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:	November 20, 2020
Subject:	NERT – GWETS Operation Monthly Report – October 2020

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 2020.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS and ion exchange (IX) system normally in October 2020. 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 182 gallons per minute (gpm). The flow rate to the FBR plant averaged approximately 1,029 gpm during October 2020. At the end of the month, the GW-11 Pond volume was at 34.8 million gallons (MG), which would allow 19.2 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 by 0.4 MG from the end of September 2020. Figure 1 in this report depicts the actual GW-11 pond volumes and additional storage available.

The influent perchlorate concentration to the IX system averaged 0.29 mg/L for the month. The influent perchlorate concentration to the FBR plant averaged 64 mg/L for the month, with a maximum concentration of 77 mg/L. In comparison, the influent perchlorate concentration to the FBRs for the month of September 2020 averaged 59 mg/L, with a maximum concentration of 63 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 GW-11 pond level maintenance as well as extraction well short-term shutdown events. Below is a description of the events that occurred:

Diversion Events / Well Shutdowns

- Effluent diversion to GW-11 occurred on October 4, 2020 from 11:30pm to October 5, 2020 5:04am due to low GW-11 pond level. Approximately 365,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on October 9, 2020 from 11:49pm to October 10, 2020 4:34am due to low GW-11 pond level. Approximately 305,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on October 13, 2020 from 10:46pm to October 14, 2020 2:45am due to low GW-11 pond level. Approximately 250,000 gallons of water were diverted to GW-11.
- Effluent diversion to GW-11 occurred on October 16, 2020 from 9:38pm to October 17, 2020 2:55am due to low GW-11 pond level. Approximately 338,000 gallons of water were diverted to GW-11.
- Well Shutdown of IWF occurred on October 19, 2020 from 7:37am to October 19, 2020 7:47am due to ongoing maintenance activities at the GWTP influent tank. Maintenance was completed and the well field was brought back online.
- Well Shutdown of IWF occurred on October 22, 2020 from 8:15pm to October 22, 2020 8:40pm due to a power surge. The switches on the circuit breakers were reset and the well field was brought back online.
- Effluent diversion to GW-11 occurred on October 25, 2020 from 12:32am to October 25, 2020 5:22am due to low GW-11 pond level. Approximately 302,000 gallons of water were diverted to GW-11.
- Well Shutdown of IWF occurred intermittently on October 25, 2020 from 10:55am to 11:00am, 1:28pm to 1:33pm, 3:30pm to 3:35pm, 4:26pm to 4:32pm due to ongoing maintenance activities on the discharge piping for pump P-1A. Bypassing the Degassifier tank changed the flow characteristics for the GWTP. Adjustments were made and the well field was brought back online.
- Influent diversion to GW-11 occurred on October 26, 2020 from 2:19am to 2:59am due to electrical issues brought on by high wind conditions. Approximately 42,000 gallons of water were diverted to GW-11.
- Well Shutdown of ART-9 occurred on October 26, 2020 from 10:37am to 10:57am due to maintenance activities on the discharge piping. Maintenance was completed and the well was brought back online.
- Influent diversion to GW-11 occurred on October 27, 2020 from 5:42am to 2:30pm due to a pre-planned maintenance event. Approximately 130,000 gallons of water were diverted to GW-11.

- Well Shutdown of IWF occurred on October 27, 2020 from 6:25am to 7:52am due to a pre-planned maintenance event. Maintenance was completed and the well field was brought back online.

3. Spills

There were no reportable spills in the month of October.

4. Maintenance

- Major maintenance performed by ETI in the month included:

I. Replaced the wires at the South West pond corner for GW-11.
II. Replaced the O-ring on the Ferrous Sulfate feed check valve.
III. Replaced the piping on ART-8A on the sample port and installed a new bracket for bracing.
IV. Replaced the pressure switch on the FBR 2 recycle line.
V. Installed a new slam valve on the FBR 7 recycle line.
VI. Installed a splash guard around the containment at the GWTP sump pit area.
VII. Replaced the D-1 press feed pump.
VIII. Rebuilt the bed height pump for FBR 1.
IX. Installed a new seal water solenoid on FBR 6.
X. Replaced the power supply on the west press control panel.

- Preventative Maintenance completed or being performed by ETI in the month included:

I. Drained and inspected the DAF's, drained and inspected the Aeration tank, drained and inspected the 601 tank, and removed solids from the GWTP Influent tank.
II. Changed the oil at the Lift Station 2 turbine motor.
III. Verified the flow on the PC wells at the Seep Well Field.
IV. Cleaned out the combo valves on the effluent pipeline.
V. Oiled and greased the recycle motors and pumps.
VI. Removed the solids from the degassifier tank at the GWTP.
VII. Greased and inspected the front gate.

GWETS Upgrades and Facility Projects

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

GWETS Extension –The signed Work Authorization for engineering and fabrication of the GWETS Extension was returned to the Trust on January 28, 2020. Orders have been placed for the major equipment for the GWETS Extension with deliveries expected during the third and fourth quarters of 2020. Envirogen is currently awaiting Trust comment on the O&M Work Authorization proposal for the GWETS Extension.

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 I Groundwater Extraction and Treatment System I 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]	744 [3]	8.8	0.0022	0.0027
AWF Total Extraction[1]	471 [3]	67	0.14	0.14
IWF Total Extraction[1]	61 [3]	433	6.3	6.4
AP Area Total Extraction[1]	9.5 [3]	845	0.16	0.15
GWTP Effluent[2]	62	498	0.48	ND
GW-11 Influent[1]	8.2	73	0.31	0.024
FBR Influent[2]	1,029	64	0.023	0.014

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 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	2,437	0.62	0.75
AWF Total Extraction	11,757	24	25
IWF Total Extraction	9,877	143	146
AP Area Total Extraction	2,990	0.57	0.54
GWTP Effluent	11,498	11	ND
GW-11 Influent	223	0.95	0.073
FBR Influent[1]	24,386	8.7	5.3

Notes:

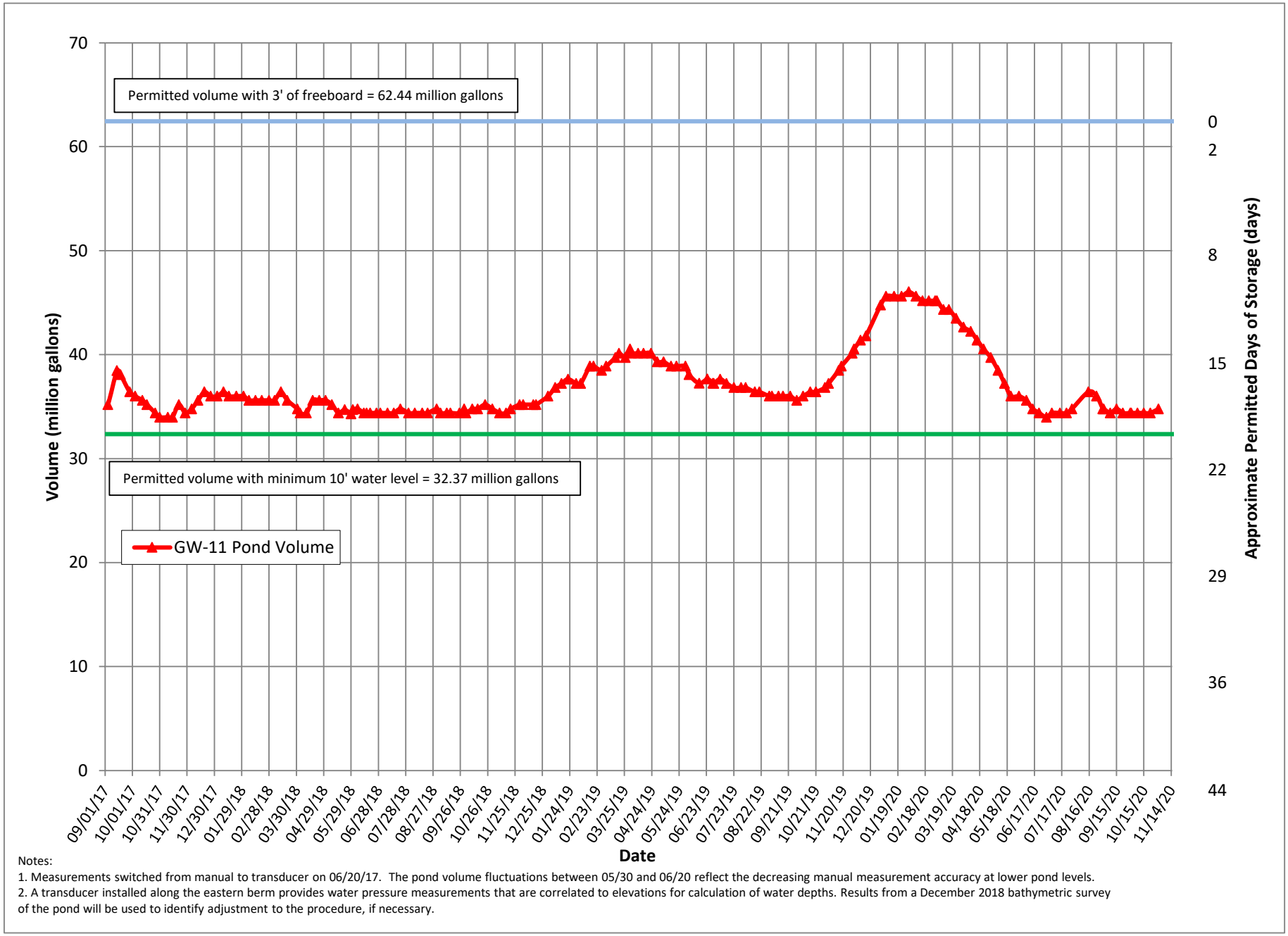
TR = Total Recoverable; NA = Not Analyzed.

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 10/31/2020

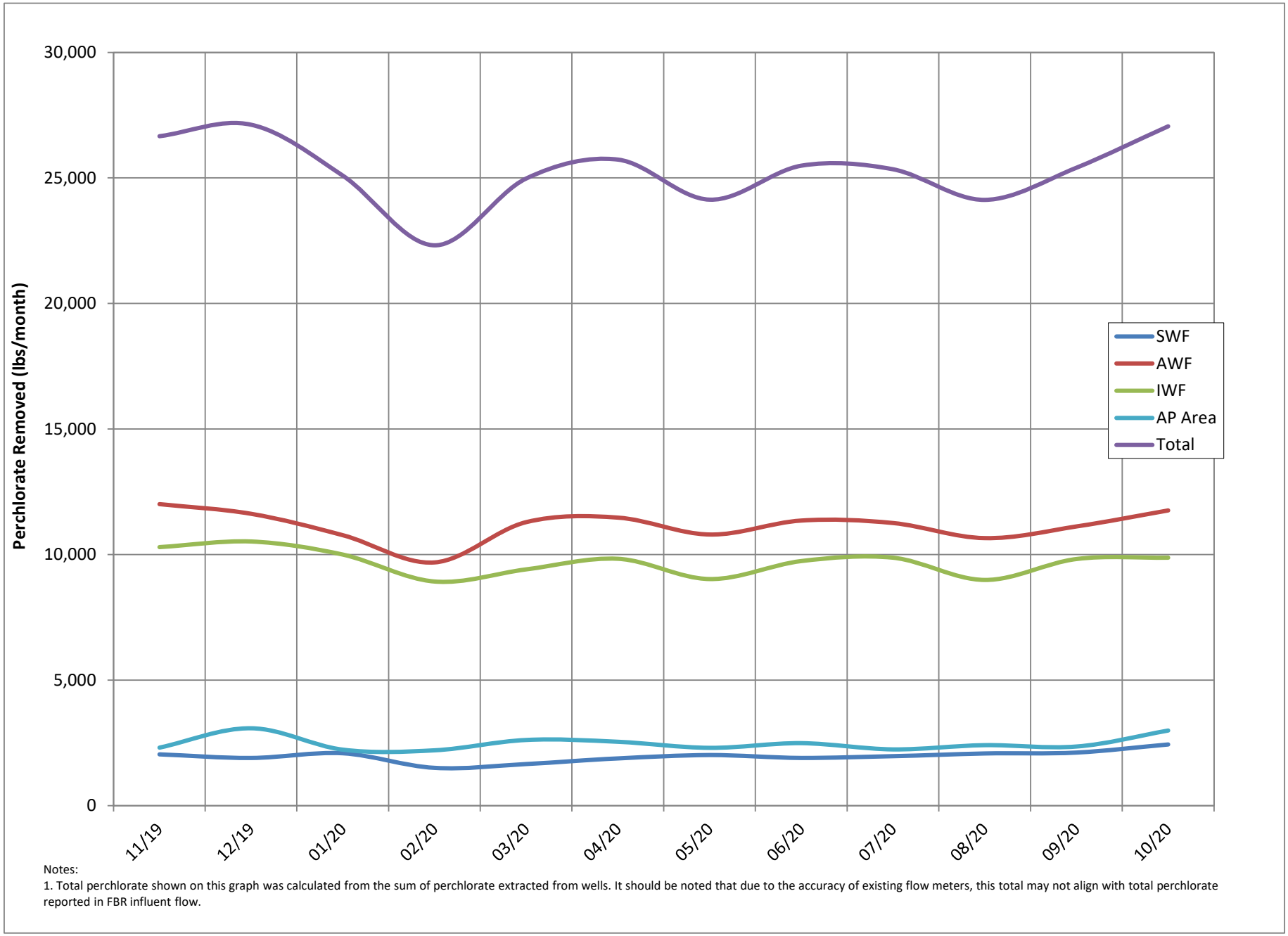


Notes:

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

Figure Updated: 11/6/2020

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.

Figure Updated: 11/20/2020

Attachment A

NPDES Tracking Sheet (Prepared by Ramboll)

NPDES Permit NV0023060 - Analytes with Numerical Discharge Limits

WORKING TRACKING SPREADSHEET
DRAFT - NOT TO BE SUBMITTED TO AGENCY

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. (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 2020	1.82	1.89	3	0.04	6.6	6.9	1.1	19	290	540	0.85	5.0	80	6		3.3				1.3	2.1	20								
February 2020	1.85	1.91	ND (<2.5)	0.019	6.7	6.9	ND (<0.25)	7.6	170	980	1.1	4.9	70	2.3		1.6				ND (<2.0)	ND (<2.0)	16	4,100							
March 2020	1.86	1.91	ND (<2.5)	0.019	6.6	7.1	0.36	5.4	220	1,100	ND (<0.50)	7	110	1.3		1.7				ND (<2.0)	ND (<2.0)	15								
April 2020	1.85	1.88	ND (<2.5)	0.019	6.6	7.1	ND (<0.25)	6.4	160	1,300	ND (<0.50)	12	180	1.0		1.3				1.6	2.6	24								
May 2020	1.81	1.91	ND (<2.5)	0.019	6.5	7.0	ND (<0.25)	7.4	160	830	11	9	130	10		2.4				1.6	3.3	24	4,500							
June 2020	1.73	1.88	ND (<2.5)	0.018	6.7	7.0	ND (<0.25)	7.5	160	820	1.1	8	120	4.5		1.3				2.0	4.0	27								
July 2020	1.62	1.87	ND (<2.5)	0.017	6.5	7.1	ND (<0.25)	5.8	150	930	1.6	7	80	8		2.0				1.9	3.8	29								
August 2020	1.65	1.85	ND (<2.5)	0.017	6.7	7.3	ND (<0.25)	17	100	1,000	6.4	8	90	7		1.3				ND (<2.0)	ND (<2.0)	13	4,100							
September 2020	1.74	1.90	1.7	0.025	6.7	7.2	ND (<0.25)	7.0	120	1,100	2.1	8	120	1.4		1.5				2.5	ND (<5.0)	35								
October 2020 (month to date)	1.72	1.85	0.63	0.009	6.7	7.3	ND (<0.25)	22	120	970	0.46	16	210	1.9		4.3				ND (<5.0)	ND (<5.0)	38	NA							
November 2020 (month to date)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA				NA	NA	NA								

Daily Grab Sample Dates	Composite Sample Date		µg/L	lbs/day	Sample Date	S.U.	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	lbs/day	mg/L		lbs/day		mg/L	lbs/day	Sample Date	mg/L		lbs/day	Sample Date	mg/L
12/29 - 1/4	1/4/2020	4.4	4.4	0.063	12/30/2019	6.6	ND (<0.25)	4.6	300	63	4.5	14	196	--	4.5	63	--	0.27	3.8	12/30/2019	ND (<2.0)	1.0	14		
1/5 - 1/11	1/11/2020	12, <0.079	6	0.09	1/6/2020	6.6	ND (<0.25)	2.7	290	58	0.85	4.9	70	--	0.85	12	--	0.22	3.1	1/8/2020	ND (<2.0)	1.0	15		
1/12 - 1/18	1/18/2020	ND (<2.5)	1.3	0.019	1/13/2020	6.6	ND (<0.25)	19	210	66	ND (<0.50)	3.2	49	--	0.25	3.8	ND(<0.025)	0.013	0.19	1/15/2020	ND (<2.0)	1.0	16		
1/19 - 1/25	1/25/2020	ND (<2.5)	1.3	0.019	1/20/2020	6.9	ND (<0.25)	5.8	210	140	ND (<0.50)	9.2	142	--	0.16	2.5	--	0.12	1.9	1/22/2020	2.1		32		
1/26 - 2/1	2/1/2020	ND (<2.5)	1.3	0.019	1/27/2020	6.8	1.1	ND (<2.5)	200	540	ND (<0.50)	2.7	41	--	0.35	5.4	--	0.51	7.8	1/29/2020	ND (<2.0)	1.0	15		
2/2 - 2/8	2/8/2020	ND (<2.5)	1.3	0.019	2/3/2020	6.9	ND (<0.25)	3.3+ 3.0	150	980	1.1	6.7	103	--	0.11	1.7	--	0.093	1.4	2/6/2020	ND (<2.0)	1.0	16	2/4/2020	4,100
2/9 - 2/15	2/15/2020	ND (<2.5)	1.3	0.019	2/10/2020	6.7	ND (<0.25)	7.6	170	820	ND (<0.50)	6.4	97	--	0.18	2.7	--	0.095	1.4	2/12/2020	ND (<2.0)	1.0	15		
2/16 - 2/22	2/22/2020	ND (<2.5)	1.3	0.019	2/17/2020	6.9	ND (<0.25)	4.5	160	510	ND (<0.50)	3.0	46	--	0.15	2.3	--	0.12	1.8	2/19/2020	ND (<2.0)	1.0	15		
2/23 - 2/29	2/29/2020	ND (<2.5)	1.3	0.020	2/24/2020	6.8	ND (<0.25)	3.6	140	770	ND (<0.50)	3.5	54	--	0.17	2.6	--	0.11	1.7	2/26/2020	ND (<2.0)	1.0	16		
3/1 - 3/7	3/7/2020	ND (<2.5)	1.3	0.020	3/2/2020	7.0	ND (<0.25)	4.8	190	920	ND (<0.50)	5.8	91	--	0.17**	2.7	--	0.13	2.0	3/4/2020	ND (<2.0)	1.0	15		
3/8 - 3/14	3/14/2020	ND (<2.5)	1.3	0.019	3/9/2020	6.6	ND (<0.25)	4.7	220	890	ND (<0.50)	6.1	96	--	0.12**	1.9	--	0.11	1.7	3/12/2020	ND (<2.0)	1.0	15		
3/15 - 3/21	3/21/2020	ND (<2.5)	1.3	0.019	3/16/2020	7.1	ND (<0.25)	5.4	190	1,100	ND (<0.50)	11	173	ND (<0.10)	0.05**	0.79	--	0.077	1.2	3/18/2020	ND (<2.0)	1.0	16		
3/22 - 3/28	3/28/2020	ND (<2.5)	1.3	0.019	3/23/2020	6.7	ND (<0.25)	3.6	220	1,000	ND (<0.50)	6.2	97	--	0.14**	1.5	--	0.13	2.0	3/25/2020	ND (<2.0)	1.0	15		
3/29 - 4/4	4/4/2020	ND (<2.5)	1.3	0.019	3/30/2020	6.6	0.36	3.5	140	740	ND (<0.50)	5.5	86	ND (<0.10)	0.05**	0.76	--	0.082	1.3	4/1/2020	ND (<2.0)	1.0	15		
4/5 - 4/11	4/11/2020	ND (<2.5)	1.3	0.019	4/6/2020	7.1	ND (<0.25)	6.2	160	1,200	ND (<0.50)	12	187	--	0.19**	1.9		0.12	1.9	4/8/2020	2.6		41		
4/12 - 4/18	4/18/2020	ND (<2.5)	1.3	0.019	4/13/2020	7.1	ND (<0.25)	6.4	110	1,300	ND (<0.50)	14	217	ND (<0.10)	0.05**	0.77	--	0.063	1.0	4/15/2020	2.2		34		
4/19 - 4/25	4/25/2020	ND (<2.5)	1.3	0.020	4/20/2020	6.9	ND (<0.25)	5.6	150	1,200	ND (<0.50)	13	203	ND (<0.10)	0.05**	0.78	--	0.084	1.3	4/22/2020	ND (<2.0)	1.0	16		
4/26 - 5/2	5/2/2020	ND (<2.5)	1.3	0.019	4/27/2020	6.6	ND (<0.25)	3.3	130	860	ND (<0.50)	8.4	129	ND (<0.10)	0.05**	0.77	--	0.074	1.1	4/29/2020	ND (<2.0)	1.0	15		
5/3 - 5/9	5/9/2020	ND (<2.5)	1.3	0.019	5/4/2020	7.0	ND (<0.25)	7.4+ 4.0	160	440	ND (<0.50)	5.1	81	--	0.15**	10.1	--	0.083	1.3	5/6/2020	ND (<2.0)	1.0	16	5/7/2020	4,500
5/10 - 5/16	5/16/2020	ND (<2.5)	1.3	0.020	5/11/2020	6.5	ND (<0.25)	6.8	150	690	ND (<0.50)	9.4	146	--	0.14	2.2	--	0.12	1.9	5/13/2020	ND (<2.0)	1.0	16		
5/17 - 5/23	5/23/2020	ND (<2.5)	1.3	0.019	5/18/2020	7.0	ND (<0.25)	4.6	140	600	1.9	6.1	94	--	1.9	29	--	0.20	3.1	5/20/2020	ND (<2.0)	1.0	15		
5/24 - 5/30	5/30/2020	ND (<2.5)	1.3	0.017	5/26/2020	7.0	ND (<0.25)	6.6	120	830	11	14	208	--	0.51	7.6	--	0.22	3.3	5/27/2020	3.3		50		
5/31 - 6/6	6/6/2020	ND (<2.5)	1.3	0.018	6/1/2020	6.8	ND (<0.25)	7.5	110	740	0.58	11	162	--	0.58	8.5	--	0.12	1.8	6/3/2020	2.1		32		
6/7 - 6/13	6/13/2020	ND (<2.5)	1.3	0.018	6/9/2020	6.7	ND (<0.25)	3.8	110	410	ND (<0.50)	4.6	69	--	0.18	2.7	--	0.073	1.1	6/10/2020	ND (<2.0)	1.0	15		
6/14 - 6/20	6/20/2020	ND (<2.5)	1.3	0.019	6/15/2020	6.9	ND (<0.25)	5.3	150	820	1.1	7.8	117	--	0.16	2.4	--	0.013	0.19	6/17/2020	ND (<2.0)	1.0	15		
6/21 - 6/27	6/27/2020	ND (<2.5)	1.3	0.017	6/22/2020	6.9	ND (<0.25)	7.3	160	780	ND (<0.50)	8.4	125	--	0.26	3.9	--	0.12	1.8	6/24/2020	4.0		44		
6/28 - 7/4	7/4/2020	ND (<2.5)	1.3	0.017	6/29/2020	7.0	ND (<0.25)	5.9	99	710	ND (<0.50)	9.9	145	--	0.33	4.8	--	0.12	1.8	7/1/2020	ND (<2.0)	1.0	15		
7/5 - 7/11	7/11/2020	ND (<2.5)	1.3	0.017	7/6/2020	7.0	ND (<0.25)	5.8	87	930	1.6	12	146	--	1.6	20	--	0.25	3.1	7/8/2020	ND (<2.0)	1.0	15		
7/12 - 7/18	7/18/2020	ND (<2.5)	1.3	0.017	7/13/2020	6.5	ND (<0.25)	4.1	120	680	ND (<0.50)	7.2	84	--	0.30	3.5	--	0.089	1.04	7/15/2020	2.5		38		
7/19 - 7/25	7/25/2020	ND (<2.5)	1.3	0.016	7/20/2020	7.1	ND (<0.25)	4.7	110	470	0.51	3.9	60	--	0.51	7.8	--	0.096	1.5	7/22/2020	3.8		59		
7/26 - 8/1	8/1/2020	ND (<2.5)	1.3	0.017	7/27/2020	7.1	ND (<0.25)	ND (<2.5)	150	510	ND (<0.50)	3.2	48	--	0.16	2.4	--	0.150	2.2	7/29/2020	ND (<2.0)	1.0	15		
8/2 - 8/8	8/8/2020	ND (<2.5)	1.3	0.015	8/3/2020	6.7	ND (<0.25)	3.6	94	730	ND (<0.50)	8.1	98	--	0.20	2.4	--	0.077	0.93	8/5/2020	ND (<2.0)	1.0	12		
8/9 - 8/15	8/15/2020	ND (<2.5)	1.3	0.016	8/10/2020	6.9	ND (<0.25)	6.0* 9.6	100	1,000	6.4	19	170	--	6.4**	57	--	0.35	3.1	8/12/2020	ND (<2.0)	1.0	10	8/10/2020	4,100
8/16 - 8/22	8/22/2020	ND (<2.5)	1.3	0.019	8/17/2020	7.3	ND (<0.25)	17	85	88	ND (<0.50)	2.8	43	--	0.38**	5.8	--	0.11	1.7	8/19/2020	ND (<2.0)	1.0	15		
8/23 - 8/29	8/29/2020	ND (<2.5)	1.3	0.018	8/24/2020	6.8	ND (<0.25)	6.0	57	350	1.1	3.9	60	ND (<0.10)	0.05**	0.77	--	0.039	0.60	8/26/2020	ND (<2.0)	1.0	15		
8/30 - 9/5	9/5/2020	ND (<2.5)	1.3	0.019	8/31/2020	6.9	ND (<0.25)	4.4	81	610	1.2	6.3	96	--	0.13**	2.0	ND(<0.025)	0.013	0.19	9/2/2020	4.3		66		
9/6 - 9/12	9/12/2020	1.2	1.2	0.016	9/9/2020	6.7	ND (<0.25)	4.0	110	530	2.1	6.6	72	--	0.15	1.6	ND(<0.025)	0.013	0.14	9/9/2020	ND (<2.0)	1.0	11		
9/13 - 9/19	9/19/2020	3.9	3.9	0.059	9/14/2020	6.8	ND (<0.25)	5.4	100	810	ND (<0.50)	7.1	108	--	0.11	1.7	--	0.13	2.0	9/16/2020	2.4		36		
9/20 - 9/26	9/26/2020	1.5	1.5	0.022	9/21/2020	6.9	ND (<0.25)	7.0	120	1,100	ND (<0.50)	12	186	--	0.10	1.6	--	0.13	2.0	9/23/2020	ND (<2.0)	1.0	15		
9/27 - 10/3	10/3/2020	ND (<1.0)	0.5	0.0074	9/28/2020	7.2	ND (<0.25)	4.5	110	670	ND (<0.50)	6.2	95	ND (<0.10)	0.05	0.77	--	0.12	1.8	9/30/2020	4.0		48		
10/4 - 10/10	10/10/2020	0.76	0.76	0.011	10/5/2020	7.0	ND (<0.25)	3.0	88	700	0.30	22	270	--	0.11	1.3	--	0.27	3.3	10/7/2020	ND (<5.0)	2.5	38		
10/11 - 10/17	10/17/2020	ND (<1.0)	0.5	0.0073	10/12/2020	7.3	ND (<0.25)	0.49	97	780	0.30	12	184	--	0.15	2.3	--	0.34	5.2	10/14/2020	ND (<5.0)	2.5	39		
10/18 - 10/24	10/24/2020	NA	NA	NA	10/19/2020	6.7	ND (<0.25)	22	120	540	0.21	ND(<10)	5	75	--	0.080	1.2	--	0.29	4.4	10/21/2020	ND (<5.0)	2.5	38		
10/25 - 10/31	10/31/2020	NA	NA	NA	10/26/2020	6.8	ND (<0.25)	1.6	78	970	0.46	26	301	--	0.24	2.8	--	0.36	4.2	10/28/2020	ND (<5.0)	2.5	NA		
					11/2/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11/4/2020	NA		NA		

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

+ Additional Quarterlv samole collected this week.

** Additional samples were collected and analyzed for ammonia during this week and results were included in the 30-day average loading calculation.

NA = Not Available To Date

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

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

-- = Analyte detected; see column adjacent to right

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

Last Updated: November 6, 2020

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		3	Repaired a minor leak on ART-9 and replaced the piping on the sample tap on ART-8. Installed a bracket on the piping to help secure the turbulence.
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		3	Replaced the O-ring on the ferrous check ball.
4.03		*Polymer Feed System*	Running		3	Replace the pump end.
4.04		*Clarifier*	In operation			
4.05		*Filter Press*	Running			
4.06		*GWTP Effluent Tank*	In operation		2	Removed the solids and reset the level indicator.
4.07		*Interceptor Booster Pump A*	Running			
4.08		*Interceptor Booster Pump B*	Standby		1	During the down day the suction piping was removed and cleaned out.
4.09		*Area In And Around GWTP*	Running			
5		**Equalization Area and GW-11 Pond**				
5.01	PID10A	*Pond GW-11*	In operation		3	Replaced the wiring on the SW pond corner motor electrical leads.
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		3	Replaced the 6" butterfly valve for the feed flow diversion
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*			2	Replaced the pressure switch and tubing suppling the pressure. Replaced the seal water solenoid.
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			
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			

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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			
7.05	PID01B	*First Stage FBR Pump - P1013*	Running			
7.06	PID01B	*First Stage FRB Pump - P1014*	Running		3	Replaced the 6" butterfly valve for the feed flow diversion
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			
8.02	PID03A	*FBR 6*	Running		3	Replaced the 6" butterfly valve for the feed flow diversion
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		2	Replaced the seal water solenoid.
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		2	Replaced the slam valve on the recycle line with new airline fittings and bypass valves.
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
10		**Aeration and DAF System**				
10.01	PID04	*Aeration Tank*	In operation		1	The aeration was drained and inspected on the controlled down day.
10.02	PID04	*Aeration Blower - B401*	Running			
10.03	PID04	*Bio filter*	In operation			
10.04	PID04	*Nutrient Solution*	Running			
10.05	PID04	*Bio filter Sump*				
10.06	PID04	*Nutrient Pump - P401*	Running			
10.07	PID04	*Bio filter Sump Pump - P402A*	Standby			
10.09	PID04	*Bio filter Blower*	Running			
10.10	PID05	*DAF Pressure Tanks*	In operation			
10.11	PID05	*DAF Vessel - D501*	Running		2	The vessel was taken offline to make a few patch repairs to the vessel, pressure wash and inspect, and adjust the skimmer system.
10.12	PID05	*DAF Pressure Pump - P501*	Running		2	The air was turned off to the system and the pipe nipples and valve was replaced.
10.13	PID05	*DAF Float Pump - P502*	Running			
10.14	PID05	*DAF Vessel - D551*	Running		2	The vessel was taken offline during the controlled down day to be cleaned and inspected. The vessel was brought 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		2	The tank was drained, cleaned and inspected during the controlled down day.
11.02	PID06	*Effluent Pump - P601*	Running			
11.03	PID06	*Effluent Pump - P602*	Standby			
12		**Sand Filter System**				

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
12.01	PID17	*Sand Filter*			2	The vessel was drained, and flushed down to the sand bed. The old air sparger system was removed and the vessel was inspected.
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			
14.05	PID09	*Filter Press Pump - P901*	Running			
14.06	PID09	*Filter Press Pump - P902*				
14.07	PID09	*West Press*	Standby			
14.08	PID09	*East Press*	Running			
14.09	PID09	*Filtrate Tank*	In operation			
14.10	PID09	*Filtrate Tank Effluent (recycle) Pump - P903*	Running			
		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		2	The hose connection from the tote to the feed pump was replaced.
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			

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Sub-System	P&ID	Description	Status[1]	Checked	Criticality[2]	Notes
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			
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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