ENVIROGEN TECHNOLOGIES

A Lifecycle Performance Company

To:	Nevada Division of Environmental Protection Nevada Environmental Response Trust
Cc:	Nevada Environmental Response Trust Stakeholders
From:	Jeff Lambeth, Director of Operations
Date:	July 20, 2016
Subject:	NERT – GWETS Operation Monthly Report – June 2016

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 June 2016.

Summary of GWETS Operation

Envirogen Technologies, Inc. (ETI) mechanically operated the GWETS normally in June 2016. The flow rate to the plant averaged approximately 929 gallons per minute (gpm) during June 2016. At the end of the month, the GW-11 Pond volume was at 43.1 million gallons (MG), which would allow 13.4 days of available additional storage in the event of an emergency plant shutdown with continued well field pumping. The water volume stored in the GW-11 Pond decreased approximately 0.8 MG from the end of May. Figure 1 in this report depicts the actual and projected GW-11 pond volumes and additional storage available.

The influent perchlorate concentration to the FBR plant averaged 76 mg/L for the month, with a maximum concentration of 82 mg/L.

Analytical data indicate that the permitted effluent discharges at GWETS Outfall 001 were within the NPDES permitted numerical discharge limits (Please see Attachment A, prepared by Ramboll Environ).

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.

Two Kingwood Place
700 Rockmead Drive, Suite 105
Kingwood, TX 77339

877.312.8950
www.envirogen.com

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 Pond**

    - GW-11 Pond Leak Detection System: There were no operational issues.

2. **Biological Plant**

    There were no significant Plant interruptions. There were three unplanned diversions for the month of June. Below is a description of the short duration events that occurred:

    - Diversion to GW11, June 9/10, 2016: The Plant was diverted to GW-11 as a precautionary measure due to low sulfides identified during the in-plant process control lab analysis. The plant was diverted at 11:00 PM and returned to the Wash June 10, at 1:30 AM after confirmation the plant was in compliance. The event lasted 2 ½ hours and 140,250 gallons were diverted to GW11.

    - Diversion to GW11, June 10, 2016: 9:14am to 9:56am due to maintenance on the effluent flow meter approximately 39,270 gallons diverted

    - Diversion to GW11, June 18, 2016: The Plant was diverted to GW-11 as a precautionary measure. The plant was diverted at 9:01 AM and returned to the Wash at 10:00 AM after confirmation the plant was in compliance. The event lasted 59 minutes and 57,443 gallons were diverted to GW11.

3. **Spills**

    - At approximately 8:45 AM PDT on June 3, 2016, Mr. Steve Clough of the Nevada Environmental Response Trust, was conducting his weekly inspections of the lift Stations and discovered a leak coming from the packing of the vertical turbine pump at Lift Station #1. By his estimation, approximately 1 quart of untreated water ran off the concreate wet well cover and onto the surface soil. This spill was reported to the NDEP Spill Hotline and assigned Spill Number 160603-01.

      Immediately following the notification from Mr. Clough, Envirogen personnel rotated to a backup, alternate pump to prevent further leakage to the ground until maintenance personnel could inspect and determine the corrective action. The pumps were switched at ~ 9:09 AM PDT.

      In response to this spill and to minimize their reoccurrence, the preventive measures that have been undertaken include:

        1. Upon discovery of the issue, the alternate vertical turbine pump at Lift Station #1 was activated and the leaking pump shut down.

2. An HPDE plastic liner and sand bags were placed along the North side of the concrete wet well pad as a containment mechanism to prevent dripping water being introduced to the local soil.
3. The turbine pump was inspected and the packing was replaced.

4. Maintenance

- Major maintenance performed by ETI in the month included:
    i. TK-3 Degassing tank. A patch was welded onto the bottom of the tank with some packing material to repair a ½" hole found on the base of the tank. The hole was likely caused from long term use of the tank with long exposure to corrosive material.
    ii. P-3011 - Media return pump. The pump was rebuilt with all new parts including a new shaft, cams, bearings, discs, and trunnions. A new pulley was also installed.
    iii. I-I - Interceptor well. The motor on this well burned out and was replaced.
    iv. F-101B Influent strainers. A new motor was installed and connected to the gear box that rotates the paddles for the self-cleaning strainers

- Preventative Maintenance completed or being performed by ETI in the month included:
    i. Plant air compressor maintenance performed by ETI contractor Ingersoll Rand.
    ii. Auto-dialer & alarms. Tested all critical alarms and detected no issues. All alarms in working order.
    iii. LS1 – Area. Built up berm and laid down HDPE liner with sand bags to stop possible leaking from the wet well.
    iv. Art-8 – Lift Station #3 extraction well. Discovered an unbalanced current error code on the on the motor saver. Replaced the motor saver, reconfigured the settings and returned the unit back to service.
    v. D-501-South – DAF. Took the unit out of service, drained and cleaned it. Completed visual inspection of the vessel and all working components. A few conduit clamps were tightened and the unit was put back in service.
    vi. D-551-North – DAF. Replaced pressurization tank and installed a new sight tube level indicator.
    vii. ORP Probes. Cleaned probes and standardized.

GWETS Upgrades and Facility Projects

The following is a summary of the initiatives in-progress during the reporting period at the direction of the Trust:

1. **AP-5 Solids Removal**
   Tetra Tech is moving forward with the construction of the three large tanks in order to wash and remove perchlorate salts, with eventual treatment of the perchlorate containing wash water in the GWETS.

2. **Lift Station #2 & #3**
   Currently progress is being made ordering long lead items including the turbine pumps. Installation will begin as soon as possible.

3. **Lift Station #1 upgrades**
   Documentation is being assembled by ETI Engineering for proposed upgrades to Lift Station #1.

4. **IWF well modifications**
   A proposal for the IWF is being prepared to address the Trust's desire to improve the flow meter accuracy and installation of VFDs on the extraction pumps.

5. **Spill containment enhancements**
   A proposal for secondary containment modifications is being prepared.

Equipment Availability Tracking

ETI operators continue to update the equipment tracking form on a weekly basis at a minimum, or whenever there is a change in the status of key equipment. During regular site visits, Tetra Tech field personnel verify the entries on the form, including both the operating status and confirmation of the inventory of required shelf spares. The equipment tracking form is included as Attachment B.

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[2]	556[1]	11	0.0007	0.0009
AWF Total Extraction[2]	281[1]	133	0.31	0.33
IWF Total Extraction[2]	71[1]	719	8.3	8.9
GWTP Effluent[3]	66	772	0.44	ND
GW-11 Influent[2]	622	88	0.086	0.018
GW-11 Effluent/ FBR Influent[3]	929	76	0.047	0.035

Notes:

TR = Total Recoverable; ND = not detectable above laboratory method detection limit (Chromium (VI) = 0.25 ug/L).

1: Sum of daily average flow for individual wells.

2: Perchlorate and chromium TR sampled monthly, values reported from TestAmerica.

3: Perchlorate, chromium TR and chromium (VI) sampled weekly, values reported from TestAmerica.

4: All concentrations reported are monthly flow weighted averages.

5: ND analytical values are treated as zero values in the flow weighted average calculations.

Table Updated: 7/13/2016

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	2,283	0.13	0.18
AWF Total Extraction	13,458	31	33
IWF Total Extraction	18,539	214	228
GWTP Effluent	18,489	10.5	ND
GW-11 Influent	19,766	19	4.0
GW-11 Effluent/FBR Influent	25,327	16	12

Notes:

TR = Total Recoverable.

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

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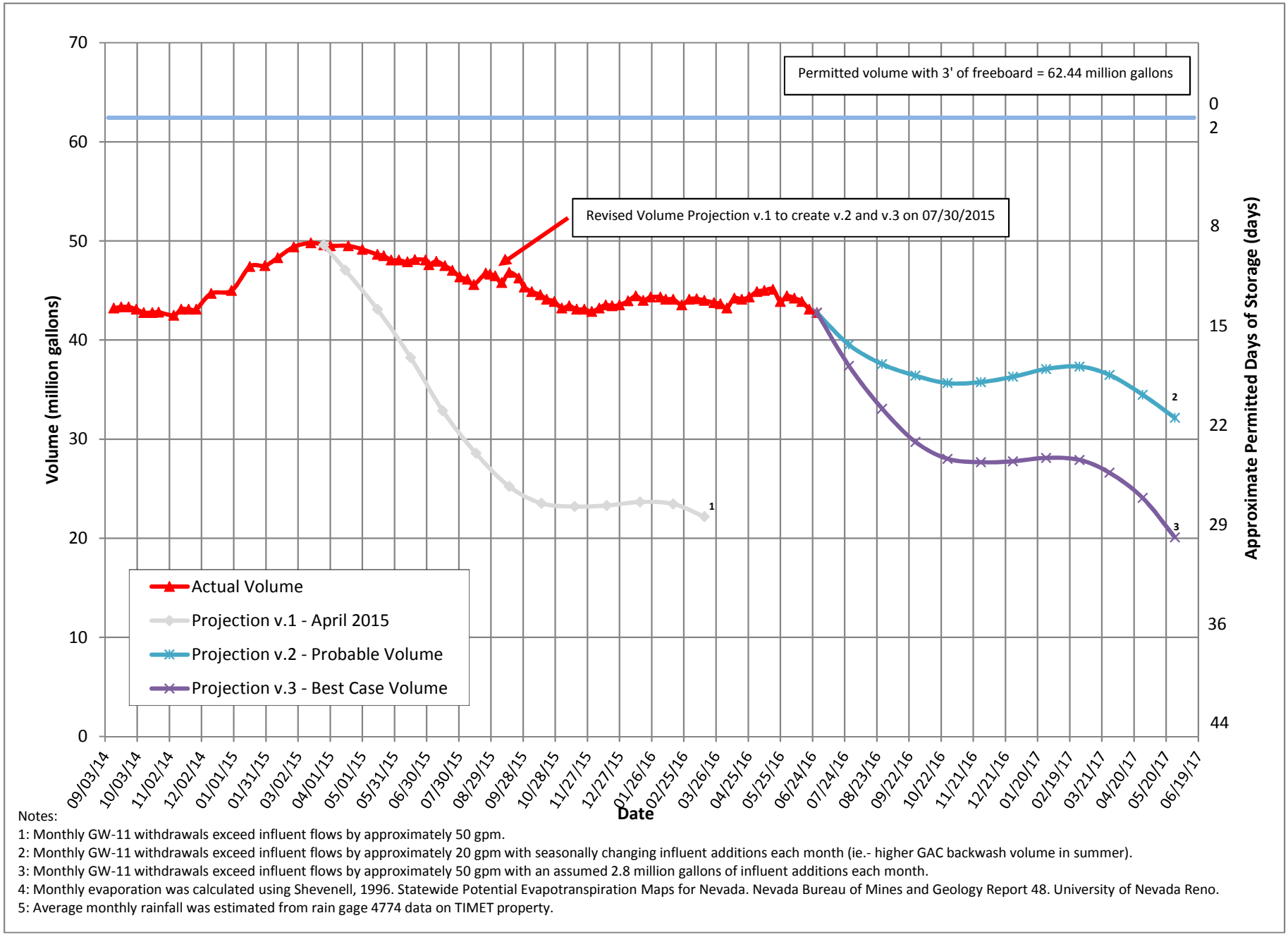
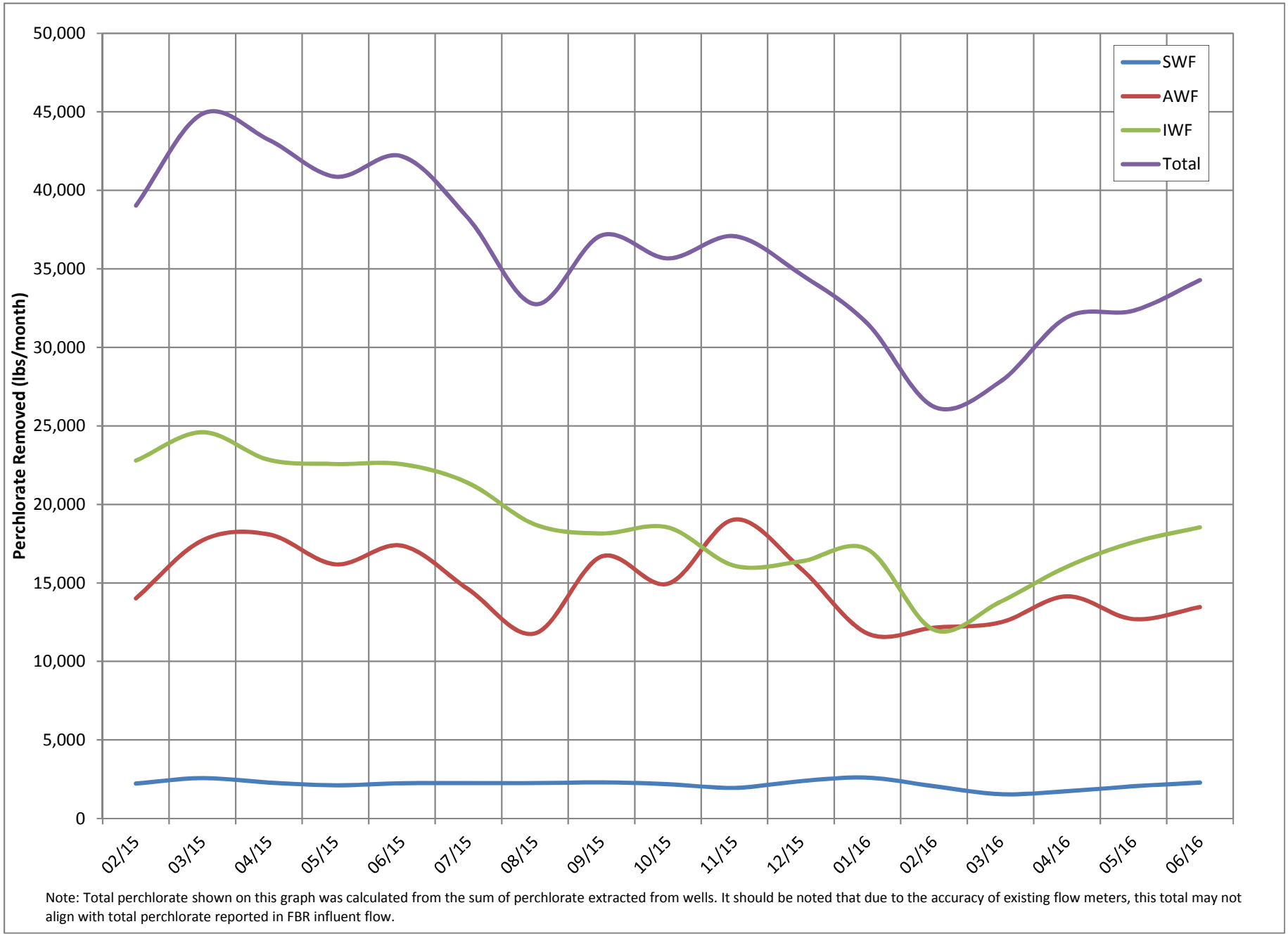
Figures
Operational Metrics

Nevada Environmental Response Trust
GW-11 Pond Volume
Projected v. Actual
Update 6/28/2016



Notes:
1: Monthly GW-11 withdrawals exceed influent flows by approximately 50 gpm.
2: Monthly GW-11 withdrawals exceed influent flows by approximately 20 gpm with seasonally changing influent additions each month (ie.- higher GAC backwash volume in summer).
3: Monthly GW-11 withdrawals exceed influent flows by approximately 50 gpm with an assumed 2.8 million gallons of influent additions each month.
4: Monthly evaporation was calculated using Shevenell, 1996. Statewide Potential Evapotranspiration Maps for Nevada. Nevada Bureau of Mines and Geology Report 48. University of Nevada Reno.
5: Average monthly rainfall was estimated from rain gage 4774 data on TIMET property.

Figure 2 - Historical Perchlorate Mass Flux



Note: 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.

Updated: 7/13/2016

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Attachment A
NPDES Tracking Sheet (Prepared by ENVIRON)

	Continuous		Daily samples, composited weekly		Weekly samples										Weekly samples, collected separately			Quarterly sample	
	Flow Rate		Perchlorate		pH	Hexavalent Chromium	Total Chromium	Total Suspended Solids (TSS)		Total Iron		Total Ammonia as N	Total Phosphorus as P		BOD_5 (inhibited)			Manganese	
	30-Day Avg. (MGD)	Daily Maximum (MGD)	30-Day Avg. (ug/L)	30-Day Avg. (lbs/day)	30-Day Avg. (S.U.)	Daily Max. (mg/L)	Daily Max. (mg/L)	30-Day Avg. (mg/L)	30-Day Avg. (lbs/day)	30-Day Avg. (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)	30-Day Avg. (mg/L)	30-Day Avg. (lbs/day)
	1.45	1.75	**18**	**0.22**	**6.5 to 9.0**	**0.01**	**0.1**	**135**	**1,634**	**10**	**121.03**	**40**	**20**		**25**	**40**	**254**	**5**	**60.52**
January 2016	1.28	1.39	1.3	0.013	6.89	0.00013	0.022	24	250	4.5	47	9	0.25		5.8	6.5	61	0.26	2.9
February 2016	1.34	1.41	1.3	0.014	6.96	0.00013	0.015	20	230	3.6	41	6	0.62		3.9	6.0	43		
March 2016	1.37	1.43	1.3	0.014	6.83	0.00013	0.027	21	240	3.1	35	13	1.9		4.3	5.8	49		
April 2016	1.36	1.44	1.3	0.014	6.84	0.00013	0.026	21	240	2.4	27	4.9	1.2		3.9	6.2	44		
May 2016	1.40	1.47	1.3	0.015	6.66	0.00013	0.019	22	260	2.7	32	3	0.8		4.7	6.7	54	0.22	2.5
June 2016 (month to date)	1.31	1.43	1.3	0.014	6.69	0.00013	0.0049	5.3	60	0.9	10	3.1	0.40		1.1	1.8	12		

Daily Grab Sample Dates	Composite Sample Date		ug/L	lbs/day	Sample Date	S.U.	mg/L	mg/L	mg/L	lbs/day	mg/L	lbs/day		mg/L	lbs/day		mg/L	lbs/day	Sample Date	mg/L		lbs/day	mg/L	lbs/day
1/3 - 1/9	1/9/2016	ND (<2.5)	1.3	0.013	1/4/2016	6.92	ND (<0.00025)	0.0070	18	193	3.9	42	--	0.32	3.4	--	0.028	0.30	1/6/2016	5.7		61		
1/10 - 1/16	1/16/2016	ND (<2.5)	1.3	0.013	1/11/2016	7.02	ND (<0.00025)	0.022	25	260	5.0	52	--	1.8	19	ND (<0.025)	0.013	0.13	1/13/2016	6.5		68		
1/17 - 1/23	1/23/2016	ND (<2.5)	1.3	0.013	1/19/2016	6.62	ND (<0.00025)	0.016	30	311	5.1	53	--	0.96	9.9	ND (<0.025)	0.013	0.13	1/20/2016	6.0		62		
1/24 - 1/30	1/30/2016	ND (<2.5)	1.3	0.014	1/25/2016	7.01	ND (<0.00025)	0.014	23	255	3.8	42	--	0.19	2.1	--	0.040	0.44	1/27/2016	4.8		53	0.26	2.9
1/31 - 2/6	2/6/2016	ND (<2.5)	1.3	0.014	2/1/2016	6.94	ND (<0.00025)	0.015	35	394	4.5	51	--	0.18	2.0	--	0.059	0.66	2/3/2016	6.0		68		
2/7 - 2/13	2/13/2016	ND (<2.5)	1.3	0.014	2/9/2016	7.18	ND (<0.00025)	0.013	16	181	3.8	43	--	0.98	11	--	0.059	0.67	2/10/2016	2.5		28		
2/13 - 2/20	2/20/2016	ND (<2.5)	1.3	0.014	2/15/2016	6.82	ND (<0.00025)	0.0092	14	158	2.8	32	--	0.33	3.7	--	0.048	0.54	2/17/2016	3.4		38		
2/21 - 2/27	2/27/2016	ND (<2.5)	1.3	0.014	2/22/2016	6.91	ND (<0.00025)	0.013	16	181	3.4	38	--	0.50	5.6	--	0.054	0.61	2/24/2016	3.5		40		
2/28 - 3/5	3/5/2016	ND (<2.5)	1.3	0.014	3/1/2016	7.11	ND (<0.00025)	0.0092	12	132	2.0	22	--	1.9	21	--	0.062	0.68	3/2/2016	3.3		36		
3/6 - 3/12	3/12/2016	ND (<2.5)	1.3	0.014	3/7/2016	6.91	ND (<0.00025)	0.012	18	202	2.6	29	--	1.4	16	--	0.096	1.1	3/9/2016	2.7		30		
3/13 - 3/19	3/19/2016	ND (<2.5)	1.3	0.015	3/14/2016	6.68	ND (<0.00025)	0.026	33	388	4.1	48	--	0.71	8.3	--	0.23	2.7	3/16/2016	5.8		68		
3/20 - 3/26	3/26/2016	ND (<2.5)	1.3	0.015	3/21/2016	6.81	ND (<0.00025)	0.023	22	256	4.1	48	--	0.45	5.2	--	0.32	3.7	3/23/2016	5.5		64		
3/27 - 4/2	4/2/2016	ND (<2.5)	1.3	0.014	3/28/2016	6.65	ND (<0.00025)	0.027	19	213	2.6	29	--	1.2	13	--	0.12	1.3	3/30/2016	4.1		46		
4/3 - 4/9	4/9/2016	ND (<2.5)	1.3	0.014	4/6/2016	6.71	ND (<0.00025)	0.013	14	160	2.6	30	--	0.37	4.2	--	0.060	0.69	4/6/2016	1.4		16		
4/10 - 4/16	4/16/2016	ND (<2.5)	1.3	0.014	4/11/2016	6.82	ND (<0.00025)	0.017	23	254	3.5	39	--	0.48	5.3	--	0.11	1.2	4/13/2016	6.0		66		
4/17 - 4/23	4/23/2016	ND (<2.5)	1.3	0.014	4/18/2016	6.82	ND (<0.00025)	0.026	25	281	2.8	32	--	0.44	5.0	--	0.17	1.9	4/20/2016	6.2		70		
4/24 - 4/30	4/30/2016	ND (<2.5)	1.3	0.015	4/25/2016	7.02	ND (<0.00025)	0.011	21	245	0.70	8.2	--	0.44	5.1	--	0.092	1.1	4/27/2016	2.1		24		
5/1 - 5/7	5/7/2016	ND (<2.5)	1.3	0.014	5/2/2016	6.84	ND (<0.00025)	0.019	25	289	2.9	34	ND(<0.10)	0.05	0.58	--	0.089	1.0	5/4/2016	3.9		45	0.22	2.5
5/8 - 5/14	5/14/2016	ND (<2.5)	1.3	0.014	5/9/2016	6.64	ND (<0.00025)	0.0078	22	254	2.6	30	--	0.27	3.1	--	0.075	0.87	5/11/2016	2.5		29		
5/15 - 5/21	5/21/2016	ND (<2.5)	1.3	0.014	5/16/2016	6.51	ND (<0.00025)	0.011	20	231	3.2	37	--	0.18	2.1	--	0.085	0.98	5/18/2016	6.7		77		
5/22 - 5/28	5/28/2016	ND (<2.5)	1.3	0.015	5/23/2016	6.60	ND (<0.00025)	0.011	29	349	3.4	41	ND(<0.10)	0.05	0.60	--	0.067	0.81	5/25/2016	5.5		66		
5/29 - 6/4	6/4/2016	ND (<2.5)	1.3	0.014	5/31/2016	6.72	ND (<0.00025)	0.0063	15	172	1.6	18	--	0.94	11	--	0.047	0.54	6/1/2016	1.2		14		
6/5 - 6/11	6/11/2016	ND (<2.5)	1.3	0.014	6/6/2016	6.69	ND (<0.00025)	0.0030	3.7	40	0.43	4.7	--	0.34	3.7	--	0.027	0.29	6/8/2016	ND(<0.50)	0.25	2.7		
6/12 - 6/18	6/18/2016	NA	NA	NA	6/13/2016	6.68	ND (<0.00025)	0.0049	6.9	76	1.3	14	--	0.22	2.4	--	0.046	0.51	6/15/2016	1.8		20		
6/19 - 6/25	6/25/2016	NA	NA	NA	6/20/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6/22/2016	NA		NA		
					6/27/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6/29/2016	NA		NA		

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

NA = Not Available To Date

ND = Not Detected above laboratory reporting limit; concentration in adjacent cell to right is one-half the reporting limit (per Permit condition)
-- = Analyte detected; see column adjacent to right
Last Updated: July 1, 2016

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Attachment B Equipment Tracking Form

Sub-System	P&ID	Description	Status	Checked	Criticality	Notes
		Main Plant Equipment				
1		**Seep Wells and Lift Station 1**				
1.01		*Seep Well Field, 9 wells*	Running		2	Replaced motor and pump for PC-115R
1.02		*Lift Station 1 Lift Pump A*	Running		2	Replaced packing on seal
1.03		*Lift Station 1 Lift Pump B*	Standby		2	Replaced packing on seal
1.04		*Area in and around Lift Station 1*	Running		2	Replaced sandbags for secondary containment
2		**Athens Road Wells and Lift Station** 3				
2.01		*Athens Road Well Field, 9 wells*	Running			
2.02		*Lift Station 3 Lift Pump A*	Standby			
2.03		*Lift Station 3 Lift Pump B*	Running			
2.04		*Area in and around Lift Station 3*	Running			
3		**Lift Station *2* and Transmission Pipelines**				
3.01		*Influent Pipeline*	In operation			
3.02		*Effluent Pipeline*	Running			
3.03		*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	Opened and cleaned the actuator on the station fflow control valve
4		**Interceptor Wells and Cr Treatment Plant**				
4.01		*IWF Well Field, 30 wells*	Running		2	Replaced motor on I-I
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			

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	Checked	Criticality	Notes
5		**Equalization Area and GW-11 Pond**				
5.01	PID10A	*Pond GW-11*	In operation			
5.02	PID10A	*Pond Water Pump - P101A*	Standby			
5.03	PID10A	*Pond Water Pump - P101B*	Standby		3	New seal received. Tentative plan in place. Pump still operational.
5.04	PID10A	*Equalization Tanks*	In operation			
5.05	PID10A	*Area in and Around EQ*	In operation			
5.06	PID10A	*Raw Water Feed Pump - P102A*	Running			
5.07	PID10A	*Raw Water Feed Pump - P102B*	Standby			
5.08	PID10A	*F-101 Filters*	Standby		3	Installed new motor for auto strainer
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*	Running			
6.02	PID14	*Separator Tank - 1401*	Running			
6.03	PID14	*Media Return Pump - P 1401*	Running			
6.04	PID14	*P1401A*	Standby			
6.05	PID01A	*P1401B*	Running			
6.06	PID01A	*FBR 1*	Running		3	Installed ''y'' strainers on the air lines feeding the bed height control pump.
6.07	PID02A	*FBR 2*	Running		3	Installed ''y'' strainers on the air lines feeding the bed height control pump.
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*	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			

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

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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*	Off			
7.02	PID01B	*FBR 4*	Off			
7.03	PID02B	*First Stage Separator Tank - T2012*	Off			
7.04	PID01B	*Media Return Pump - P2012*	Off			
7.05	PID01B	*First Stage FBR Pump - P1013*	Running		2	Completed rehab on FBR skid including seal water lines, actuators, air lines, and probes.
7.06	PID01B	*First Stage FRB Pump - P1014*	Off			
7.07	PID01B	*First Stage FBR Pump - P102A*	Out for service		2	Motor pulled and sent in to Henderson Electric for repairs to the insulation
7.08	PID07A	*FBR 3 pH Feed Pump - P713*	Off			
7.09	PID07A	*FBR 4 pH Feed Pump - P714*	Off			
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*	Off			
7.13	PID15	*FBR 4 Nutrient (Phos Acid) Feed Pump - P1524*	Off			
7.14	PID07B	*FBR 3 Electron Donor Assembly Pump - P733*	Off			
7.15	PID07B	*FBR 4 Electron Donor Assembly Pump - P734*	Off			
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			

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9		**Second Stage FBRs 7** & 8				
9.01	PID03B	*FBR 7*	Off		4	Carbon transfer is complete
9.02	PID03B	*FBR 8*	Off			
9.03	PID03D	*Second Stage Separator Tank - T3012*	Off			
9.04	PID03B	*Media Return Pump - P3012*	Off			
9.05	PID03B	*Second Stage FBR Pump - P3017*	Off			
9.06	PID03B	*Second Stage FBR Pump - P3018*	Off			
9.07	PID03B	*Second Stage FBR Pump - P302A*	Off			
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*	Off			
9.13	PID07B	*FBR 8 Electron Donor Assembly Pump - P738*	Off			
10		**Aeration and DAF System**				
10.01	PID04	*Aeration Tank*	In operation			
10.02	PID04	*Aeration Blower - B401*	Running			
10.03	PID04	*Biofilter*	In operation			
10.04	PID04	*Nutrient Solution*	Running			
10.05	PID04	*Biofilter Sump*	Running			
10.06	PID04	*Nutrient Pump - P401*	Running			
10.07	PID04	*Biofilter Sump Pump - P402A*	Standby			
10.09	PID04	*Biofilter Blower*	Running			
10.10	PID05	*DAF Pressure Tanks*	In operation		2	New pressure tank installed during semi-annual inspection
10.11	PID05	*DAF Vessel - D501*	Running			
10.12	PID05	*DAF Pressure Pump - P501*	Running			
10.13	PID05	*DAF Float Pump - P502*	Running			
10.14	PID05	*DAF Vessel - D551*	Running			
10.15	PID05	*DAF Pressure Pump - P551*	Running			
10.16	PID05	*DAF Float Pump - P552*	Running			
10.17	PID05	*Screw Conveyer Drive*	Standby			
10.18	PID05	*Skimmer Drive*	Running			

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11		**Pumping System (Old Effluent)**				
11.01	PID06	*Effluent Tank 601*	In operation			
11.02	PID06	*Effluent Pump - P601*	Running			
11.03	PID06	*Effluent Pump - P602*	Standby			
12		**Sand Filter System**				
12.01	PID17	*Sand Filter*	Running			
12.02	PID17	*Filter Reject Tank*	Running			
12.03	PID17	*Filter Reject Pump - P1701A*	Running			
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*	Running			
14.07	PID09	*West Press*	Running			
14.08	PID09	*East Press*	Running			
14.09	PID09	*Filtrate Tank*	In operation			
14.10	PID09	*Filtrate Tank Effluent (recycle) Pump - P903*	Running			

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		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			
17.00	PID07C	*Micro Nutrient System*	In operation		2	New injection piping and tubing installed.
18.00	PID07C	*Hydrogen Peroxide System*	In operation			
19.00	PID07C	*De-Foam System*	In operation			
20.00	PID15	*Nutrient (Phosphoric Acid) System* (Tank only - pumps included in FBRs)	In operation			
21.00	PID07A	*Nutrient (Urea) System* (Tank only - pumps included in FBRs)	In operation			
22.00	PID07A	*pH System* (Tank and effluent pH feed pump only - other pumps included in FBRs)	In operation			
23.00	PID07C	*Ferric Chloride System*	In operation			
24.00	PID07B	*Polymer Systems - DAF*	In operation			
25.00	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			
27.00	PID16	*Oxygen System*	In operation			
28.00	PID16	*GWETS Plant Controls/ Siemens Controls*	In operation			
29.00	PID16	*Well Control System/ Allen Bradley Controls*	In operation			
30.00	PID16	*MCC FBR Pad*	In operation			
31.00	PID16	*MCC in D-1*	In operation			
32.00	PID16	*MCC in EQ area*	In operation			

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Sub-System	P&ID	Description	Status	Checked	Criticality	Notes
		Miscellaneous				
33.00		*Operations Office/Network*	In operation			
34.00		*Laboratory Analyzers*	In operation			
35.00		*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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