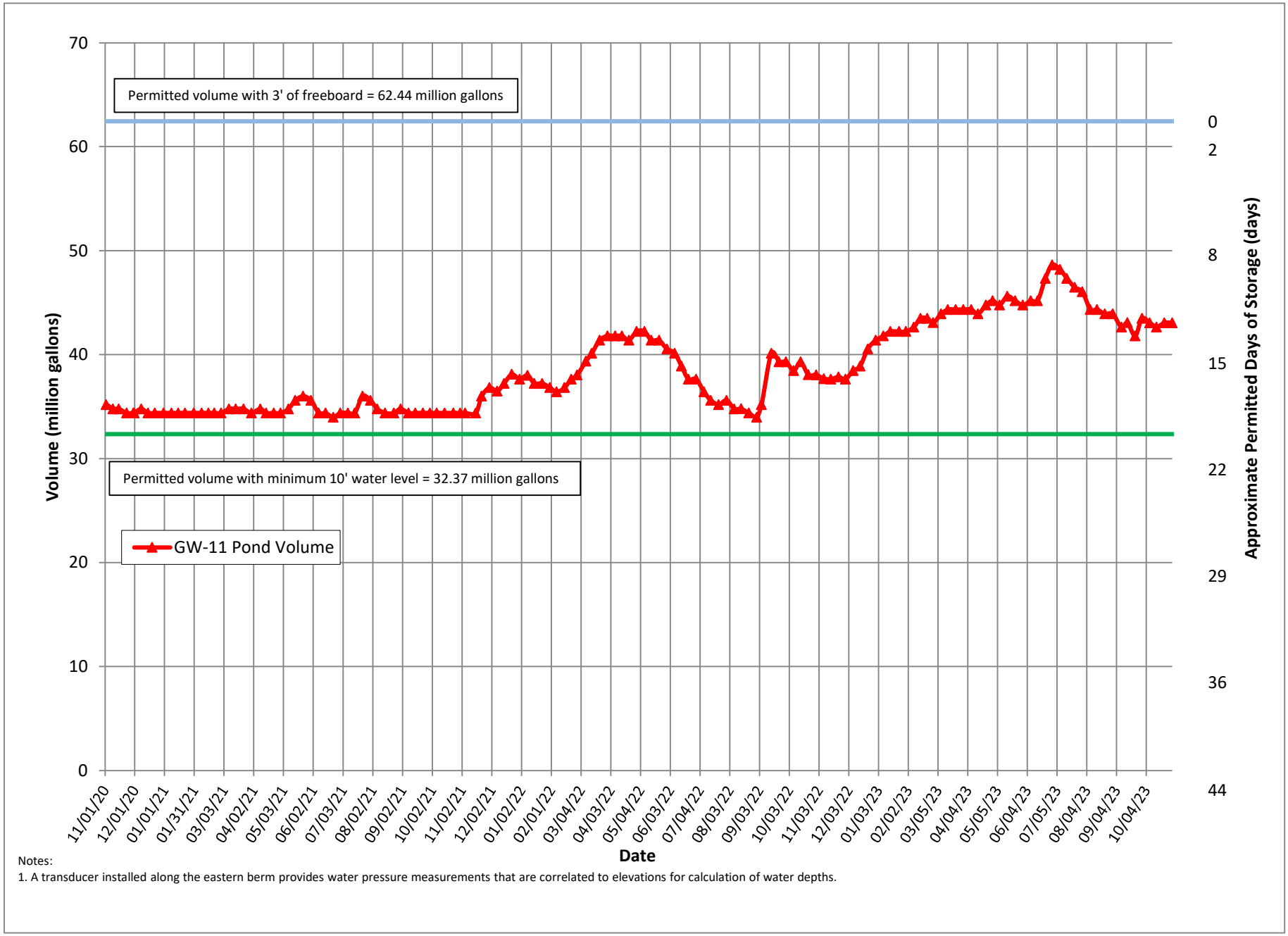
1: Total mass extracted is calculated from flow weighted average concentration and average flow (see Table 1).

Table Updated: 11/16/2023

Figures

Operational Metrics

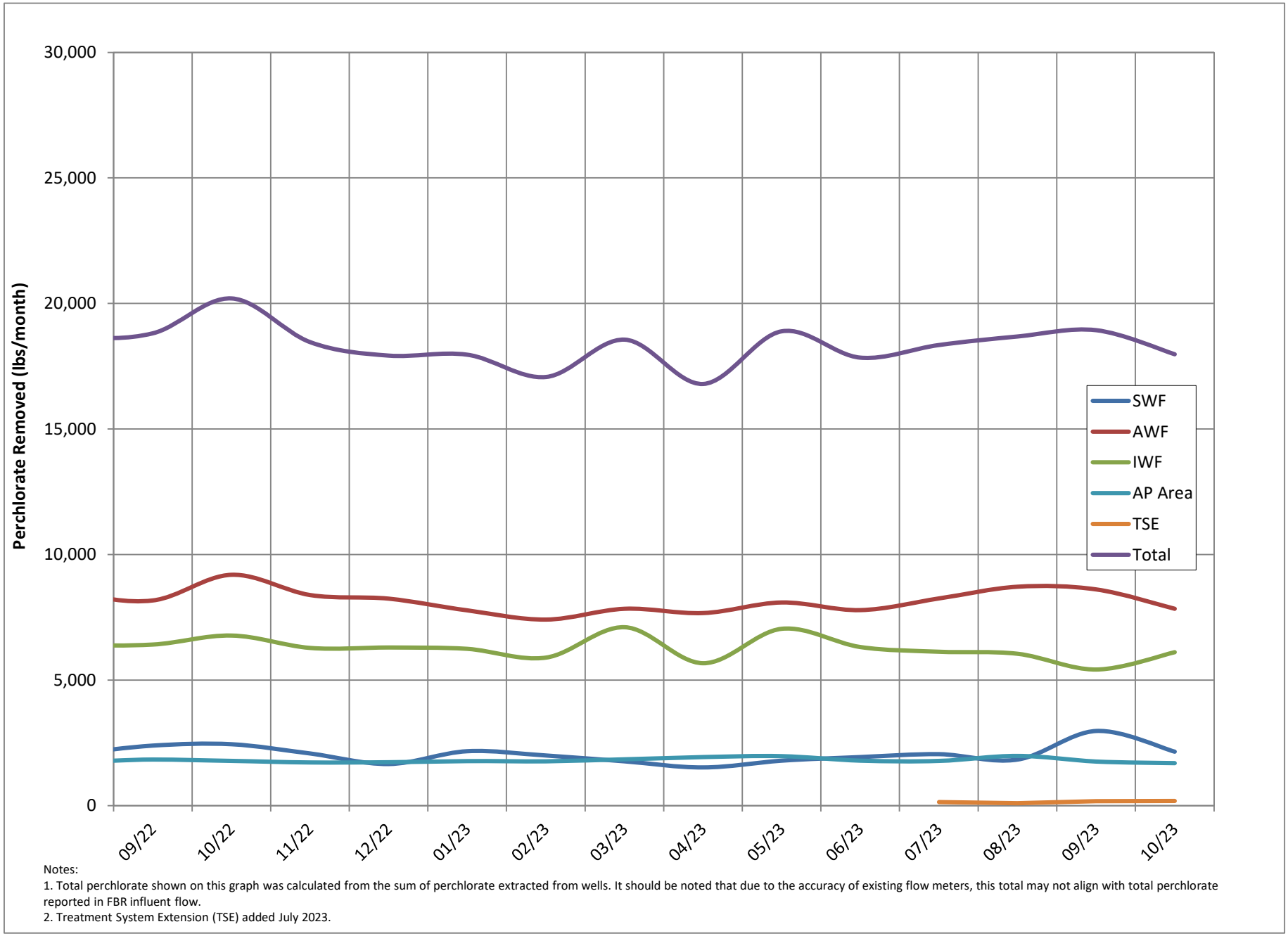
Figure 1 - GW-11 Pond Volume Through 10/31/2023



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

Figure Updated: 11/6/2023

Figure 2 - Historical Perchlorate Mass Removed From Environment



Notes:
1. Total perchlorate shown on this graph was calculated from the sum of perchlorate extracted from wells. It should be noted that due to the accuracy of existing flow meters, this total may not align with total perchlorate reported in FBR influent flow.
2. Treatment System Extension (TSE) added July 2023.

Figure Updated: 11/17/2023

Attachment A

NPDES Tracking Sheet (Prepared by Ramboll)

NPDES Permit NV0023060 - Analytes with Numerical Discharge Limits

Treated Effluent at Outfall 001

	Continuous: Flow Rate 30-Day Avg. (MGD)	Continuous: Flow Rate Daily Maximum (MGD)	Daily Samples, composited weekly: Perchlorate 30-Day Avg. (µg/L)	Perchlorate 30-Day Avg. (lbs/day)	Weekly Grab Samples: pH Daily Min. (S.U.)	pH Daily Max. (S.U.)	Hexavalent Chromium Daily Max. (µg/L)	Total Chromium Daily Max. (µg/L)	Manganese Daily Max. (µg/L)	Total Iron Daily Max. (µg/L)	Total Inorganic Nitrogen (TIN) Daily Max. (mg/L)	Total Suspended Solids (TSS) Daily Average (mg/L)	TSS 30-Day Avg. (lbs/day)	Total Ammonia as N 30-Day Avg. (lbs/day)	Total Phosphorus as P 30-Day Avg. (lbs/day)	Weekly, collected separately: BOD5 (inhibited) 30-Day Avg. (mg/L)	BOD5 Daily Max. (mg/L)	BOD5 30-Day Avg. (lbs/day)	Quarterly: Total Dissolved Solids (TDS) 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 2023	1.70	1.76	ND (<1.6)	0.011	6.6	6.9	ND (<0.150)	26	390	1,100	0.96	13	190	1.9	5.1	ND (<5.0)	ND (<5.0)	36	
February 2023	1.69	1.75	1.1	0.015	6.8	7.1	ND (<0.150)	41	340	1,300	1.3	22	310	4.2	7.2	ND (<5.0)	ND (<5.0)	35	3,900
March 2023	1.67	1.78	2.3	0.033	7.1	7.4	ND (<0.150)	13	320	1,100	1.3	20	270	3.6	5.6	ND (<5.0)	ND (<5.0)	35	
April 2023	1.63	1.75	1.6	0.022	6.75	7.1	ND (<0.150)	35	390	940	0.82	15	200	2.5	4.6	ND (<5.0)	ND (<5.0)	34	
May 2023	1.68	1.79	3.8	0.052	7.0	7.2	ND (<0.150)	20	720	1,400	1.1	15	220	2.7	5.7	ND (<5.0)	ND (<5.0)	35	3,800
June 2023	1.47	1.72	ND (<1.6)	0.010	6.6	6.6	ND (<0.150)	9.0	460	1,300	0.75	12	160	1.8	3.7	ND (<5.0)	ND (<5.0)	34	
July 2023	1.67	1.82	1.5	0.021	6.5	7.20	0.177	25	330	1,200	0.67	14	200	1.8	5.4	3.1	4.7	43	
August 2023	1.62	1.96	ND (<1.6)	0.011	6.56	7.12	ND (<0.150)	22	480	1,600	0.71	19	240	1.8	6.1	ND (<5.0)	ND (<5.0)	33	4,200
September 2023	1.67	1.85	2.0	0.029	6.97	7.22	ND (<0.150)	8.6	420	1,100	1.1	17	230	0.9	5.4	ND (<5.0)	ND (<5.0)	36	
October 2023 (month to date)	1.70	1.81	4.7	0.053	7.00	7.10	ND (<0.150)	20	360	1,300	1.4	13	190	1.5	6.7	4.1	8.7	60	
November 2023 (month to date)	1.65	1.91	NA	NA	6.90	7.14	ND (<0.150)	7.7	410	1,000	1.6	22	260	0.2	3.8	ND (<5.0)	ND (<5.0)	28	

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
1/1 - 1/7	1/7/2023	ND (<1.6)	0.8	0.011	1/4/2023	6.6	ND (<0.150)	10	340	830	0.87	ND(<10)	5	70	--	0.090	1.3	--	0.43	6.0	1/4/2023	ND (<5.0)	2.5	35		
1/8 - 1/14	1/14/2023	ND (<1.6)	0.8	0.011	1/11/2023	6.8	ND (<0.150)	22	280	690	0.80	--	10	142	--	0.044	0.63	--	0.30	4.3	1/11/2023	ND (<5.0)	2.5	36		
1/15 - 1/21	1/21/2023	ND (<1.6)	0.8	0.012	1/18/2023	6.8	ND (<0.150)	15	350	1100	0.80	--	19	275	--	0.16	2.3	--	0.40	5.8	1/18/2023	ND (<5.0)	2.5	36		
1/22 - 1/28	1/28/2023	ND (<1.6)	0.8	0.012	1/25/2023	6.9	ND (<0.150)	26	390	760	0.96	--	19	277	--	0.24	3.5	--	0.31	4.5	1/25/2023	ND (<5.0)	2.5	36		
1/29 - 2/4	2/4/2023	ND (<1.6)	0.8	0.011	2/1/2023	7.1	ND (<0.150)	7.6	340	620	0.80	--	20	281	--	0.16	2.3	--	0.32	4.5	2/1/2023	ND (<5.0)	2.5	35		
2/5 - 2/11	2/11/2023	ND (<1.6)	0.8	0.011	2/8/2023	6.8	ND (<0.150)	41	290	1100	0.87	--	24	349	--	0.19	2.8	--	0.31	4.5	2/8/2023	ND (<5.0)	2.5	36		
2/12 - 2/18	2/18/2023	2.0	2.0	0.027	2/15/2023	6.8	ND (<0.150)	3.8	280	970	0.75	--	20	282	--	0.15	2.1	--	0.49	6.9	2/15/2023	ND (<5.0)	2.5	35		
2/19 - 2/25	2/25/2023	ND (<1.6)	0.8	0.011	2/22/2023	7.0	ND (<0.150)	25	260	1300	1.3	--	24	335	--	0.69	9.6	--	0.91	12.7	2/22/2023	ND (<5.0)	2.5	35	2/28/2023	3,900
2/26 - 3/4	3/4/2023	ND (<1.6)	0.8	0.012	3/1/2023	7.2	ND (<0.150)	13	320	1100	0.22	--	12	174	--	0.20	2.9	--	0.49	7.1	3/1/2023	ND (<5.0)	2.5	36		
3/5 - 3/11	3/11/2023	ND (<1.6)	0.8	0.011	3/8/2023	7.1	ND (<0.150)	9.5	300	620	1.0	--	14	196	--	0.23	3.2	--	0.30	4.2	3/8/2023	ND (<5.0)	2.5	35		
3/12 - 3/18	3/18/2023	ND (<1.6)	0.8	0.011	3/15/2023	7.2	ND (<0.150)	11	290	860	1.3	--	22	284	--	0.33	4.3	--	0.40	5.2	3/15/2023	ND (<5.0)	2.5	32		
3/19 - 3/25	3/25/2023	ND (<1.6)	0.8	0.011	3/22/2023	7.1	ND (<0.150)	5.3	240	710	0.71	--	21	298	--	0.18	2.6	--	0.33	4.7	3/22/2023	ND (<5.0)	2.5	35		
3/26 - 4/1	4/1/2023	8.4	8.4	0.120	3/29/2023	7.4	ND (<0.150)[1]	4.8	260	620	1.1	--	29	413	--	0.35	5.0	--	0.49	7.0	3/29/2023	ND (<5.0)	2.5	36		
4/2 - 4/8	4/8/2023	ND (<1.6)	0.8	0.011	4/5/2023	6.8	ND (<0.150)	0.87	260	210	0.79	--	16	223	--	0.16	2.2	--	0.32	4.5	4/5/2023	ND (<5.0)	2.5	35		
4/9 - 4/15	4/15/2023	3.9	3.9	0.054	4/12/2023	7.0	ND (<0.150)	35	390	540	0.75	--	19	268	--	0.17	2.4	--	0.31	4.4	4/12/2023	ND (<5.0)	2.5	35		
4/16 - 4/22	4/22/2023	ND (<1.6)	0.8	0.011	4/19/2023	6.75	ND (<0.150)	6.6	260	370	0.82	--	18	237	--	0.21	2.8	--	0.30	4.0	4/19/2023	ND (<5.0)	2.5	33		
4/23 - 4/29	4/29/2023	ND (<1.6)	0.8	0.011	4/26/2023	7.1	ND (<0.150)	6.9	290	940	0.82	ND(<10)	5	69	--	0.18	2.5	--	0.41	5.7	4/26/2023	ND (<5.0)	2.5	35		
4/30 - 5/6	5/6/2023	ND (<1.6)	0.8	0.011	5/3/2023	7.0	ND (<0.150)	4.4	360	280	1.1	--	15	205	--	0.34	4.6	--	0.46	6.3	5/3/2023	ND (<5.0)	2.5	34		
5/7 - 5/13	5/13/2023	ND (<1.6)	0.8	0.011	5/10/2023	7.2	ND (<0.150)	20	280	1400	0.82	--	33	450	--	0.12	1.6	--	0.58	7.9	5/10/2023	ND (<5.0)	2.5	34		
5/14 - 5/20	5/20/2023	ND (<1.6)	0.8	0.011	5/17/2023	7.0	ND (<0.150)	4.8	240	570	0.77	--	14	206	--	0.17	2.5	--	0.34	5.0	5/17/2023	ND (<5.0)	2.5	37	5/17/2023	3,800
5/21 - 5/27	5/27/2023	ND (<1.6)	0.8	0.012	5/24/2023	7.1	ND (<0.150)	2.1	290	470	0.85	--	10	149	--	0.16	2.4	--	0.36	5.3	5/24/2023	ND (<5.0)	2.5	37		
5/28 - 6/3	6/3/2023	16	16	0.216	5/30/2023	7.16	ND (<0.150)	2.6	720	300	0.85	ND(<10)	5	68	--	0.18	2.5	--	0.29	3.9	5/30/2023	ND (<5.0)	2.5	34		
6/4 - 6/10	6/10/2023	ND (<1.6)	0.8	0.011	6/7/2023	6.6	ND (<0.150)	5.2	310	680	0.63	--	13	185	--	0.065	0.9	--	0.23	3.3	6/7/2023	ND (<5.0)	2.5	35		
6/11 - 6/17	6/17/2023	ND (<1.6)	0.8	0.010	6/14/2023	6.6	ND (<0.150)	6.5	460	600	0.75	--	10	126	--	0.28	3.5	--	0.31	3.9	6/14/2023	ND (<5.0)	2.5	32		
6/18 - 6/24	6/24/2023	ND (<1.6)	0.8	0.009	6/21/2023	6.6	ND (<0.150)	4.0	450	480	0.59	--	11	151	--	0.15	2.1	--	0.19	2.6	6/21/2023	ND (<5.0)	2.5	34		
6/25 - 7/1	7/1/2023	ND (<1.6)	0.8	0.009	6/28/2023	6.6	ND (<0.150)	9.0	380	1300	0.50	--	13	170	--	0.061	0.8	--	0.37	4.8	6/28/2023	ND (<5.0)	2.5	33		
7/2 - 7/8	7/8/2023	ND (<1.6)	0.8	0.011	7/5/2023	6.5	ND (<0.150)	10	300	1200	0.67	--	14	181	--	0.16	2.1	--	0.40	5.2	7/5/2023	ND (<5.0)	2.5	32		
7/9 - 7/15	7/15/2023	ND (<1.6)	0.8	0.012	7/13/2023	7.20	0.177	25	330	1000	0.42	--	22	295	--	0.10	1.3	--	0.36	4.8	7/13/2023	ND (<5.0)	2.5	34		
7/16 - 7/22	7/22/2023	3.5	3.5	0.049	7/19/2023	6.7	ND (<0.150)	1.2	260	520	0.34	ND(<10)	5	73	ND(<0.039)	0.0195	0.3	--	0.29	4.2	7/19/2023	ND (<5.0)	2.5	36		
7/23 - 7/29	7/29/2023	ND (<1.6)	0.8	0.011	7/27/2023	6.87	ND (<0.150)	11	260	250	0.61	--	16	233	--	0.23	3.3	--	0.52	7.6	7/27/2023	4.7[2]	4.7	68		
7/30 - 8/5	8/5/2023	ND (<1.6)	0.8	0.011	8/2/2023	6.93	ND (<0.150)	14	390	880	0.34	--	20	300	--	0.071	1.1	--	0.78	11.7	8/2/2023	ND (<5.0)	2.5	38		
8/6 - 8/12	8/12/2023	ND (<1.6)	0.8	0.011	8/9/2023	7.12	ND (<0.150)	22	430	800	0.42	--	12	168	--	0.058	0.8	--	0.23	3.2	8/9/2023	ND (<5.0)	2.5	35		
8/13 - 8/19	8/19/2023	ND (<1.6)	0.8	0.008	8/16/2023	6.56	ND (<0.150)	10	230	1300	0.50	--	28	202	--	0.11	0.8	--	0.11	0.8	8/16/2023	ND (<5.0)	2.5	18	8/16/2023	4,200
8/20 - 8/16	8/26/2023	ND (<1.6)	0.8	0.011	8/23/2023	7.08	ND (<0.150)[3]	13	480	1600	0.54	--	20	295	--	0.14	2.1	--	0.55	8.1	8/23/2023	ND (<5.0)	2.5	37		
8/27 - 9/2	9/2/2023	ND (<1.6)	0.8	0.012	8/30/2023	6.98	ND (<0.150)	10	480	1100	0.71	--	15	229	--	0.27	4.1	--	0.43	6.6	8/30/2023	ND (<5.0)	2.5	38		
9/3 - 9/9	9/9/2023	ND (<1.6)	0.8	0.012	9/6/2023	6.97	ND (<0.150)	4.6	420	1100	0.73	--	11	170	--	0.11	1.7	--	0.22	3.4	9/6/2023	ND (<5.0)	2.5	39		
9/10 - 9/16	9/16/2023	6.1	6.1	0.087	9/13/2023	7.08	ND (<0.150)	8.6	340	1100	0.71	--	16	232	--	0.054	0.8	--	0.41	5.9	9/13/2023	ND (<5.0)	2.5	36		
9/17 - 9/23	9/23/2023	ND (<1.6)	0.8	0.011	9/20/2023	7.22	ND (<0.150)	4.2	340	930	1.1	--	14	213	--	0.053	0.8	--	0.24	3.7	9/20/2023	ND (<5.0)	2.5	38		
9/24 - 9/30	9/30/2023	ND (<0.63)	0.315	0.004	9/27/2023	7.18	ND (<0.150)	ND (<4.3)	360	820	0.93	--	25	324	ND(<0.039)	0.0195	0.3	--	0.68	8.8	9/27/2023	ND (<5.0)	2.5	32		
10/1 - 10/7	10/7/2023	ND (<1.6)	0.8	0.012	10/4/2023	7.00	ND (<0.150)	8.1	330	1000	1.2	--	15	219	--	0.14	2.0	--	0.38	5.6	10/4/2023	ND (<5.0)	2.5	37		
10/8 - 10/14	10/14/2023	ND (<0.63)	0.315	0.005	10/11/2023	7.10	ND (<0.150)	20	320	1300	0.74	--	20	294	ND(<0.039)	0.0195	0.29	--	0.66	9.7	10/11/2023	ND (<5.0)	2.5	37		
10/15 - 10/21	10/21/2023	13	13	0.192	10/18/2023	7.06	ND (<0.150)	2.4	360	650	1.4	--	12	181	--	0.16	2.4	--	0.40	6.0	10/18/2023	ND (<5.0)	2.5	38		
10/22 - 10/28	10/28/2023	ND (<0.63)	0.315	0.004	10/25/2023	7.06	ND (<0.150)	2.4	320	630	1.3	ND(<10)	5	75	--	0.076	1.1	--	0.37	5.6	10/25/2023	8.7	8.7	131		
10/29 - 11/4	11/4/2023				11/2/2023	7.14	ND (<0.150)	5.6	400	790	1.6	--	17	116	ND(<0.039)	0.0195	0.1	--	0.55	3.8	11/2/2023	ND (<5.0)	2.5	17		
11/5 - 11/11	11/11/2023				11/8/2023	6.90	ND (<0.150)	7.7	410	1000	1.6	--	26	397	ND(<0.039)	0.0195	0.3				11/8/2023	ND (<5.0)	2.5	38		
					11/15/2023	6.99									ND(<0.039)	0.0195					11/15/2023				11/15/2023	

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] Pace Hexavalent Chromium sample taken 03/31/2023; original sample taken 03/29/2023 (L1599378) went over hold time and needed resampling.
[2] Average of 6.9 mg/L and 2.5 mg/L (< 5.0 mg/L); there was not enough sample to rerun in duplicate.
[3] Pace Hexavalent Chromium sample taken 08/24/2023; original sample taken 08/23/2023 (L1648967) needed resampling.
Last Updated: November 17, 2023

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		4	Pumping out the water from PC-120 and PC-121 vaults. Replaced fuses as needed.
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		3	Repaired generator and parts for resin changeouts.
2		**Athens Road Wells and Lift Station** 3				
2.01		*Athens Road Well Field, 9 wells*	Running		2	Replaced the motor on ART-7A. Replaced the pump on ART-8A.
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			
3.03		*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		3	Re-calibrated the level sensor on the wet well.
4		**Interceptor Wells and Cr Treatment Plant**				
4.01		*IWF Well Field, 30 wells*	Running			
4.02		*Ferrous Sulfate Feed System*	Running		3	New fittings were installed on the suction tubing.
4.03		*Polymer Feed System*	Running			
4.04		*Clarifier*	In operation		3	
4.05		*Filter Press*	Running			
4.06		*GWTP Effluent Tank*	In operation			
4.07		*Interceptor Booster Pump A*	Running		2	Installed a new pump and motor.
4.08		*Interceptor Booster Pump B*	Standby			
4.09		*Area In And Around GWTP*	Running			
5		**Equalization Area and GW-11 Pond**				
5.01	PID10A	*Pond GW-11*	In operation		3	Pulled the SW corner and repaired the connections.
5.02	PID10A	*Pond Water Pump - P101A*	Running			
5.03	PID10A	*Pond Water Pump - P101B*	Standby			
5.04	PID10A	*Equalization Tanks*	In operation			
5.05	PID10A	*Area in and Around EQ*	In operation		1	Replaced the damaged 8" piping on the EFF line.
5.06	PID10A	*Raw Water Feed Pump - P102A*			1	Replaced the discharge check valve.
5.07	PID10A	*Raw Water Feed Pump - P102B*				

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
6.08	PID01A	*First Stage Separator Tank - T2011*	Running		3	Removed the old transducer from the level control valve.
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		3	Rebuilt the head of the pump.
7		**First Stage FBRs 3** *& 4*				
7.01	PID01B	*FBR 3*	Running			
7.02	PID01B	*FBR 4*	Running		3	Calibrated the feed valve.
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
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		3	Replaced the fittings on the check valve of the injection point of the FBR.
9		**Second Stage FBRs 7** & 8				
9.01	PID03B	*FBR 7*	Running		3	Cycled the feed valve.
9.02	PID03B	*FBR 8*	Running		3	Cycled the feed valve.
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			
9.12	PID07B	*FBR 7 Electron Donor Assembly Pump - P737*	Running			
9.13	PID07B	*FBR 8 Electron Donor Assembly Pump - P738*	Running			

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10		**Aeration and DAF System**				
10.01	PID04	*Aeration Tank*	In operation		1	Opened the tank and inspected and removed solids.
10.02	PID04	*Aeration Blower - B401*	Running		3	Replaced the belt and the air filter.
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		2	Repaired the rakes and got the DF back online.
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			
11		**Pumping System (Old Effluent)**				
11.01	PID06	*Effluent Tank 601*	In operation			
11.02	PID06	*Effluent Pump - P601*	Running			Calibrated the flow control valve.
11.03	PID06	*Effluent Pump - P602*				
12		**Sand Filter System**				
12.01	PID17	*Sand Filter*				
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			
14.03	PID16	*Solids Cond. Tank*	In operation			
14.04	PID09	*Sludge Mixer*	Running			

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14.05	PID09	*Filter Press Pump - P901*	Running			
14.06	PID09	*Filter Press Pump - P902*			3	New pump installed.
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			
		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			
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			
28		*GWETS Plant Controls/ Siemens Controls*	In operation			
29		*Well Control System/ Allen Bradley Controls*	In operation			

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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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