1RP-487

2013
Annual Report

DATE
March 31, 2014

From:	Hall, Sharon
To:	Lowe, Leonard, EMNRD
Cc:	VonGonten, Glenn, EMNRD; Hack Conder; Katie Jones
Subject:	ROC Hobbs N-6 Pipeline Leak Annual Groundwater Report (1R-487)
Date:	Monday, March 31, 2014 2:43:21 PM
Attachments:	Hobbs N-6 Annual Groundwater report .pdf

Mr. Lowe,

On behalf of ROC, I am respectfully submitting the attached Annual Groundwater Report for the Hobbs N-6 site. (NMOCD case # 1R-427). If you have any questions please contact Hack.

Regards,

Sharon

Sharon Hall | Associate Vice President | Sharon.Hall@arcadis-us.com
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ENVIRONMENTAL

Mr. Leonard Lowe
New Mexico Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

Subject:
2013 ANNUAL GROUNDWATER REPORT
N-6 Pipeline Leak, West County Road Site (1R-487)
Hobbs SWD System
T19S, R38E, Section 5 & 6, Unit N, LEA COUNTY, NEW MEXICO

Date:
March 31, 2014

Contact:
Sharon E. Hall

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Our ref:
MT000821.0001

Mr. Lowe:

On behalf of Rice Operating Company (ROC), ARCADIS is submitting this 2013 Annual Groundwater Report for the Hobbs Salt Water Disposal (SWD) System N-6 Release Site. The site is located immediately south of the intersection of Highway 62-180 and the South Loop of the Hobbs West County Road Bypass.

ROC was the service provider (agent) for the Hobbs SWD System and has no ownership of any portion of the pipeline, well or facility. The Hobbs SWD System was owned by a consortium of oil producers, System Parties, who provide operating capital on a percentage ownership/usage basis. The Hobbs SWD System has been abandoned.

Groundwater Sampling

All wells were sampled quarterly in accordance with NMOCD guidelines. The attached tables summarize the analytical results from groundwater samples collected from the monitor wells in 2013 and depth to water, total depth of the well, volume of water in the wellbore and volume of water purged from the well.

Free Product Removal

In 1994, a leak was discovered in a buried SWD pipeline. An assessment program was completed and a free product recovery program initiated. The free product has historically been collected from Monitor Well 1 (MW-1), initially in 1996 in conjunction with groundwater recovery, and then beginning in 2000 with product recovery only.

A biosparge well designed to maximize in-situ biodegradation and minimize volatilization of hydrocarbons was installed at the site and became operational in August 2005. Four borings were drilled on November 8 and 9, 2006 in order to evaluate hydrocarbon occurrence in the vadose zone. Based on drilling observations a second biosparge well was installed approximately 30 feet east of the original biosparge well. The second biosparge well became operational in March 2007. In November of 2007, an additional eight soil borings (piezometers) were drilled and a third biosparge well was installed southeast of the pump house. These soil borings were located in areas between previous sampling points, outside of the previously identified core source area, and as close as possible to previous (2006) soil borings from which samples had been collected and tested for total petroleum hydrocarbons (TPH) and total organic compounds (TOC).

In November of 2010, the air sparge system at the site was tested by collection of soil gas samples during a cycled shut down. A similar test protocol was previously performed in May/June and September/October 2007, August/September 2008 and November 2009. The soil gas samples from these testing events were analyzed for methane, carbon dioxide, oxygen and benzene, toluene, ethylbenzene and xylenes (BTEX).

During 2008 through 2013, phase separated hydrocarbon recovery was conducted through biweekly replacement of an absorbent sock placed in MW-1.

A Corrective Action Plan (CAP) was submitted to the NMOCD on April 2, 2012 and an Addendum was submitted April 11, 2012. In accordance with the NMOCD approval of the CAP and subsequent Addendum, pumping of free product from Biosparge Well #1 (BS1) began on April 7, 2012. Free product was pumped from this well on weekly basis from April 7, 2012 through September 19, 2012. Based on reduced product thickness and recovery volumes, the pump was removed from the well and a product recovery absorbent sock was placed in the well. The sock is changed weekly. A total of 1,638.9 gallons of free product has been removed from the well since April 7, 2012. Monitor Well #1 (MW1) also has had a product recovery absorbent sock in the well to continually remove free product. The sock is changed weekly. A total of 48.5 gallons of product have been removed from this well since April 7, 2012. Removed fluids were properly disposed of at a permitted SWD well.

Monitor Well Plugging

A Monitoring Well Plugging Request was submitted to the NMOCD on November 30, 2012, and Additional Information was submitted December 3, 2012, which was approved by the NMOCD. According to NMOCD's approval, five monitoring wells (MW-3, MW-3R, PZ-3, PZ-4 and BS-3) were plugged using a cement grout containing 1% - 3% bentonite and a 3 foot cap of cement at the surface. A monitor well plugging report detailing the plugging activities was submitted to the NMOCD on February 22, 2013.

Biosparge Well Operation and Evaluation

Evaluation of the 2007 through 2013 soil gas and monitoring well data indicates that the biosparge wells are effective in the remediation of free-phase hydrocarbons at the site. Biochemical results also suggest groundwater chemistry indicative of bioremediation. Pumping the free product from BS1 in 2012 and the product recovery absorbent socks in BS1 and MW-1 has reduced the amount of free product remaining on these wells. The wells will be monitored over the next few months to observe whether or not the recovery socks continue to capture free product. If product thickness in BS1 increases enough to warrant pumping, a continuous skimmer pump will be placed in BS1.

We are currently evaluating alternate remedial options to expedite closure of the site.

Thank you for consideration concerning this information. Should you have any questions regarding this submission, please do not hesitate to contact Hack Conder (575-393-2967) or me.

Very truly yours,

ARCADIS

Sharon E. Hall
Associate Vice President

enclosures:
Monitor Well Summary Tables

Monitor Well Location Figure
Monitor Well Lab Results

cc: Hack Conder - ROC
Glenn Von Gonten

ROC - Hobbs N-6 (1R-487)
Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	43.99	55.21	7.3	25	9/15/2009	232	840	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	44.07	55.21	7.2	25	11/20/2009	200	770	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	44.85	55.21	6.7	XXX	3/17/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong Odor Product Present
1	45.05	55.21	6.6	XXX	6/7/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	44.19	55.21	7.2	XXX	9/7/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	44.74	55.21	6.8	XXX	12/8/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	45.39	55.21	6.4	XXX	3/15/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	45.73	55.21	6.2	XXX	6/23/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	45.94	55.21	6	XXX	9/22/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.08	55.21	5.9	XXX	12/12/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.25	55.21	XXX	XXX	3/21/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.52	55.21	XXX	XXX	6/14/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.12	55.21	XXX	XXX	9/11/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.25	55.21	XXX	XXX	12/13/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present
1	46.11	55.21	XXX	XXX	3/6/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor Product present/PSH Recovery sock Replaced
1	46.24	55.21	XXX	XXX	9/19/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor/free product present
1	46.45	55.21	XXX	XXX	12/17/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Strong odor/Free product present

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	40.2	52.18	7.78	23.36	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2	40.34	52.11	7.65	22.75	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2	40.61	52.2	7.53	22.6	3/14/2003	53.2	XXX	0.003	0.001	0.006	0.004	109	
2	40.29	52.13	7.69	23.08	6/27/2003	40.8	499	<0.001	<0.001	<0.001	<0.001	112	
2	40.26	52.14	7.75	23.27	9/22/2003	31.9	504	<0.001	<0.001	<0.001	<0.001	88.8	
2	40.39	52.13	7.66	22.99	12/18/2003	44	458	<0.002	<0.002	<0.002	<0.006	37.7	
2	41.53	52.13	6.92	20.76	3/15/2004	39	484	0.00458	<0.001	0.00236	0.001929	108	
2	40.3	52.12	7.71	23.15	5/27/2004	31.9	481	0.000448	<0.001	0.000482	<0.001	89.4	
2	41.69	52.24	6.86	20.57	9/8/2004	70.9	577	0.0289	0.00219	0.0126	0.00837	91.4	
2	39.4	52.24	8.35	25.04	11/22/2004	58.1	XXX	0.0238	0.00269	0.0239	0.01051	90.2	
2	38.73	52.24	XXX	32	3/29/2005	39.1	444	0.00169	<0.001	0.00151	0.00101	93.6	
2	39.12	55	XXX	31.4	6/28/2005	42.4	515	<0.001	<0.001	<0.001	<0.001	100	
2	39.21	55	XXX	31	9/6/2005	49.5	517	<0.001	<0.001	<0.001	<0.001	69.5	
2	39.3	52.24	8.4	30	12/6/2005	58	380	0.00325	<0.001	<0.001	<0.001	107	
2	39.56	52.24	8.2	25	2/28/2006	29.5	538	<0.001	<0.001	<0.001	<0.001	56.3	
2	39.97	52.24	8	25	6/5/2006	38.5	552	<0.001	<0.001	<0.001	<0.001	76.6	
2	39.44	52.24	8.3	25	9/11/2006	31.1	428	<0.001	<0.001	<0.001	<0.001	92	
2	39.47	52.24	8.3	30	11/14/2006	33.6	442	j[0.000709]	<0.001	j[0.00609]	<0.001	91.7	test
2	39.89	52.24	8	30	3/13/2007	34.5	422	0.00134	<0.001	<0.001	<0.001	81.5	No Odor/ Clear
2	40.26	52.24	7.8	30	6/12/2007	33.3	444	j (0.000649)	0.0016	j (0.000792)	ND	77.6	Clear
2	40.22	52.24	7.8	25	9/18/2007	36	512	0.056	0.012	0.054	0.037	100	Slight Odor Clear
2	40.35	52.24	7.7	25	12/6/2007	40	454	<0.001	<0.001	<0.001	<0.003	92.7	Clear Slight odor
2	40.71	52.24	7.5	25	3/3/2008	36	442	<0.001	<0.001	<0.001	<0.003	98.4	Clear Slight odor
2	40.29	52.24	7.8	25	5/28/2008	32	523	<0.001	<0.001	<0.001	<0.003	83.2	Clear Slight odor
2	41.78	52.55	7	25	6/9/2009	36	516	0.003	0.001	<0.001	<0.003	81.5	Clear Slight Odor
2	40.56	52.24	7.6	25	9/8/2008	52	455	<0.001	<0.001	<0.001	<0.003	131	Clear Slight odor
2	41.43	52.24	7	25	12/15/2008	40	493	0.001	<0.001	0.002	<0.003	98	Clear Slight odor
2	41.61	52.55	7.1	25	3/16/2009	40	492	0.005	<0.001	0.004	<0.003	91.9	Clear Slight odor
2	41.87	52.55	6.9	25	9/14/2009	40	500	0.001	0.004	0.007	0.023	85	Clear Slight odor
2	41.96	52.55	6.9	25	11/19/2009	40	425	<0.001	<0.001	<0.001	<0.003	75.8	Clear Slight odor
2	42.08	52.55	6.8	25	3/17/2010	48	669	<0.001	<0.001	<0.001	<0.003	157	Slight odor Clear
2	42.32	52.55	6.6	25	6/7/2010	40	494	<0.001	<0.001	<0.001	<0.003	80.7	Clear Slight odor
2	41.15	52.55	7.4	25	9/1/2010	40	479	<0.001	<0.001	<0.001	<0.003	86	Clear Slight odor
2	41.36	52.55	7.3	25	12/9/2010	56	482	<0.001	<0.001	<0.001	<0.003	87.5	Clear Slight odor
2	42.01	52.55	6.9	25	3/16/2011	56	488	<0.001	<0.001	<0.001	<0.003	92	Clear Slight odor
2	42.4	52.55	6.6	25	6/22/2011	44	461	<0.001	<0.001	<0.001	<0.003	95.6	Clear Slight odor

2	42.68	52.55	6.4	25	9/21/2011	48	464	<0.001	<0.001	<0.001	<0.003	99.3	Clear Slight odor
2	42.84	52.55	6.3	25	12/13/2011	52	493	<0.001	<0.001	<0.001	<0.003	97.1	Clear Slight odor
2	43.03	52.55	6.2	25	3/20/2012	52	505	<0.001	<0.001	<0.001	<0.003	99.3	Clear Slight odor
2	43.26	52.55	6	25	6/15/2012	68	526	<0.001	<0.001	<0.001	<0.003	95.5	Clear Slight odor
2	43.37	52.55	6	25	9/11/2012	60	512	<0.001	<0.001	<0.001	<0.003	95.7	Clear Slight Odor
2	43.57	52.55	5.8	25	12/12/2012	48	473	<0.001	<0.001	<0.001	<0.003	96.4	Clear Slight Odor
2	43.67	52.55	5.8	25	3/6/2013	64	454	<0.001	<0.001	<0.001	<0.003	103	Clear Slight Odor
2	XXX	XXX	XXX	XXX	6/20/2013	60	512	<0.001	<0.001	<0.001	<0.003	87	XXX
2	44.08	52.55	5.5	25	9/19/2013	44	477	<0.001	<0.001	<0.001	<0.003	76.1	Clear Slight Odor
2	44.28	52.55	5.4	25	12/16/2013	48	458	<0.001	<0.001	<0.001	<0.003	95.4	Clear Slight Odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	40.57	156.05	7.65	225.18	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
3	40.76	156.02	74.92	224.76	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
3	10.95	156.02	74.79	224.38	3/14/2003	5850	XXX	0.06	0.001	0.001	0.003	888	
3	40.69	156.04	74.97	224.93	6/27/2003	5320	10700	0.013	<0.001	<0.001	0.001	1120	
3	40.68	156.06	75.34	226.02	9/22/2003	5320	10900	0.008	<0.001	<0.001	0.001	1050	
3	40.82	156.03	75.23	225.69	12/18/2003	5398	10512	0.018	<0.002	<0.002	<0.006	399	
3	41.82	156.03	74.57	223.73	3/15/2004	5140	8990	0.0354	<0.001	0.000821	0.001646	793	
3	40.83	156.05	75.23	225.71	5/27/2004	5230	8060	0.0131	0.000238	0.000248	0.000975	664	
3	41.93	156.15	74.27	222.73	9/8/2004	5140	8600	0.0152	<0.001	0.00184	0.003572	762	
3	39.64	156.15	75.73	227.19	11/23/2004	3890	XXX	0.0281	0.000202	0.000775	0.004491	683	
3	38.73	156.15	XXX	235	3/29/2005	7300	14700	0.0805	<0.001	0.00291	0.00422	1030	
3	39.35	156.15	XXX	39.35	6/28/2005	7280	8930	0.00619	<0.001	<0.001	<0.001	2760	
3	39.43	155.78	XXX	40	9/6/2005	4660	7070	0.00566	<0.001	0.00219	0.00455	874	
3	39.52	156.15	75.8	230	12/6/2005	7130	12100	0.0529	0.000572	0.00312	<0.001	848	
3	39.82	156.15	75.6	230	2/28/2006	7270	15300	0.0315	0.00264	0.00535	<0.001	829	
3	40.19	156.15	75.4	230	6/5/2006	7660	13600	0.0171	j[0.000488]	0.00258	<0.001	914	Septic Odor/ Clear
3	39.8	156.15	75.6	225	9/12/2006	7390	13100	0.0107	j[0.000587]	<0.001	<0.001	939	
3	39.67	156.15	75.7	230	11/14/2006	6810	12600	0.00697	j[0.000417]	j[0.000413]	<0.001	901	sights is really spelled sites. AND strong septic odor
3	42.15	156.68	9.4	30	3/14/2007	7810	13500	0.00177	j[0.000597]	j[0.000405]	<0.001	916	
3	40.48	156.15	75.2	230	6/11/2007	9390	16100	0.0139	0.00168	0.00485	0.010056	1100	Clear
3	40.43	156.15	75.2	230	9/18/2007	7298	14814	0.028	0.001	<0.001	0.009	1010	Strong Septic Odor Clear
3	40.5	156.15	75.2	320	12/5/2007	2700	5870	0.052	0.001	0.001	0.003	680	Clear Strong septic odor
3	40.76	156.15	75	250	3/4/2008	7600	14100	0.014	<0.001	<0.001	<0.003	1110	Clear Strong septic odor
3	40.97	156.15	75	250	5/29/2008	4100	8170	0.007	0.004	0.003	<0.003	592	Clear Strong septic odor
3	41.79	156.15	74	250	6/9/2009	3750	7600	0.001	<0.001	<0.001	<0.003	522	Clear Strong Septic odor
3	41.26	156.15	75	250	9/5/2008	7600	15200	0.011	<0.001	<0.001	<0.003	978	Clear Strong septic odor
3	41.42	156.15	75	250	12/16/2008	4250	8710	0.006	<0.001	<0.001	<0.003	600	Clear Strong septic odor
3	41.6	156.15	74	250	3/16/2009	3730	7570	0.004	<0.001	<0.001	<0.003	527	Clear Strong septic odor
3	41.91	156.15	74	250	9/15/2009	3700	7480	0.002	<0.001	<0.001	<0.003	492	Clear Strong septic odor
3	42.05	156.15	74	250	11/20/2009	3250	6560	<0.001	<0.001	<0.001	<0.003	434	Clear Strong septic odor
3	42.17	156.15	74	250	3/18/2010	7700	14100	0.006	<0.001	<0.001	<0.003	1030	Clear Strong septic odor
3	42.26	156.15	74	250	6/7/2010	7600	13700	0.002	<0.001	<0.001	<0.003	894	Clear Strong septic odor
3	41.09	156.15	75	250	9/8/2010	2700	5100	0.002	<0.001	<0.001	<0.003	293	Clear Strong septic odor

3	41.25	156.15	75	250	12/8/2010	4150	6650	0.001	<0.001	0.001	<0.003	470	Clear Strong septic odor
3	41.9	156.15	74	250	3/16/2011	7800	17100	0.005	<0.001	<0.001	<0.003	868	Clear Strong septic odor
3	42.39	156.15	74	250	6/23/2011	3000	4940	<0.001	<0.001	<0.001	<0.003	343	Clear Strong septic odor
3	42.52	156.15	74	250	9/22/2011	2170	4120	<0.001	<0.001	<0.001	<0.003	282	Clear Strong Septic odor
3	42.69	156.15	74	250	12/12/2011	2470	5000	<0.001	<0.001	<0.001	<0.003	327	Clear Strong septic odor
3	42.84	156.15	74	250	3/21/2012	2930	6170	<0.001	<0.001	<0.001	<0.003	408	Clear Strong septic odor
3	43.14	156.15	73	250	6/15/2012	2020	4640	<0.001	<0.001	<0.001	<0.003	249	Clear Strong septic odor
3	43.23	156.15	73	250	9/12/2012	1470	3530	<0.001	<0.001	<0.001	<0.003	265	Clear Strong septic odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3R	41.1	55.9	2.4	10	12/8/2010	184	744	<0.001	<0.001	<0.001	<0.003	80.9	Clear No odor
3R	41.89	55.9	2.2	10	3/16/2011	204	792	<0.001	<0.001	<0.001	<0.003	76.9	Clear No odor
3R	42.33	55.9	2.2	10	6/23/2011	248	817	<0.001	<0.001	<0.001	<0.003	67.4	Clear No odor
3R	42.59	55.9	2.1	10	9/21/2011	240	795	<0.001	<0.001	<0.001	<0.003	71.2	Clear No odor
3R	42.8	55.9	2.1	10	12/12/2011	200	768	<0.001	<0.001	<0.001	<0.003	82.8	Clear No odor
3R	42.97	55.9	2.1	10	3/20/2012	212	904	<0.001	<0.001	<0.001	<0.003	81.1	Clear No odor
3R	43.21	55.9	2	10	6/15/2012	220	857	<0.001	<0.001	<0.001	<0.003	72.6	Clear No odor
3R	43.28	55.9	2	10	9/11/2012	252	912	<0.001	<0.001	<0.001	<0.003	68.5	Clear No odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	42.42	56.65	9.24	27.74	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
4	42.6	56.66	9.14	27.42	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
4	42.84	56.63	8.96	26.89	3/14/2003	84.2	XXX	<0.001	<0.001	<0.001	<0.001	123	
4	42.58	56.65	9.14	27.43	6/27/2003	62	520	<0.001	<0.001	<0.001	0.002	138	
4	42.66	56.7	9.16	27.5	9/22/2003	65	569	<0.001	<0.001	<0.001	<0.001	123	
4	42.69	56.67	9.12	27.38	12/18/2003	64	547	<0.002	<0.002	<0.002	<0.006	44.8	
4	43.77	56.67	8.42	25.27	3/15/2004	124	560	0.00103	<0.001	<0.001	<0.001	127	
4	42.65	56.65	9.14	27.42	5/27/2004	49.6	484	<0.001	<0.001	<0.001	<0.001	107	
4	43.92	56.71	8.31	24.94	9/8/2004	49.6	492	0.00142	<0.001	<0.001	<0.001	114	
4	41.26	56.71	10.04	30.13	11/23/2004	55.2	XXX	<0.001	<0.001	<0.001	<0.001	99.2	
4	40.85	56.71	XXX	32	3/29/2005	47	424	<0.001	<0.001	<0.001	<0.001	101	
4	41.32	61.65	XXX	40	6/28/2005	44.8	519	<0.001	<0.001	<0.001	<0.001	102	
4	41.42	61.65	XXX	40	9/6/2005	69.7	523	<0.001	<0.001	<0.001	<0.001	92.5	
4	41.58	56.71	9.8	30	12/6/2005	40.4	370	<0.001	<0.001	<0.001	<0.001	82.2	
4	41.84	56.71	9.7	30	2/28/2006	39.7	556	<0.001	<0.001	<0.001	<0.001	71.7	
4	42.27	56.71	9.4	30	6/5/2006	59.2	476	<0.001	<0.001	<0.001	<0.001	76.2	
4	41.66	56.71	9.8	30	9/11/2006	65.7	588	<0.001	<0.001	<0.001	<0.001	87	
4	41.63	56.71	9.8	30	11/14/2006	93.4	498	<0.001	<0.001	<0.001	<0.001	90.8	
4	42.15	56.68	9.4	30	3/13/2007	95.3	528	<0.001	<0.001	<0.001	<0.001	82.7	Clear/ No Odor
4	42.59	56.68	9.2	30	6/11/2007	69.9	516	<0.001	<0.001	<0.001	<0.001	77.6	Clear
4	42.53	56.68	9.2	30	9/18/2007	84	604	<0.001	<0.001	<0.001	<0.003	93.2	Clear No Odor
4	42.65	56.68	9.1	30	12/6/2007	120	588	<0.001	<0.001	<0.001	<0.003	99.7	Clear No odor
4	42.98	56.68	8.9	30	3/3/2008	128	609	<0.001	<0.001	<0.001	<0.003	115	Clear No odor
4	43.19	56.68	8.8	30	5/28/2008	84	639	<0.001	<0.001	<0.001	<0.003	98.7	Clear No odor
4	44.21	56.72	8.1	30	6/10/2009	128	646	<0.001	<0.001	<0.001	<0.003	71.1	Clear No Odor
4	43.47	56.68	8.6	30	9/8/2008	192	768	<0.001	<0.001	<0.001	<0.003	130	Clear No odor
4	43.67	56.68	8.5	30	12/15/2008	152	683	<0.001	<0.001	<0.001	<0.003	90.6	Clear No odor
4	43.84	56.72	8.4	30	3/17/2009	152	614	<0.001	<0.001	<0.001	<0.003	89.8	Clear No odor
4	44.33	56.72	8.1	30	9/14/2009	136	594	<0.001	<0.001	<0.001	<0.003	72.9	Clear No odor
4	44.28	56.72	8.1	30	11/19/2009	132	614	<0.001	<0.001	<0.001	<0.003	68.1	Clear No odor
4	44.43	56.71	8	30	3/17/2010	44	637	<0.001	<0.001	<0.001	<0.003	148	Clear No odor
4	44.56	56.71	7.9	30	6/8/2010	108	552	<0.001	<0.001	<0.001	<0.003	89	Clear No odor
4	43.12	56.71	8.8	30	9/7/2010	120	587	<0.001	<0.001	<0.001	<0.003	71.3	Clear No odor
4	43.49	56.71	8.6	30	12/9/2010	100	468	<0.001	<0.001	<0.001	<0.003	95.7	Clear No odor
4	44.26	56.71	8.1	30	3/15/2011	88	554	<0.001	<0.001	<0.001	<0.003	79.7	Clear No odor
4	44.69	56.71	7.8	30	6/22/2011	88	544	<0.001	<0.001	<0.001	<0.003	90.2	Clear No odor
4	44.96	56.71	7.6	30	9/21/2011	80	493	<0.001	<0.001	<0.001	<0.003	89	Clear No odor

4	45.16	56.71	7.5	30	12/13/2011	84	531	<0.001	<0.001	<0.001	<0.003	96.5	Clear No odor
4	45.33	56.71	7.4	30	3/20/2012	84	562	<0.001	<0.001	<0.001	<0.003	99.8	Clear No odor
4	45.53	56.71	7.3	30	6/14/2012	76	557	<0.001	<0.001	<0.001	<0.003	79.7	Clear No odor
4	45.61	56.71	7.2	30	9/11/2012	104	600	<0.001	<0.001	<0.001	<0.003	99.5	Clear No odor
4	45.78	56.71	7.1	30	12/12/2012	104	605	<0.001	<0.001	<0.001	<0.003	95	Clear No odor
4	45.98	56.71	7	30	3/5/2013	96	522	<0.001	<0.001	<0.001	<0.003	100	Clear No odor
4	46.25	56.71	6.8	30	6/20/2013	36	471	<0.001	<0.001	<0.001	<0.003	76	Clear No odor
4	46.44	56.71	6.7	30	9/18/2013	80	527	<0.001	<0.001	<0.001	<0.003	73.5	Clear No odor
4	46.58	56.71	6.6	30	12/16/2013	84	510	<0.001	<0.001	<0.001	<0.003	87.7	Clear No odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
5	38.66	51.29	8.2	24.62	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
5	38.82	51.18	8.01	24.04	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
5	39.04	51.18	7.89	23.67	3/14/2003	39	XXX	<0.001	<0.001	<0.001	<0.001	105	
5	38.81	51.21	8.06	24.18	6/27/2003	35.4	513	<0.001	<0.001	<0.001	0.002	120	
5	51.2	38.77	8.11	24.35	9/22/2003	33.7	508	<0.001	<0.001	<0.001	<0.001	88.2	
5	38.91	51.19	8.01	24.05	12/18/2003	56	474	<0.002	<0.002	<0.002	<0.006	39.4	
5	40	51.19	7.3	21.92	3/15/2004	762	1620	0.0107	<0.001	0.000543	0.000876	216	
5	38.9	51.19	8.02	24.07	5/27/2004	33.7	473	<0.001	<0.001	<0.001	<0.001	94	
5	40.18	51.31	7.23	21.7	9/8/2004	35.4	517	<0.001	<0.001	<0.001	<0.001	79.4	
5	38.12	51.31	8.57	25.72	11/23/2004	57.3	XXX	<0.001	<0.001	<0.001	<0.001	85.4	
5	37.3	51.31	XXX	32	3/29/2005	35	449	<0.001	<0.001	<0.001	<0.001	83.1	
5	XXX	XXX	XXX	XXX	6/28/2005	38.1	504	<0.001	<0.001	<0.001	<0.001	95.8	
5	37.74	51.07	XXX	26.11	9/6/2005	66.8	488	<0.001	<0.001	<0.001	<0.001	103	
5	37.8	51.31	8.8	30	12/6/2005	29.6	442	0.00044	<0.001	<0.001	<0.001	67	
5	38.11	51.31	8.6	30	2/28/2006	27.9	504	<0.001	<0.001	<0.001	<0.001	62.8	
5	38.48	51.31	8.3	30	6/5/2006	37.8	484	<0.001	<0.001	<0.001	<0.001	69	
5	38.08	51.31	8.6	30	9/11/2006	39	596	<0.001	<0.001	<0.001	<0.001	81.2	
5	37.94	51.31	8.7	30	11/14/2006	30.2	430	<0.001	<0.001	<0.001	<0.001	85	
5	38.33	51.3	8.4	30	3/13/2007	36.2	420	<0.001	<0.001	<0.001	<0.001	78	Clear/ No Odor
5	38.82	51.3	8.1	30	6/11/2007	35.2	454	<0.001	<0.001	<0.001	<0.001	71.8	Clear
5	38.78	51.3	8.1	30	9/18/2007	40	574	<0.001	<0.001	<0.001	<0.003	89.6	Clear No Odor
5	38.85	51.3	8.1	30	12/6/2007	32	484	<0.001	<0.001	<0.001	<0.003	91.4	Clear No odor
5	39.15	51.3	7.9	30	3/4/2008	40	472	<0.001	<0.001	<0.001	<0.003	93.6	Clear No odor
5	39.41	51.3	7.7	30	5/28/2008	40	517	<0.001	<0.001	<0.001	<0.003	90	Clear No odor
5	40.34	51.3	7.1	30	6/10/2009	136	607	<0.001	<0.001	<0.001	<0.003	78.3	Clear No Odor
5	39.66	51.3	7.6	30	9/8/2008	60	560	<0.001	<0.001	<0.001	<0.003	157	Clear No odor
5	39.86	51.3	7.4	30	12/15/2008	40	538	<0.001	<0.001	<0.001	<0.003	92.8	Clear No odor
5	39.98	51.3	7.4	30	3/16/2009	40	508	<0.001	<0.001	<0.001	<0.003	85	Clear No odor
5	40.32	51.3	7.1	30	9/14/2009	40	504	<0.001	<0.001	<0.001	<0.003	75.9	Clear No odor
5	40.43	51.3	7.1	30	11/19/2009	40	455	<0.001	<0.001	<0.001	<0.003	65	Clear No odor
5	40.58	51.29	7	30	3/17/2010	192	825	<0.001	<0.001	<0.001	<0.003	111	Clear No odor
5	40.71	51.29	6.9	30	6/8/2010	40	511	<0.001	<0.001	<0.001	<0.003	91	Clear No odor
5	39.73	51.29	7.5	30	9/7/2010	40	436	<0.001	<0.001	<0.001	<0.003	70.9	Clear No odor
5	39.81	51.29	7.5	30	12/9/2010	36	486	<0.001	<0.001	<0.001	<0.003	95.2	Clear No odor
5	40.38	51.29	7.1	30	3/15/2011	40	493	<0.001	<0.001	<0.001	<0.003	81.5	Clear No odor
5	40.83	51.29	6.8	30	6/22/2011	40	439	<0.001	<0.001	<0.001	<0.003	80.6	Clear No odor
5	41.09	51.29	6.6	30	9/21/2011	40	425	<0.001	<0.001	<0.001	<0.003	84.6	Clear No odor

5	41.27	51.29	6.5	30	12/13/2011	40	517	<0.001	<0.001	<0.001	<0.003	96	Clear No odor
5	41.48	51.29	6.4	30	3/20/2012	36	490	<0.001	<0.001	<0.001	<0.003	91.1	Clear No odor
5	41.67	51.29	6.3	30	6/14/2012	36	487	<0.001	<0.001	<0.001	<0.003	90.6	Clear No odor
5	41.87	51.29	6.1	30	9/11/2012	36	485	<0.001	<0.001	<0.001	<0.003	89.8	Clear No odor
5	41.96	51.29	6.1	30	12/12/2012	40	463	<0.001	<0.001	<0.001	<0.003	85	Clear No odor
5	42.14	51.29	5.9	30	3/5/2013	44	456	<0.001	<0.001	<0.001	<0.003	94	Clear No odor
5	42.41	51.29	5.8	30	6/20/2013	32	472	<0.001	<0.001	<0.001	<0.003	80	Clear No odor
5	42.51	51.29	5.7	30	9/18/2013	48	463	<0.001	<0.001	<0.001	<0.003	97	Clear No odor
5	42.68	51.29	5.6	30	12/16/2013	40	449	<0.001	<0.001	<0.001	<0.003	99	Clear No odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
6	40.7	52.98	1.96	5.89	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
6	40.87	53.02	1.94	5.83	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
6	41.1	53	1.9	5.71	3/14/2003	42.5	XXX	<0.001	<0.001	<0.001	<0.001	96.6	
6	40.81	53.03	1.95	5.86	6/27/2003	35.4	743	<0.001	<0.001	<0.001	<0.001	97.5	
6	40.79	52.97	1.98	5.95	9/22/2003	39	484	<0.001	<0.001	<0.001	<0.001	88.4	
6	40.93	53	1.96	5.9	12/18/2003	44	452	<0.002	<0.002	<0.002	<0.006	36.8	
6	42.02	53	1.78	5.36	3/15/2004	222	692	0.0026	<0.001	<0.001	<0.001	94.2	
6	40.91	53.01	1.97	5.91	5/27/2004	31.9	443	<0.001	<0.001	<0.001	<0.001	86.6	
6	42.16	53.1	1.75	5.25	9/8/2004	53.2	488	<0.001	<0.001	<0.001	<0.001	85	
6	39.62	53.1	2.16	6.47	11/23/2004	76.1	XXX	<0.001	<0.001	<0.001	<0.001	84	
6	39.14	53.1	XXX	8	3/29/2005	97.8	473	<0.001	<0.001	<0.001	<0.001	81.1	
6	39.6	54.49	XXX	7.6	6/28/2005	122	541	<0.001	<0.001	0.000812	0.002845	103	
6	39.61	61.65	XXX	10.78	9/6/2005	40.4	442	<0.001	<0.001	<0.001	<0.001	23.4	
6	39.75	53.1	2.1	7	12/6/2005	52.7	458	<0.001	<0.001	<0.001	<0.001	58.2	
6	40.06	53.1	2.1	7	2/28/2006	59.2	552	<0.001	<0.001	<0.001	<0.001	67.6	
6	40.53	53.1	2	10	6/5/2006	67.2	512	<0.001	<0.001	<0.001	<0.001	72.2	
6	40.05	53.1	2.1	10	9/11/2006	67.6	552	<0.001	<0.001	<0.001	<0.001	101	
6	39.88	53.1	2.1	8	11/14/2006	53.9	464	<0.001	<0.001	<0.001	<0.001	95.4	
6	40.34	53.1	2	8	3/13/2007	57.7	466	<0.001	<0.001	<0.001	<0.001	90.3	Clear/ No Odor
6	40.78	53.1	2	8	6/11/2007	61.8	528	<0.001	<0.001	<0.001	<0.001	85.4	Clear
6	40.64	53.1	2	8	9/18/2007	72	566	<0.001	<0.001	<0.001	<0.002	105	Clear No Odor
6	40.85	53.1	2	8	12/6/2007	76	525	<0.001	<0.001	<0.001	<0.003	111	Clear No odor
6	41.22	53.1	1.9	8	3/3/2008	76	536	<0.001	<0.001	<0.001	<0.003	110	Clear No odor
6	41.47	53.1	1.9	8	5/28/2008	72	559	<0.001	<0.001	<0.001	<0.003	87.3	Clear No odor
6	42.26	53.1	1.7	8	6/9/2009	84	566	<0.001	<0.001	<0.001	<0.003	94.1	Clear No Odor
6	41.73	53.1	1.8	8	9/8/2008	124	668	<0.001	<0.001	<0.001	<0.003	128	Clear No odor
6	41.91	53.1	1.8	8	12/15/2008	84	568	<0.001	<0.001	<0.001	<0.003	105	Clear No odor
6	42.06	53.1	1.8	8	3/16/2009	76	550	<0.001	<0.001	<0.001	<0.003	98	Clear No odor
6	42.36	53.1	1.7	8	9/14/2009	72	546	<0.001	<0.001	<0.001	<0.003	81.5	Clear No odor
6	42.49	53.1	1.7	8	11/19/2009	76	535	<0.001	<0.001	<0.001	<0.003	178	Clear No odor
6	42.65	53.1	1.7	8	3/17/2010	48	693	<0.001	<0.001	<0.001	<0.003	160	Clear No odor
6	42.93	55.21	2	XXX	6/8/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Product present No sample taken
6	41.56	55.21	2.2	XXX	9/7/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Product present No sample taken
6	41.82	53.1	1.8	6	12/9/2010	100	549	<0.001	<0.001	<0.001	<0.003	95.2	Slight odor
6	42.49	53.1	1.7	6	3/15/2011	100	538	<0.001	<0.001	<0.001	<0.003	89.2	Heavy sheen Slight odor
6	42.93	53.1	1.6	6	6/22/2011	104	585	<0.001	<0.001	<0.001	<0.003	86.5	Heavy sheen Slight odor
6	43.19	53.1	1.6	6	9/22/2011	108	474	<0.001	<0.001	<0.001	<0.003	96.6	Slight odor

6	43.38	53.1	1.6	6	12/13/2011	80	528	<0.001	<0.001	<0.001	<0.003	97.1	Slight odor
6	43.55	53.1	1.5	6	3/20/2012	76	520	<0.001	<0.001	<0.001	<0.003	96.8	Slight odor
6	43.74	53.1	1.5	6	6/14/2012	84	529	<0.001	<0.001	<0.001	<0.003	106	Slight odor
6	43.91	53.1	1.5	6	9/11/2012	96	614	<0.001	<0.001	<0.001	<0.003	83	Slight odor
6	44.07	53.1	1.4	6	12/12/2012	88	592	<0.001	<0.001	<0.001	<0.003	105	Slight odor
6	44.23	53.1	1.4	6	3/6/2013	100	562	<0.001	<0.001	<0.001	<0.003	114	Slight odor
6	44.52	53.1	1.4	6	6/20/2013	92	564	<0.001	<0.001	<0.001	<0.003	108	Slight odor
6	44.59	53.1	1.4	6	9/19/2013	76	533	<0.001	<0.001	<0.001	<0.003	87	Slight Odor
6	44.78	53.1	1.3	6	12/16/2013	80	516	<0.001	<0.001	<0.001	<0.003	89.3	Slight Odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
7	40.74	47.2	1.03	3.1	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
7	40.94	47.17	0.99	2.98	12/6/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
7	41.22	47.18	0.95	2.86	3/14/2003	266	XXX	0.001	<0.001	<0.001	<0.001	XXX	
7	40.88	47.15	1	3	6/27/2003	222	802	<0.001	<0.001	<0.001	<0.001	122	
7	40.86	47.11	1.01	3.05	9/22/2003	222	861	<0.001	<0.001	<0.001	<0.001	133	
7	41.03	47.18	1	3	12/18/2003	208	827	<0.002	<0.002	<0.002	<0.006	110	
7	42.17	47.18	0.81	2.44	3/15/2004	1080	2220	0.0131	<0.001	<0.001	<0.001	44.4	
7	41	47.15	1	3	5/27/2004	213	986	<0.001	<0.001	<0.001	<0.001	220	
7	42.34	47.25	0.79	2.36	9/8/2004	230	731	<0.001	<0.001	<0.001	<0.001	105	
7	39.82	47.25	1.19	178.98	11/23/2004	188	XXX	<0.001	<0.001	<0.001	<0.001	111	purge vol. was likely an error
7	39.33	47.25	XXX	4	3/29/2005	234	791	<0.001	<0.001	<0.001	<0.001	96.1	
7	39.6	47	XXX	3.7	6/28/2005	216	783	<0.001	<0.001	0.00114	0.0038	96.9	
7	39.86	47	XXX	3.5	9/6/2005	187	802	<0.001	<0.001	<0.001	<0.001	76.9	
7	39.93	47.25	1.2	4	12/6/2005	201	670	<0.001	<0.001	<0.001	<0.0001	85.2	
7	40.27	47.25	1.1	4	2/28/2006	202	876	<0.001	<0.001	<0.001	<0.001	72.4	
7	40.63	47.25	1.1	10	6/5/2006	225	794	<0.001	<0.001	<0.001	<0.001	74	
7	40.17	47.25	1.1	10	9/11/2006	202	710	<0.001	<0.001	<0.001	<0.001	77.9	
7	40.01	47.25	1.2	7	11/14/2006	223	764	<0.001	<0.001	<0.001	<0.001	86.5	Clear no odor
7	40.53	47.31	1.1	5	3/13/2007	206	724	<0.001	<0.001	<0.001	<0.001	79.9	Clear/ No Odor
7	40.92	47.31	1	5	6/11/2007	228	846	<0.001	<0.001	<0.001	<0.001	75.9	Clear
7	40.92	47.31	1	5	9/18/2007	252	868	<0.001	<0.001	<0.001	<0.003	97.7	Clear No Odor
7	41.03	47.31	1	5	12/6/2007	256	882	<0.001	<0.001	<0.001	<0.003	105	Clear No odor
7	41.3	47.31	1	5	3/3/2008	260	876	<0.001	<0.001	<0.001	<0.003	111	Clear No odor
7	41.56	47.31	0.9	5	5/28/2008	268	962	<0.001	<0.001	<0.001	<0.003	100	Clear No odor
7	42.35	47.35	0.8	5	6/10/2009	260	885	<0.001	<0.001	<0.001	<0.003	81.1	Clear No Odor
7	41.85	47.31	0.9	5	9/8/2008	260	894	<0.001	<0.001	<0.001	<0.003	100	Clear No odor
7	41.99	47.31	0.9	5	12/15/2008	260	921	<0.001	<0.001	<0.001	<0.003	96.3	Clear No odor
7	42.18	47.35	0.8	5	3/17/2009	256	886	<0.001	<0.001	<0.001	<0.003	87.2	Clear No odor
7	42.49	47.35	0.8	5	9/14/2009	260	908	<0.001	<0.001	<0.001	<0.003	73.7	Clear No odor
7	42.61	47.35	0.8	5	11/19/2009	252	842	<0.001	<0.001	<0.001	<0.003	70.1	Clear No odor
7	42.77	47.35	0.7	5	3/17/2010	268	862	<0.001	<0.001	<0.001	<0.003	100	Clear No odor
7	42.84	47.35	0.7	5	6/8/2010	248	788	<0.001	<0.001	<0.001	<0.003	54.8	Clear No odor
7	41.42	47.35	0.9	5	9/7/2010	272	886	<0.001	<0.001	<0.001	<0.003	77.4	Clear No odor
7	41.76	47.35	0.9	5	12/9/2010	272	899	<0.001	<0.001	<0.001	<0.003	169	Clear No odor
7	42.52	47.35	0.8	5	3/15/2011	268	864	<0.001	<0.001	<0.001	<0.003	94.3	Clear No odor
7	42.98	47.35	0.7	5	6/22/2011	260	854	<0.001	<0.001	<0.001	<0.003	85.1	Clear No odor
7	43.26	47.35	0.7	5	9/21/2011	260	872	<0.001	<0.001	<0.001	<0.003	80.2	Clear No odor

7	43.41	47.35	0.6	5	12/13/2011	272	919	0.003	<0.001	<0.001	<0.003	89.3	Clear No odor
7	43.65	47.35	0.6	5	3/20/2012	268	883	<0.001	<0.001	<0.001	<0.003	95.2	Clear No odor
7	43.83	47.35	0.6	5	6/14/2012	260	863	<0.001	<0.001	<0.001	<0.003	116	Clear No odor
7	43.9	47.35	0.6	5	9/11/2012	256	985	<0.001	<0.001	<0.001	<0.001	74.4	Clear No odor
7	44.08	47.35	0.5	5	12/12/2012	272	877	<0.001	<0.001	<0.001	<0.003	86	Clear No odor
7	44.22	47.35	0.5	5	3/5/2013	272	848	<0.001	<0.001	<0.001	<0.003	105	Clear No odor
7	44.56	47.35	0.4	5	6/20/2013	200	809	<0.001	<0.001	<0.001	<0.003	130	Cleare No odor
7	44.63	47.35	0.4	5	9/18/2013	264	849	<0.001	<0.001	<0.001	<0.003	74.2	Clear No odor
7	44.84	47.35	0.4	5	12/16/2013	244	859	<0.001	<0.001	<0.001	<0.003	75.9	Clear No odor

ROC - Hobbs N-6 (1R-487)
Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
BS-1	40.9	65.7	16.1	25	12/6/2005	92.6	608	0.0323	0.0209	0.107	0.0825	54.4	
BS-1	43.33	65.7	14.5	45	3/1/2006	105	912	0.44	0.0357	0.168	0.1195		
BS-1	41.08	65.7	16	50	6/5/2006	171	858	0.544	0.0125	1.142	0.03479	45	Dark Gray with Stong Pet. Odor/ Heavy skim of Oil
BS-1	39.9	65.7	16.8	70	9/12/2006	142	1010	1.15	0.0283	0.207	0.04044	33.2	Clear Strong Petroleum Odor
BS-1	39.92	63.75	15.5	50	11/15/2006	283	1450	1.06	0.0298	0.159	0.0772	28.6	Clear / Strong Petroleum Odor
BS-1	40.47	63.74	15.1	50	3/14/2007	427	2040	1.19	0.0402	0.323	0.0958	24.2	Began
BS-1	42.59	63.74	13.7	50	6/12/2007	346	1580	0.569	0.00923	0.146	0.0891	24.7	Clear
BS-1	42.45	63.74	13.8	45	9/18/2007	428	1804	1.88	0.026	0.394	0.202	13.2	Clear Strong Petroleum Odor
BS-1	44.18	63.74	12.7	45	12/6/2007	500	1997	1.31	0.001	0.255	0.11	66.1	Clear Strong petroleum odor
BS-1	See comments	63.74	XXX	XXX	3/4/2008	550	2070	<0.001	<0.001	<0.001	<0.003	105	Hydrocarbon present Strong odor Hydrocarbon emulsion make it impossible to measure water column
BS-1	43.29	63.74	13.3	45	5/29/2008	810	2590	0.025	0.124	0.318	0.197	99.2	Hydrocarbons present Clear Strong odor
BS-1	47.34	63.74	10.7	XXX	6/9/2009								Hydrocarbon Present Strong Odor Emulsion/Strong Petrolum Odor. Well could not be pumped or bailed.
BS-1	43.4	63.74	13.2	45	9/5/2008	710	2270	0.736	0.004	0.238	0.117	58	Clear Strong petroleum odor
BS-1	43.1	63.74	13.4	45	12/15/2008	580	2070	0.347	0.004	0.188	0.09	76.8	Clear Strong petroleum odor
BS-1	43.21	63.74	13.3	XXX	3/16/2009								Product is present and emulsion was so thick the well could not be pumped or bailed
BS-1	48.2	63.74	10.1	XXX	9/15/2009								Hydrocarbon present Strong odor Emulsion/Strong petroleum odor Could not be sampled
BS-1	48.36	63.74	10	XXX	11/20/2009								Hydrocarbon present Strong odor Emulsion/Strong petroleum odor Could not be sampled
BS-1	48.47	63.74	9.9	XXX	3/18/2010								Hydrocarbon Present with Strong odor
BS-1	48.83	63.74	9.7	XXX	6/7/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Strong odor Emulsion Strong petroleum odor
BS-1	47.38	63.74	10.6	XXX	9/8/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Strong odor Emulsion Strong petroleum odor

BS-1	47.49	63.74	10.6	XXX	12/8/2010	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	47.93	63.74	10.3	XXX	3/16/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	48.22	63.74	10.1	XXX	6/23/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	48.51	63.74	9.9	XXX	9/22/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	48.63	63.74	9.8	XXX	12/12/2011	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	48.79	63.74	9.7	XXX	3/21/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon present Emulsion present Strong petroleum odor
BS-1	46.03	63.74	11.5	XXX	9/12/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon Present with Strong Petroleum odor
BS-1	45.67	63.74	11.7	XXX	12/13/2012	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon Present with Strong odor, Product is present, well was not sampled
BS-1	46.11	63.74	11.5	XXX	3/6/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon Present with Strong odor, Product is present, well was not sampled
BS-1	46.34	63.74	11.3	XXX	6/20/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hydrocarbon Present with Strong odor, Product is present, well was not sampled
BS-1	46.79	63.74	11	XXX	9/19/2013	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Hyrdrocarbon present with Strong odor; Product present, well was not sampled
BS-1	47.02	63.74	10.9	XXX	12/17/2013	XXX	XXX	XXX	XXX	XXX	XXX		Hydrocarbon present with Strong odor, Product present, well was not sampled

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Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
BS-2	42.59	73.32	20	60	11/15/2006	81.8	522	0.0373	0.00314	0.0404	0.0994	107	Clear / Strong Petroleum Odor
BS-2	41.4	71.59	19.6	60	3/14/2007	64.5	444	0.00274	j[0.000935]	0.00225	0.00282	74.4	Began
BS-2	41.8	71.59	19.4	60	6/12/2007	83.8	546	0.00179	0.00119	0.002	0.0011	75.9	Clear
BS-2	41.65	71.59	19.5	60	9/18/2007	108	588	<0.001	<0.001	<0.001	<0.003	111	Clear Strong Petroleum Odor
BS-2	41.5	71.59	19.6	60	12/6/2007	108	571	0.001	<0.001	0.002	<0.003	97.5	Clear Strong petroleum odor
BS-2	41.78	71.08	19	60	3/4/2008	100	553	0.002	<0.001	0.004	<0.003	113	Clear Strong petroleum odor
BS-2	42.06	71.08	18.9	60	5/29/2008	100	605	0.002	<0.001	0.002	<0.003	99.6	Clear Strong petroleum odor
BS-2	42.92	70.83	18.1	60	6/9/2009	88	530	<0.001	<0.001	<0.001	<0.003	79.8	Clear Strong Petroleum Odor
BS-2	42.35	71.08	18.7	60	9/5/2008	88	511	0.008	<0.001	0.002	<0.003	101	Clear Strong petroleum odor
BS-2	42.46	71.08	18.6	60	12/15/2008	92	568	0.005	<0.001	0.001	<0.003	96.3	Clear Strong petroleum odor
BS-2	42.81	70.83	18.2	60	3/16/2009	88	497	<0.001	<0.001	<0.001	<0.003	85.9	Clear Strong petroleum odor
BS-2	43.41	70.83	17.8	60	9/15/2009	92	533	<0.001	<0.001	<0.001	<0.003	83.7	Clear Strong petroleum odor
BS-2	43.61	70.83	17.7	60	11/19/2009	92	568	<0.001	<0.001	<0.001	<0.003	76.2	Clear Strong petroleum odor
BS-2	43.85	70.83	17.5	60	3/18/2010	92	555	<0.001	<0.001	<0.001	<0.003	112	Clear Strong Petroleum odor
BS-2	43.48	70.83	17.8	60	6/7/2010	84	553	<0.001	<0.001	<0.001	<0.003	94.6	Clear Strong petroleum odor
BS-2	42.38	70.83	18.5	60	9/8/2010	92	554	<0.001	<0.001	<0.001	<0.003	83.5	Clear Strong petroleum odor
BS-2	42.59	70.83	18.4	60	12/8/2010	104	496	<0.001	<0.001	<0.001	<0.003	93.6	Clear Strong petroleum odor
BS-2	42.86	70.83	18.2	60	3/16/2011	80	525	<0.001	<0.001	<0.001	<0.003	89.7	Clear Strong petroleum odor
BS-2	43.33	70.83	17.9	60	6/23/2011	140	649	<0.001	<0.001	<0.001	<0.003	92.4	Clear Strong petroleum odor
BS-2	43.56	70.83	17.7	60	9/22/2011	156	688	<0.001	<0.001	<0.001	<0.003	112	Clear Strong petroleum odor
BS-2	43.75	70.83	17.6	60	12/12/2011	144	665	0.001	<0.001	<0.001	<0.003	118	Clear Strong petroleum odor
BS-2	43.89	70.83	17.5	60	3/21/2012	84	569	<0.001	<0.001	<0.001	<0.003	131	Clear Strong petroleum odor
BS-2	44.13	70.83	17.4	60	6/15/2012	80	548	<0.001	<0.001	<0.001	<0.003	116	Clear Strong petroleum odor
BS-2	44.2	70.83	17.3	60	9/12/2012	72	511	<0.001	<0.001	<0.001	<0.003	101	Clear Strong petroleum odor
BS-2	44.32	70.83	17.2	60	12/13/2012	48	477	<0.001	<0.001	<0.001	<0.003	84.3	Clear Strong petroleum odor
BS-2	44.85	70.83	16.9	60	3/6/2013	64	482	<0.001	<0.001	<0.001	<0.003	100	Began Pumping/Clear Strong petroleum odor
BS-2	45.06	70.83	16.8	60	6/21/2013	76	537	<0.001	<0.001	<0.001	<0.003	97	Began Pumping/Clear Strong Petroleum Odor
BS-2	45.25	70.83	16.6	60	9/19/2013	56	515	<0.001	<0.001	<0.001	<0.003	79.4	Began Pumping/Clear Strong petroleum odor
BS-2	45.61	70.83	16.4	60	12/16/2013	68	509	<0.001	<0.001	<0.001	<0.003	82.3	Began pumping/Clear Strong petroleum odor

ROC - Hobbs N-6 (1R-487)

Unit Letter N, Section 6, T19S, R38E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
BS-3	41.65	70.8	18.9	65	12/5/2007	576	1553	0.062	<0.001	0.069	0.021	73.7	Clear Strong petroleum odor
BS-3	41.53	70.8	19	65	3/4/2008	500	1410	0.037	0.001	0.115	0.032	68.3	Clear Strong petroleum odor
BS-3	41.82	70.8	18.8	65	5/29/2008	384	1074	0.006	<0.001	0.005	<0.003	79.4	Clear Strong petroleum odor
BS-3	42.64	69.58	17.5	60	6/9/2009	420	1340	0.013	<0.001	0.023	<0.003	63.3	Clear Strong Petroleum Odor
BS-3	42.09	70.8	18.7	65	9/5/2008	580	1480	0.01	<0.001	0.051	<0.003	106	Clear Strong petroleum odor
BS-3	42.19	70.8	18.6	65	12/15/2008	540	1440	0.007	0.001	0.014	<0.003	69.5	Clear Strong petroleum odor
BS-3	42.45	69.58	17.6	60	3/16/2009	480	1320	0.021	<0.001	0.024	<0.003	67	Clear Strong petroleum odor
BS-3	42.76	69.58	17.4	60	9/15/2009	352	1160	0.02	<0.001	<0.001	<0.003	63.8	Clear Strong petroleum odor
BS-3	42.89	69.58	17.3	60	11/19/2009	400	1160	0.038	<0.001	<0.001	<0.003	61	Clear Strong odor
BS-3	43.08	69.58	17.2	60	3/18/2010	316	1030	0.023	<0.001	0.014	<0.003	86.6	Clear Strong Petroleum odor
BS-3	43.24	69.58	17.1	60	6/7/2010	276	972	0.008	<0.001	0.007	<0.003	90	Clear Strong petroleum odor
BS-3	42.01	69.58	17.9	60	9/8/2010	100	514	0.001	<0.001	0.001	<0.003	85.5	Clear Strong petroleum odor
BS-3	42.23	69.58	17.8	60	12/8/2010	88	458	<0.001	<0.001	<0.001	<0.003	94.6	Clear Strong petroleum odor
BS-3	43.19	69.58	17.2	60	3/16/2011	80	511	<0.001	<0.001	<0.001	<0.003	87	Clear Strong petroleum odor
BS-3	43.68	69.58	16.8	60	6/23/2011	84	530	<0.001	<0.001	<0.001	<0.003	94.3	Clear Strong petroleum odor
BS-3	43.93	69.58	16.7	60	9/22/2011	90	503	<0.001	<0.001	<0.001	<0.003	105	Clear Strong petroleum odor
BS-3	44.14	69.58	16.5	60	12/12/2011	76	545	<0.001	<0.001	<0.001	<0.003	107	Clear Strong petroleum odor
BS-3	44.21	69.58	16.5	60	3/21/2012	68	405	<0.001	<0.001	<0.001	<0.003	118	Clear Strong petroleum odor
BS-3	44.38	69.58	16.4	60	6/15/2012	72	520	<0.001	<0.001	<0.001	<0.003	88	Clear Strong petroleum odor
BS-3	44.45	69.58	16.3	60	9/12/2012	80	557	<0.001	<0.001	<0.001	<0.003	98	Clear Strong petroleum odor

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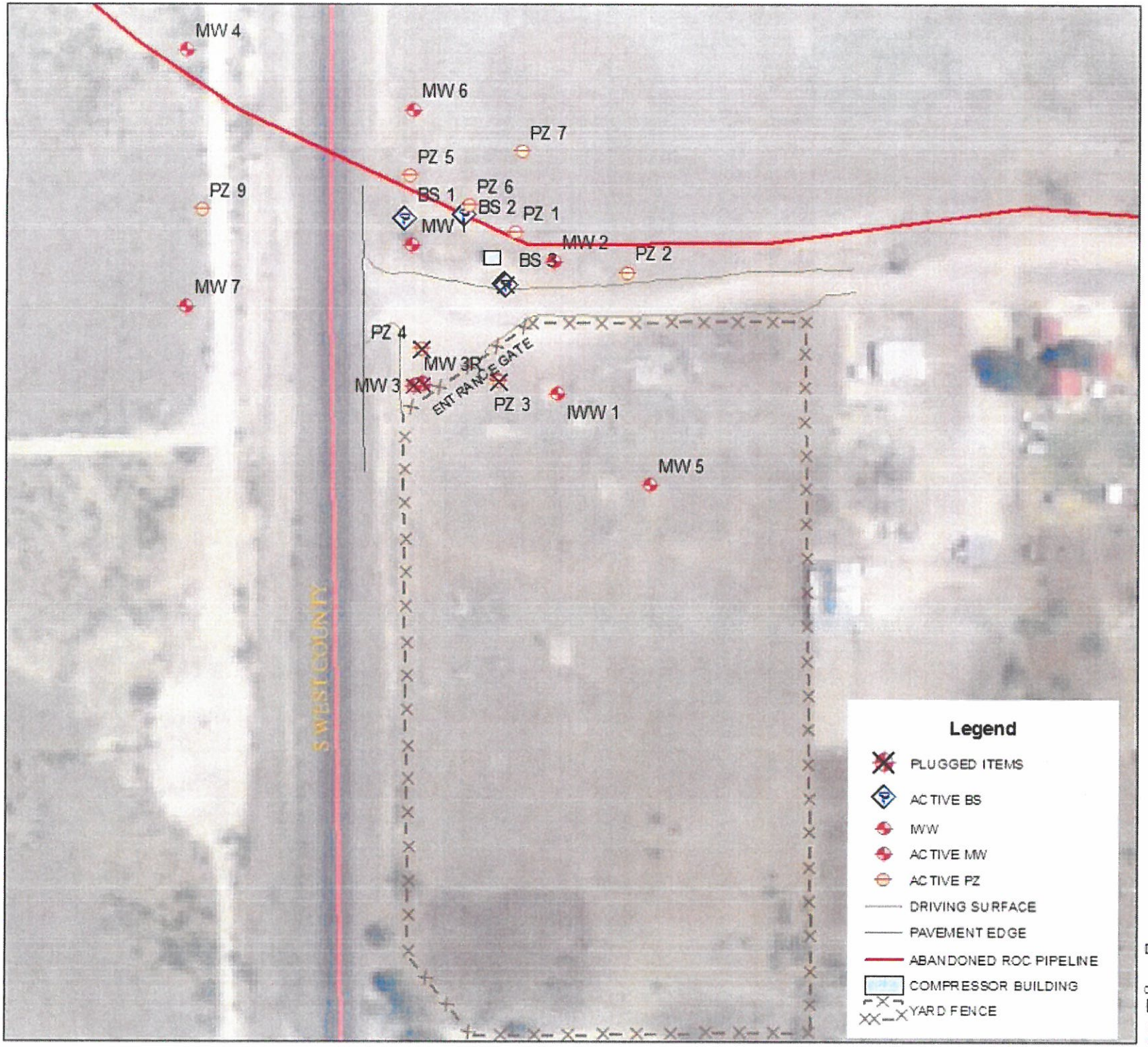
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
IWW	40.42	98.25	58.98	176.95	8/14/2002	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
IWW	40.79	98.18	37.3	111.91	3/14/2003	239	XXX	0.004	<0.001	<0.001	<0.001	110	
IWW	40.45	98.24	37.56	112.69	6/27/2003	40.7	465	<0.001	<0.001	<0.001	<0.001	102	
IWW	40.43	98.2	37.78	113.34	9/22/2003	42.5	493	<0.001	<0.001	<0.001	<0.001	79.6	
IWW	40.33	98.23	37.8	113.42	12/18/2003	52	485	<0.002	<0.002	<0.002	<0.006	38.6	
IWW	41.75	98.23	82.96	248.9	3/15/2004	487	1130	0.00619	<0.001	<0.001	<0.001	130	
IWW	40.12	98.22	37.93	113.81	5/27/2004	40.8	474	<0.001	<0.001	<0.001	<0.001	100	
IWW	41.93	98.2	57.4	172.19	9/8/2004	78	583	<0.001	<0.001	<0.001	<0.001	89.6	
IWW	39.71	98.2	59.66	178.98	11/23/2004	88.3	XXX	<0.001	<0.001	<0.001	<0.001	82.5	
IWW	39.01	98.2	XXX	250	3/29/2005	419	1010	<0.001	<0.001	<0.001	<0.001	81	
IWW	39.39	50	XXX	21	6/28/2005	85.3	510	<0.001	<0.001	<0.001	<0.001	73.5	
IWW	39.6	98.2	59.8	185	12/6/2005	49	498	<0.001	<0.001	<0.001	<0.001	64.2	
IWW	39.83	98.2	59.5	180	2/28/2006	41.9	532	<0.001	<0.001	<0.001	<0.001	60.3	
IWW	40.2	98.2	59.2	180	6/5/2006	44.5	494	<0.001	<0.001	<0.001	<0.001	61.1	
IWW	39.76	98.2	59.6	180	9/12/2006	38.8	528	<0.001	<0.001	<0.001	<0.001	80.7	
IWW	39.61	98.2	59.8	180	11/14/2006	43.7	434	<0.001	<0.001	<0.001	<0.001	78.1	Clear no odor pH increased again
IWW	40.13	97.9	58.9	180	3/14/2007	35.2	538	<0.001	<0.001	<0.001	<0.001	66.7	Clear/
IWW	40.5	97.9	58.5	180	6/11/2007	40.1	490	<0.001	<0.001	<0.011	<0.001	74.7	Clear
IWW	40.49	97.9	58.6	180	9/18/2007	48	606	0.006	<0.001	<0.001	<0.003	91.9	Clear No Odor
IWW	40.58	97.9	58.5	200	12/5/2007	44	505	<0.001	<0.001	<0.001	<0.003	87.5	Clear No odor
IWW	40.93	97.9	58.1	200	3/4/2008	40	526	<0.001	<0.001	<0.001	<0.003	90.1	Clear No odor
IWW	41.16	97.9	57.9	200	5/29/2008	44	556	<0.001	<0.001	<0.001	<0.003	82.6	Clear No odor
IWW	41.96	97.9	57.1	200	6/9/2009	40	505	<0.001	<0.001	<0.001	<0.003	73.2	Clear No Odor
IWW	41.38	97.9	57.7	200	9/5/2008	44	534	<0.001	<0.001	<0.001	<0.003	85	Clear No odor
IWW	41.61	97.9	57.4	200	12/16/2008	48	574	<0.001	<0.001	<0.001	<0.003	74	Clear No odor
IWW	41.76	97.9	57.3	200	3/16/2009	40	480	<0.001	<0.001	<0.001	<0.003	82.8	Clear No odor
IWW	42.06	97.9	57	200	9/15/2009	88	554	<0.001	<0.001	<0.001	<0.003	75.8	Clear No odor
IWW	42.21	97.9	56.8	200	11/20/2009	44	447	<0.001	<0.001	<0.001	<0.003	68.5	Clear No odor
IWW	42.36	97.9	56.7	200	3/18/2010	108	577	<0.001	<0.001	<0.001	<0.003	95.1	Clear No odor
IWW	42.49	97.9	56.5	200	6/7/2010	48	510	<0.001	<0.001	<0.001	<0.003	93.1	Clear No odor
IWW	41.39	97.9	57.6	200	9/8/2010	40	499	<0.001	<0.001	<0.001	<0.003	73.3	Clear No odor
IWW	41.52	97.9	57.5	200	12/8/2010	68	481	<0.001	<0.001	<0.001	<0.003	81.9	Clear No odor
IWW	42.15	97.9	56.9	200	3/16/2011	68	534	<0.001	<0.001	<0.001	<0.003	74.2	Clear No odor
IWW	42.63	97.9	56.4	200	6/23/2011	84	512	<0.001	<0.001	<0.001	<0.003	73.3	Clear No odor
IWW	42.88	97.9	56.1	200	9/22/2011	84	493	<0.001	<0.001	<0.001	<0.003	81.8	Clear No odor
IWW	42.98	97.9	56	200	12/12/2011	92	521	<0.001	<0.001	<0.001	<0.003	84.5	Clear No odor
IWW	43.18	97.9	55.8	200	3/21/2012	88	567	<0.001	<0.001	<0.001	<0.003	84.5	Clear No odor

IWW	43.46	97.9	55.5	200	6/15/2012	92	493	<0.001	<0.001	<0.001	<0.003	77	Clear No odor
IWW	43.57	97.9	55.4	200	9/12/2012	72	573	<0.001	<0.001	<0.001	<0.003	97.4	Clear No odor
IWW	43.69	97.9	55.3	200	12/13/2012	124	627	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
IWW	43.8	97.9	55.2	200	3/5/2013	136	607	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
IWW	44.1	97.9	54.9	200	6/21/2013	128	618	<0.001	<0.001	<0.001	<0.003	74	Clear No odor
IWW	44.19	97.9	54.8	200	9/18/2013	168	641	<0.001	<0.001	<0.001	<0.003	79.9	Clear No odor
IWW	44.49	97.9	54.5	200	12/17/2013	132	620	<0.001	<0.001	<0.001	<0.003	72.6	Clear No odor



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

HOBBS N-6 LEAK

UL N SECTION 5&6
T-19-S R-38-E
LEA COUNTY, NM

1R-487

DGW = 43 FT

0 60 120 Feet

Drawing date 11/8/12
Drafted by TONY GRIECO

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 06, 2014

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: HOBBS N-6

Enclosed are the results of analyses for samples received by the laboratory on 12/17/13 13:26.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: MONITOR WELL #2 (H303049-01)

BTEX 8260B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*100 %*	*59.8-161*
Surrogate: Toluene-d8	*94.2 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*97.6 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**48.0**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**95.4**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**458**	5.00	12/18/2013	ND	243	92.2	264	2.49	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: MONITOR WELL #4 (H303049-02)

BTEX 8260B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*101 %*	*59.8-161*
Surrogate: Toluene-d8	*99.3 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*96.4 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**84.0**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**87.7**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**510**	5.00	12/18/2013	ND	492	93.4	527	5.71	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: MONITOR WELL #5 (H303049-03)

BTEX 8260B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*97.0 %*	*59.8-161*
Surrogate: Toluene-d8	*95.1 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*96.4 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**40.0**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**99.0**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**449**	5.00	12/18/2013	ND	492	93.4	527	5.71	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: MONITOR WELL #6 (H303049-04)

BTEX 8260B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*108 %*	*59.8-161*
Surrogate: Toluene-d8	*97.9 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*101 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**80.0**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**89.3**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**516**	5.00	12/18/2013	ND	492	93.4	527	5.71	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: MONITOR WELL #7 (H303049-05)

BTEX 8260B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*102 %*	*59.8-161*
Surrogate: Toluene-d8	*96.7 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*99.5 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**244**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**75.9**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**859**	5.00	12/18/2013	ND	492	93.4	527	5.71	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/17/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: IWW (H303049-06)

BTEX 8260B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*102 %*	*59.8-161*
Surrogate: Toluene-d8	*95.9 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*95.1 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**132**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**72.6**	10.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**620**	5.00	12/18/2013	ND	492	93.4	527	5.71	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	12/17/2013	Sampling Date:	12/16/2013
Reported:	01/06/2014	Sampling Type:	Water
Project Name:	HOBBS N-6	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Amanda Ponce
Project Location:	T19S-R38E-SEC5&6 E/H-LEA CTY.,NM		

Sample ID: BIO SPARGE #2 (H303049-07)

BTEX 8260B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/23/2013	ND	0.020	101	0.0200	3.99	
Toluene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.05	
Ethylbenzene*	<0.001	0.001	12/23/2013	ND	0.021	104	0.0200	1.43	
Total Xylenes*	<0.003	0.003	12/23/2013	ND	0.063	106	0.0600	0.894	
Total BTEX	<0.006	0.006	12/23/2013	ND					

Surrogate: Dibromofluoromethane	*101 %*	*59.8-161*
Surrogate: Toluene-d8	*103 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*105 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**68.0**	4.00	12/30/2013	ND	100	100	100	3.92	

Sulfate 375.4 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**82.3**	25.0	01/03/2014	ND	20.2	101	20.0	3.53	

TDS 160.1 mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**509**	5.00	12/18/2013	ND	492	93.4	527	5.71	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Hack Conder	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Hobbs N-6
Project Location: T19S-R38E-Sec5&6 E/H ~ Lea County - New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H303049-	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2013)	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1	Monitor Well #2	G	3	X				2				1		12/16	10:25		X																X	X	X	
2	Monitor Well #4	G	3	X				2				1		12/16	16:40		X																X	X	X	
3	Monitor Well #5	G	3	X				2				1		12/16	9:15		X																X	X	X	
4	Monitor Well #6	G	3	X				2				1		12/16	14:00		X																X	X	X	
5	Monitor Well #7	G	3	X				2				1		12/16	15:20		X																X	X	X	
6	IWW	G	3	X				2				1		12/17	9:50		X																X	X	X	
7	Bio Sparge #2	G	3	X				2				1		12/16	12:50		X																X	X	X	

Relinquished by: Rozanne Johnson	Date: 12/17/2013	Time: 13:26	Received by:
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Date: 12/17/2013 Time: 13:26

Phone Results: Yes / No
Fax Results: Yes / No Additional Fax Number:

Delivered By: (Circle One) 3.0°C
Sampler - UPS - Bus - Other: #54

Sample Condition: Cool: Yes / Intact: Yes — CHECKED BY: (Initials)

#54

REMARKS:

Email Results: hconder@riceswd.com
lweinheimer@rice-ecs.com
kjones@riceswd.com
rozanne11@windstream.net