
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: April 20, 2024

Subject: NERT – GWETS Operation Monthly Report – March 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 March 2024.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in March 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 fluidized bed reactor (FBR) plant for the month of March. The flow rate to the IX system averaged approximately 318 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 940 gpm. At the end of the month, the filled GW-11 Pond volume was at 50.8 million gallons (MG), which would allow 8.1 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 increased since the end of February 2024; 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 2.0 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 39 mg/L for the month, with a maximum concentration of 51 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of Feb 2023 averaged 48 mg/L, with a maximum concentration of 52 mg/L.

During March, ETI continued implementation of a preventative maintenance program to refurbish all frontside and backside FBRs. Through this program, FBRs will be systematically emptied and dismantled to determine the extent of refurbishment. Additional information on this program is presented later in this report.

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 March.

2. Biological Plant

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

Diversions Events / Well Shutdowns

- Effluent diversion occurred on March 8, 2024 from 8:23am to 1:29pm as a precautionary measure due to high effluent turbidity readings as a result of activities related to the FBR refurbishment process. Adjustments were made to the process and the effluent was returned to the outfall. Approximately 231,000 gallons of water were added to the GW-11 pond.
- Extraction well field shutdown of the Seep Well Field occurred on March 16, 2024 from 12:19am to 9:35am, 8:15pm to 10:02pm, and on March 17, 2024 from 12:34pm to 2:18pm, and on March 19, 2024 from 3:05am to 7:01am, 1:04pm to 2:00pm, and 5:26pm to 6:46pm due to power supply interruptions as a result of electrical generator malfunction. Maintenance activities were conducted on the electrical generator and the well field was brought back online.
- Effluent diversion occurred on March 28, 2024 from 8:13am to 1:47pm as a precautionary measure due to elevated levels of perchlorate in the effluent as a result of activities related to the FBR refurbishment process. Adjustments were made to the process and the effluent was returned to the outfall. Approximately 321,000 gallons of water were added to the GW-11 pond.

3. IX Treatment Plant

The concentration of perchlorate in shallow groundwater remains elevated in the western wells of the SWF. This increase is a result of the CoH discharging water to Birding Ponds 10 through 13 from late August through October 2023. The perchlorate concentrations in groundwater adjacent to the western leg of the SWF are expected to remain elevated for an extended period as result of this activity.

4. Treatment System Extension (TSE)

During March 2024, operations at the TSE plant continued to be idled. Throughout the month of March 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 March 2024, the EFS operated normally and produced approximately 420,000 gallons of filtered GWETS effluent which supported the utility water requirements of GWETS operations.

6. Chromium Treatment Subsystem (CTS)

During March 2024, the CTS operated normally and treated approximately 1,160,000 gallons of groundwater.

7. Spills

There were no reportable spills during the month of March.

8. Maintenance

- Major maintenance performed by ETI in the reporting month included:
 - I. Installed new airline at Ferric Chloride tank.
 - II. Installed actuator on the slam valve for FBR 4.
 - III. Installed actuator on slam valve for FBR 2.
 - IV. Repaired leaking gasket at Effluent Filtration System.
 - V. Installed new hoses at Filtrate tank pump.
 - VI. Rebuilt and installed Media Return pump for Separator 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. Inspected the laterals and nozzles for FBR 4.
 - VI. Greased all rotating equipment as needed.
 - VII. Cleaned the air ends on all AOD pumps.

- FBR Refurbishment
 - I. Stopped forward feed flow to FBR 4.
 - II. Began process of removing sand from FBR 4.
 - III. Installed pancake valve in Separator 2 to enable FBR 3 to run while FBR 4 underwent refurbishment.
 - IV. Removed, inspected, and reinstalled all laterals and nozzles in FBR 4.
 - V. Returned all sand to FBR 4.
 - VI. Brought FBR 4 online.
 - VII. Added pancake valves to FBR 2 and FBR 5 to start refurbishment process.

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 Floatation (DAF) Vessel replacement
 1. The replacement DAF was delivered in December 2023 and will be installed in June 2024.
 - II. Concrete Repair at various locations on FBR pad
 1. Scheduling work with selected contractor. Work is anticipated to be completed in May 2024.

2. Improved Biological Treatment Plant Efficiency – Consistent with Attachment D to the December 2021 GWETS Operation Monthly Report, Envirogen plans to take three 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 remaining two FBRs scheduled to be taken out of service will be addressed in the 3rd quarter of 2024 after the ongoing FBR refurbishment is complete.

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	736	7.4	0.0013	0.0018
AWF Total Extraction ¹	433	51	0.24	0.23
IWF Total Extraction ¹	44	351	5.3	5.0
AP Area Total Extraction ¹	7.8	549	0.19	0.19
Chromium Treatment Subsystem Effluent ²	26	382	1.1	0.00032
GW-11 Influent ¹	0.10	30	0.11	0.097
FBR Influent ²	940	39	0.29	0.10
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 03/01 to 03/31.
- 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	1,690	0.30	0.41
AWF Total Extraction	8,294	38	37
IWF Total Extraction	5,799	88	82
AP Area Total Extraction	1,605	0.56	0.55
Chromium Treatment Subsystem Effluent	3,693	11	0.0031
GW-11 Influent	1.2	0.0043	0.0038
FBR Influent ¹	13,662	103	36
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 03/01 to 03/31.

Figures

Operational Metrics

Figure 1 - GW-11 Pond Volume Through 03/31/2024

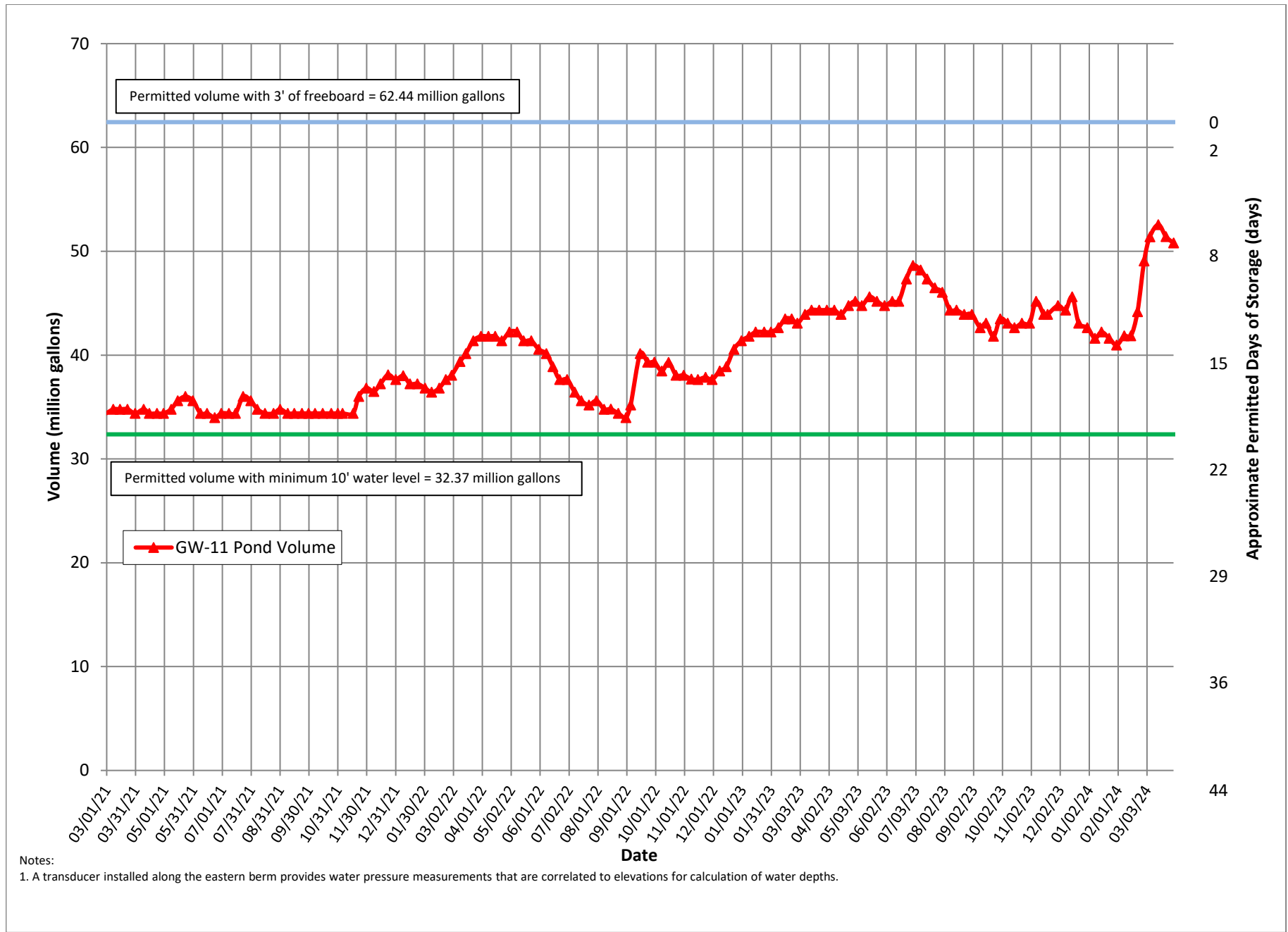
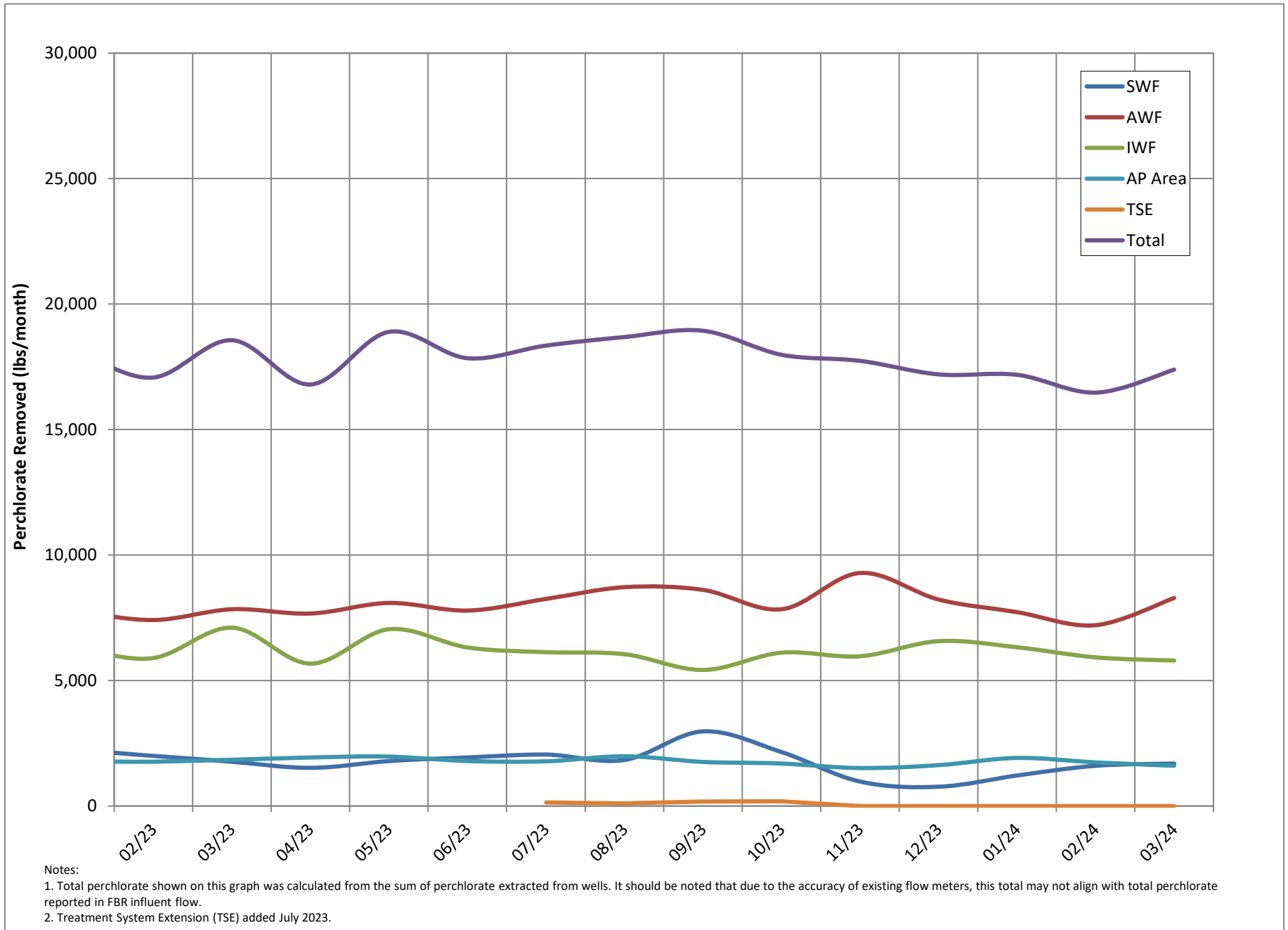


Figure 2 - Historical Perchlorate Mass Removed From Environment



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)	30-Day Avg. (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)	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 2024	1.76	1.85	ND (<1.6)	0.012		6.98	7.21	ND (<0.150)	12	320	1200	1.8	20	280	1.8	5.3			4.7	13	63	
February 2024	1.35	1.88	ND (<1.6)	0.009		7.20	7.26	ND (<0.150)	35	310	1900	5.9	18	210	0.4	4.9			ND (<5.0)	ND (<5.0)	29	3,900
March 2024	1.59	1.85	ND (<1.6)	0.011		7.04	7.40	ND (<0.150)	59	430	1000	0.87	16	210	0.8	5.8			ND (<5.0)	ND (<5.0)	34	
April 2024 (month to date)	1.68	1.76	ND (<1.6)	0.011		7.09	7.10	0.414	57	1100	420	0.98	24	310	2.0	2.9			ND (<5.0)	ND (<5.0)	33	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)	0.8	0.012	1/17/2024	7.01	ND (<0.150)	12	320	1200	0.80	--	28	358	--	0.071	0.9	--	0.47	6.0	1/17/2024	13 ¹	13	171
1-21 - 1-27	1/27/2024	ND (<1.6)	0.8	0.012	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
1/28 - 2/3	2/3/2024	ND (<1.6)	0.8	0.011	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
2/4 - 2/10	2/10/2024	ND (<1.6)	0.8	0.011	2/7/2024	7.20	ND (<0.150)	35	290	1900	0.81	--	23	279	--	0.051	0.6	--	0.69 ²	8.3	2/7/2024	ND (<5.0)	2.5	30
2/11 - 2/17	2/17/2024	ND (<1.6)	0.8	0.009	2/14/2024	7.24	ND (<0.150)	8.8	310	1100	5.9	--	20	240	ND(<0.039)	0.0195	0.2	--	0.51	6.1	2/14/2024	ND (<5.0)	2.5	30
2/18 - 2/24	2/24/2024	ND (<1.6)	0.8	0.010	2/22/2024	7.24	ND (<0.150)	18	220	950	0.63	--	13	191	ND(<0.039)	0.0195	0.3	--	0.17	2.5	2/22/2024	ND (<5.0)	2.5	37
2/25 - 3/2	3/2/2024	ND (<1.6)	0.8	0.005	2/29/2024	7.26	ND (<0.150)	15	160	1800	1.50	--	16	114	--	0.045	0.3	--	0.36	2.6	2/29/2024	ND (<5.0)	2.5	18
3/3 - 3/9	3/9/2024	ND (<1.6)	0.8	0.009	3/7/2024	7.40	ND (<0.150)	17	290	440	0.69	--	14	140	--	0.059	0.6	--	1.5 ³	15	3/7/2024	ND (<5.0)	2.5	25
3/10 - 3/16	3/16/2024	ND (<1.6)	0.8	0.011	3/13/2024	7.11	ND (<0.150)	15	430	710	0.80	--	25	358	--	0.13	1.9	--	0.40	5.7	3/13/2024	ND (<5.0)	2.5	36
3/17 - 3/23	3/23/2024	ND (<1.6)	0.8	0.012	3/20/2024	7.04	ND (<0.150)	25	430	1000	0.84	--	11	165	ND(<0.039)	0.0195	0.3	--	0.046	0.7	3/20/2024	ND (<5.0)	2.5	37
3/24 - 3/30	3/30/2024	ND (<1.6)	0.8	0.012	3/27/2024	7.37	ND (<0.150)	59	430	940	0.87	--	12	181	ND(<0.039)	0.0195	0.3	--	0.15	2.3	3/27/2024	ND (<5.0)	2.5	38
3/31 - 4/6	4/6/2024	ND (<1.6)	0.8	0.011	4/3/2024	7.09	ND (<0.150)	44	1100	420	0.98	--	19	264	--	0.15	2.1	--	0.21	2.9	4/3/2024	ND (<5.0)	2.5	35
4/7 - 4/13	4/13/2024	NA	NA	NA	4/10/2024	7.10	0.414	57	970	330	NA	--	28	346	--	0.16	2.0	--	0.23	2.8	4/10/2024	ND (<5.0)	2.5	31

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, 34 mg/L, and 2.5 mg/L (<5.0 mg/L); rerun was analyzed past hold time, and duplicates didn't match.

² Average of 0.73 mg/L and 0.64 mg/L.

³ Average of 1.6 mg/L and 1.3 mg/L.

Last Updated: April 19, 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			
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			
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			
3.03		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			
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			
4.07		Interceptor Booster Pump A	Running			
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			Pulled and inspected N. W pond corner pump.
5.02	PID10A	Pond Water Pump - P101A	Running			
5.03	PID10A	Pond Water Pump - P101B	Standby			
5.04	PID10A	Equalization Tanks	In operation			

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 ¹	Checked	Criticality ²	Notes
5.05	PID10A	Area in and Around EQ	In operation			
5.06	PID10A	Raw Water Feed Pump - P102A	Standby			
5.07	PID10A	Raw Water Feed Pump - P102B	Running			
5.08	PID10A	F-101 Filters	Running			
5.09	PID10B	Carbon Absorber - LGAC 201A	Off			
5.10	PID10B	Carbon Absorber - LGAC 201B	Off			
5.11	PID10B	Carbon Absorber - LGAC 201C	Off			
6		First Stage FBRs A, 1 & 2				
6.01	PID14	FBR A	Offline			
6.02	PID14	Separator Tank - 1401	Offline			
6.03	PID14	Media Return Pump - P 1401	Offline			
6.04	PID14	P1401A	Offline			
6.05	PID01A	P1401B	Offline			
6.06	PID01A	FBR 1	Running			
6.07	PID02A	FBR 2	Standby			
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	Running			
6.12	PID01A	First Stage FRB Pump - P101A	Standby			
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	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			
7.02	PID01B	FBR 4	Running			Refurbished internal piping.

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 4 = Low - Minor repairs that in no way alter the performance of the plant

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			
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	Off			
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			
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			Rebuilt pump and installed.
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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 4 = Low - Minor repairs that in no way alter the performance of the plant

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	In operation			
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			Installed new 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	Standby			
11.03	PID06	Effluent Pump - P602	Running			
12		Sand Filter System				
12.01	PID17	Sand Filter	In operation			
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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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	Standby			Rebuilt AOD press pump.
14.07	PID09	West Press	Standby		4	
14.08	PID09	East Press	Running		4	
14.09	PID09	Filtrate Tank	In operation			
14.10	PID09	Filtrate Tank Effluent (recycle) Pump - P903	Running			Installed new hoses.
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			Installed new airline for chemical transfer.
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			

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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			
		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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