

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
MW01	2/25/2005	<1.0	<1.0	<1.0	<3.0	7.58	NA
	5/12/2005	<1.0	<1.0	<1.0	<2.0	7.40	91.60
	8/9/2005	<1.0	<1.0	<1.0	<2.0	7.22	90.78
	11/15/2005	<1.0	<1.0	<1.0	<2.0	5.90	92.10
	2/25/2006	<1.0	<1.0	<1.0	<1.0	7.03	91.97
	5/15/2006	<1.0	<1.0	<1.0	<1.0	6.20	91.80
	8/16/2006	<1.0	<1.0	<1.0	<1.0	8.95	89.05
	11/7/2006	<1.0	<1.0	<1.0	<1.0	7.92	90.08
	2/20/2007	<1.0	<1.0	<1.0	<1.0	7.10	90.90
	5/15/2007	<1.0	<1.0	<1.0	<1.0	3.90	94.10
	8/15/2007	<1.0	<1.0	<1.0	<1.0	5.20	92.80
	11/14/2007	<1.0	<1.0	<1.0	<1.0	6.10	91.90
	2/19/2008	<1.0	<1.0	<1.0	<1.0	5.08	92.92
	5/31/2008	<1.0	<1.0	<1.0	<1.0	5.78	92.22
	8/26/2008	<1.0	<1.0	<1.0	<1.0	7.70	90.30
	12/1/2008	<1.0	<1.0	<1.0	<1.0	6.36	91.64
	2/25/2009	<1.0	<1.0	<1.0	<1.0	6.31	91.69
	5/27/2009	<1.0	<1.0	<1.0	<1.0	4.81	93.19
	8/24/2009	<1.0	<1.0	<1.0	<1.0	5.77	92.23
	11/10/2009	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/12/2010	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	5/4/2010	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/27/2010	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/16/2010	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/22/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	5/10/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/25/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/18/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/21/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	5/29/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/31/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/26/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/28/2013	<1.0	<1.0	<1.0	<1.0	7.55	90.45
	5/28/2013	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/27/2013	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/20/2013	<1.0	<1.0	<1.0	<1.0	7.66	90.90
	12/24/2013	Surveyed - Not Sampled				8.05	90.52



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	2/25/2014	<1.0	<1.0	<1.0	<1.0	8.18	90.38
	5/23/2014	<1.0	<1.0	<1.0	<1.0	6.26	92.31
	MW01 destroyed as of 8/5/2014						
MW02	2/25/2005	<1.0	<1.0	<1.0	<3.0	7.60	NA
	5/12/2005	<1.0	<1.0	<1.0	<2.0	7.65	NA
	8/9/2005	<1.0	<1.0	<1.0	<2.0	8.05	NA
	11/15/2005	<1.0	<1.0	<1.0	<2.0	6.75	NA
	2/25/2006	<1.0	<1.0	<1.0	<1.0	7.15	NA
	5/15/2006	<1.0	<1.0	<1.0	<1.0	6.07	NA
	8/16/2006	<1.0	<1.0	2.6	<1.0	8.83	NA
	11/7/2006	<1.0	<1.0	<1.0	<1.0	8.11	NA
	5/15/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	8/15/2007	<1.0	<1.0	<1.0	<1.0	5.90	NA
	11/14/2007	<1.0	<1.0	<1.0	<1.0	6.55	NA
	MW02 destroyed as of 2/19/2008						
MW02R	2/27/2008	120	2.0	930	9800	NM	NA
	5/31/2008	51	<1.0	320	860	7.10	91.78
	8/26/2008	5.7	<1.0	170	340	8.92	89.96
	12/1/2008	22	<1.0	710	5100	3.47	95.41
	2/25/2009	16	<1.0	490	5200	7.51	91.37
	5/27/2009	7.5	<1.0	370	3500	5.94	92.94
	8/24/2009	5.3	<1.0	310	1900	6.65	92.23
	11/10/2009	10	<1.0	460	3000	7.11	91.77
	2/12/2010	8.5	<1.0	500	3000	6.69	92.19
	5/4/2010	3.9	<1.0	300	1900	5.10	93.98
	8/27/2010	2.4	<1.0	230	720	6.94	91.94
	11/16/2010	4.1	<1.0	190	720	7.20	91.68
	2/22/2011	7.7	<1.0	190	580	7.42	91.46
	5/10/2011	4.9	<1.0	180	530	7.17	91.71
	8/25/2011	190	140	89	220	6.32	92.56
	11/18/2011	73	41	69	210	5.85	93.03
	2/21/2012	32	4.6	70	<1.0	5.73	93.15
	5/29/2012	22	1.8	70	220	5.70	93.18
	8/31/2012	8.4	<1.0	40	120	8.60	90.28
	11/26/2012	3.1	<1.0	40	98	8.45	90.43



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	2/28/2013	3.5	<1.0	53	110	8.53	90.35
	5/28/2013	1.1	<1.0	28	76	6.27	92.61
	8/27/2013	1.3	<1.0	11	66	9.02	89.86
	11/20/2013	1.1	<1.0	13.4	43.7	7.92	90.94
	12/24/2013	Surveyed - Not Sampled				8.58	90.43
	2/25/2014	<1.0	<1.0	14.7	34.8	8.71	90.17
	5/23/2014	<1.0	<1.0	<1.0	<1.0	6.97	92.04
	8/5/2014	1.0	<1.0	2.4	2.2	6.72	92.29
	11/17/2014	1.6	<1.0	8.0	20.2	8.16	90.85
	2/5/2015	1.2	<1.0	6.1	<1.0	9.76	89.25
	5/21/2015	<1.0	<1.0	<1.0	<1.0	6.06	92.95
	8/27/2015	1.4	1.1	1.1	2.0	8.00	91.01
	10/26/2015	<1.0	<1.0	7.1	23.4	8.85	90.16
	1/14/2016	<1.0	<1.0	6.0	12.1	8.53	90.48
	4/29/2016	<4.0	<4.0	<4.0	<4.0	5.67	93.34
	7/19/2016	<1.00	<1.00	1.53	1.65	5.87	93.14
	10/14/2016	1.10	<1.00	8.43	26.3	6.26	92.75
	1/20/2017	<1.00	<1.00	<1.00	2.00	6.77	92.24
	4/20/2017	<1.00	<1.00	1.29	2.79	7.28	91.73
	7/24/2017	<1.00	<1.00	<1.00	<1.00	3.45	95.56
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.86	91.17
	1/18/2018	<1.00	<1.00	<1.00	<1.00	6.44	91.59
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.45	91.58
	7/27/2018	<1.00	<1.00	1.42	3.86	6.20	91.83
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MW03	2/25/2005	340	<1.0	780	5042	8.86	NA
	5/12/2005	170	<1.0	280	5.7	7.95	NA
	8/9/2005	550	<1.0	420	2000	8.40	NA
	11/15/2005	160	<1.0	240	260	7.12	NA
	2/25/2006	220	<1.0	170	66	7.46	NA
	5/15/2006	190	<1.0	31	6.4	6.44	NA
	8/16/2006	170	<1.0	21	110	8.91	NA
	11/7/2006	190	<1.0	79	110	8.55	NA
	2/20/2007	180	<1.0	5.5	<1.0	NM	NA
	5/15/2007	150	<1.0	4.6	15	4.73	NA
	8/15/2007	120	<1.0	2.0	<1.0	5.50	NA
	11/14/2007	170	<1.0	1.3	<1.0	6.48	NA



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MW03 destroyed as of 2/19/2008							
MW03R	2/27/2008	2800	83	190	1100	NM	NA
	5/31/2008	9500	26	230	2100	6.65	91.50
	8/26/2008	3700	<1.0	160	290	7.62	90.53
	12/1/2008	20000	<1.0	480	690	4.07	94.08
	2/25/2009	1300	<1.0	14	32	6.29	90.86
	5/27/2009	290	<1.0	1.8	2.2	5.40	92.75
	8/24/2009	650	<1.0	2.4	2.6	5.83	92.32
	11/10/2009	1400	<1.0	2.8	2.8	7.49	91.16
	2/12/2010	8.7	<1.0	<1.0	<1.0	6.45	91.70
	5/4/2010	42	<1.0	<1.0	<1.0	4.51	93.64
	8/27/2010	59	<1.0	<1.0	<1.0	6.03	92.12
	11/16/2010	51	<1.0	<1.0	<1.0	6.67	91.48
	2/22/2011	12	<1.0	<1.0	<1.0	7.10	91.05
	5/10/2011	53	<1.0	<1.0	<1.0	6.71	91.44
	8/25/2011	17	<1.0	<1.0	<1.0	5.81	92.34
	11/18/2011	2.8	<1.0	<1.0	<1.0	5.36	92.79
	2/21/2012	14	<1.0	<1.0	<1.0	4.78	93.37
	5/29/2012	19	<1.0	<1.0	<1.0	4.72	93.43
	8/31/2012	<1.0	<1.0	<1.0	<1.0	7.95	90.20
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.22	89.93
	2/28/2013	<1.0	<1.0	<1.0	<1.0	8.08	90.07
	5/28/2013	<1.0	<1.0	<1.0	<1.0	5.45	92.70
	8/27/2013	<1.0	<1.0	<1.0	<1.0	8.06	90.09
	11/20/2013	2.6	<1.0	<1.0	<1.0	7.10	91.05
	12/24/2013	Surveyed - Not Sampled				8.14	90.25
	2/25/2014	37.2	<1.0	3.3	12.9	8.71	89.89
	5/23/2014	4.7	<1.0	<1.0	<1.0	6.85	91.54
	8/5/2014	1.2	<1.0	<1.0	<1.0	6.07	92.32
	11/17/2014	<1.0	<1.0	<1.0	<1.0	8.45	89.94
	2/5/2015	<1.0	<1.0	<1.0	<1.0	9.23	89.16
	5/21/2015	1.3	<1.0	<1.0	<1.0	6.39	92.00
	8/27/2015	3.1	<1.0	<1.0	<1.0	7.25	91.14
	10/26/2015	17.2	<1.0	2.0	4.8	8.30	90.09
	1/14/2016	<1.0	<1.0	<1.0	<1.0	7.95	90.44
	4/29/2016	<1.0	<1.0	<1.0	<1.0	5.11	93.28



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	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.50	92.89
	10/14/2016	<1.00	<1.00	<1.00	<1.00	6.20	92.19
	1/20/2017	<1.00	<1.00	<1.00	<1.00	6.43	91.96
	4/20/2017	2.25	<1.00	<1.00	<1.00	7.04	91.35
	7/24/2017	<1.00	<1.00	<1.00	<1.00	5.76	NA
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.29	90.89
	1/18/2018	<1.00	<1.00	<1.00	<1.00	3.95	93.23
	4/12/2018	5.99	<1.00	<1.00	<1.00	5.62	91.56
	7/27/2018	5.99	<1.00	<1.00	<1.00	5.68	91.50
MW04	8/9/2005	430	<1.0	290	3000	7.65	NA
	11/15/2005	Dry - Not Sampled				Dry	NA
	12/5/2005	300	<1.0	210	7.0	NM	NA
	2/25/2006	<1.0	<1.0	<1.0	<1.0	7.75	NA
	5/15/2006	<1.0	<1.0	<1.0	<1.0	7.60	NA
	8/22/2006	<1.0	<1.0	<1.0	<1.0	10.51	NA
	11/7/2006	350	<1.0	190	830	9.93	NA
	2/20/2007	190	<1.0	19	15	NM	NA
	5/15/2007	130	<1.0	1.6	<1.0	5.80	NA
	8/15/2007	110	2.3	<1.0	11	7.33	NA
	11/14/2007	<1.0	<1.0	<1.0	<1.0	7.41	NA
	MW04 destroyed as of 2/19/2008						
MW04R	2/27/2008	480	1.3	460	4200	NM	NA
	5/31/2008	120	<1.0	150	590	6.95	90.97
	8/26/2008	27	<1.0	49	48	8.73	89.19
	12/1/2008	34	<1.0	1.9	<1.0	4.24	93.68
	2/25/2009	28	<1.0	<1.0	<1.0	7.64	90.28
	5/27/2009	6.0	<1.0	<1.0	<1.0	5.54	92.38
	8/24/2009	5.6	<1.0	<1.0	<1.0	6.45	91.47
	11/10/2009	4.0	<1.0	<1.0	<1.0	6.79	91.13
	2/12/2010	2.0	<1.0	<1.0	<1.0	6.64	91.28
	5/4/2010	<1.0	<1.0	<1.0	<1.0	PVC Blocked	NA
	8/27/2010	<1.0	<1.0	<1.0	<1.0	7.04	90.88
	11/16/2010	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/22/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	5/10/2011	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA



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	8/25/2011	<1.0	<1.0	<1.0	<1.0	6.43	91.49
	11/18/2011	<1.0	<1.0	<1.0	<1.0	5.90	92.02
	2/21/2012	<1.0	<1.0	<1.0	<1.0	5.21	92.71
	5/29/2012	<1.0	<1.0	<1.0	<1.0	4.83	93.09
	8/31/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/26/2012	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/28/2013	<1.0	<1.0	<1.0	<1.0	8.24	89.68
	5/28/2013	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/27/2013	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/20/2013	<1.0	<1.0	<1.0	<1.0	7.50	90.42
	12/24/2013	Surveyed - Not Sampled				8.18	89.86
	2/25/2014	<1.0	<1.0	<1.0	<1.0	8.41	89.51
	5/23/2014	Inaccessible - Not Sampled				6.80	91.24
	5/27/2014	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	8/5/2014	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	11/17/2014	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	2/5/2015	<1.0	<1.0	<1.0	<1.0	9.50	88.54
	5/21/2015	<1.0	<1.0	<1.0	<1.0	5.68	92.36
	8/27/2015	<1.0	<1.0	<1.0	<1.0	PVC Bent	NA
	MW04R destroyed as of 8/31/2015						
MW04R2	8/31/2015	6.0	<4.0	249	2970	7.93	NA
	10/26/2015	<1.0	1.3	12.3	107	8.43	NA
	1/14/2016	<1.0	<1.0	4.6	25.2	8.18	NA
	4/29/2016	<1.0	<1.0	<1.0	<1.0	5.64	NA
	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.70	NA
	10/14/2016	<1.00	<1.00	<1.00	<1.00	6.28	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	6.81	NA
	4/20/2017	<1.00	<1.00	<1.00	<1.00	7.29	NA
	7/24/2017	<1.00	<1.00	<1.00	<1.00	6.39	NA
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.47	90.64
	1/18/2018	<1.00	<1.00	<1.00	<1.00	8.75	88.36
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.29	90.82
	7/27/2018	<1.00	<1.00	<1.00	<1.00	6.13	90.98
MW05	8/9/2005	<1.0	<1.0	<1.0	<2.0	9.80	87.39
	11/15/2005	4.0	<1.0	25	4.5	6.59	90.50



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	2/25/2006	3.8	<1.0	<1.0	<1.0	6.38	91.16
	5/15/2006	4.8	<1.0	<1.0	<1.0	6.24	91.30
	8/16/2006	5.6	<1.0	<1.0	<1.0	8.39	89.15
	11/7/2006	<1.0	<1.0	<1.0	<1.0	8.23	89.31
	2/20/2007	<1.0	<1.0	<1.0	<1.0	NM	90.00
	5/15/2007	<1.0	<1.0	<1.0	<1.0	4.85	92.69
	8/15/2007	<1.0	<1.0	<1.0	<1.0	5.52	92.02
	11/14/2007	<1.0	<1.0	<1.0	<1.0	6.23	91.31
	2/19/2008	<1.0	<1.0	<1.0	<1.0	5.25	92.29
	5/31/2008	<1.0	<1.0	<1.0	<1.0	5.57	92.03
	8/29/2008	2.0	<1.0	<1.0	<1.0	NM	NA
	12/1/2008	Inaccessible - Not Sampled				Inaccessible	NA
	2/25/2009	<1.0	<1.0	<1.0	<1.0	6.88	90.72
	5/27/2009	<1.0	<1.0	<1.0	<1.0	4.92	92.68
	8/24/2009	<1.0	<1.0	<1.0	<1.0	5.69	91.91
	11/10/2009	<1.0	<1.0	<1.0	<1.0	5.95	91.65
	2/12/2010	1.2	<1.0	<1.0	<1.0	5.99	91.61
	5/4/2010	<1.0	<1.0	<1.0	<1.0	4.28	93.32
	8/27/2010	1.4	<1.0	<1.0	<1.0	6.36	91.24
	11/16/2010	<1.0	<1.0	<1.0	<1.0	6.33	91.27
	2/22/2011	<1.0	<1.0	<1.0	<1.0	6.76	90.84
	5/10/2011	<1.0	<1.0	<1.0	<1.0	6.50	91.10
	8/25/2011	<1.0	<1.0	<1.0	<1.0	5.83	91.77
	11/18/2011	<1.0	<1.0	<1.0	<1.0	5.28	92.32
	2/21/2012	<1.0	<1.0	<1.0	<1.0	5.26	92.34
	5/29/2012	<1.0	<1.0	<1.0	<1.0	5.16	92.44
	8/31/2012	<1.0	<1.0	<1.0	<1.0	7.01	90.59
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.01	89.59
	2/28/2013	<1.0	<1.0	<1.0	<1.0	7.61	89.99
	5/28/2013	<1.0	<1.0	<1.0	<1.0	5.45	92.15
	8/27/2013	Inaccessible - Not Sampled				Inaccessible	NA
	8/30/2013	<1.0	<1.0	<1.0	<1.0	7.36	90.24
	11/20/2013	<1.0	<1.0	<1.0	<1.0	7.39	90.71
	12/24/2013	Surveyed - Not Sampled				7.82	89.74
	2/25/2014	<1.0	<1.0	<1.0	<1.0	8.41	89.69
	5/23/2014	<1.0	<1.0	<1.0	<1.0	7.25	90.31
	8/5/2014	<1.0	<1.0	<1.0	<1.0	5.98	91.58



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	11/17/2014	<1.0	<1.0	<1.0	<1.0	7.86	89.70
	2/5/2015	<1.0	<1.0	<1.0	<1.0	9.67	87.89
	5/21/2015	<1.0	<1.0	<1.0	<1.0	6.11	91.45
	8/27/2015	1.3	<1.0	<1.0	<1.0	6.91	90.65
	10/26/2015	<1.0	<1.0	<1.0	<1.0	7.46	90.10
	1/14/2016	<1.0	<1.0	<1.0	<1.0	7.38	90.18
	4/29/2016	<1.0	<1.0	<1.0	<1.0	4.88	92.68
	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.21	92.35
	10/14/2016	<1.00	<1.00	<1.00	<1.00	5.63	91.93
	1/20/2017	<1.00	<1.00	<1.00	<1.00	7.20	91.36
	4/20/2017	<1.00	<1.00	<1.00	<1.00	7.55	91.01
	7/24/2017	<1.00	<1.00	<1.00	<1.00	6.90	91.66
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.72	90.91
	1/18/2018	<1.00	<1.00	<1.00	<1.00	6.92	90.71
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.66	90.97
	7/27/2018	<1.00	<1.00	<1.00	<1.00	6.44	91.19
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MW06	8/9/2005	2.1	<1.0	2.1	23	6.28	NA
	11/15/2005	<1.0	<1.0	<1.0	<2.0	4.00	NA
	2/25/2006	<1.0	<1.0	<1.0	<1.0	5.81	NA
	5/15/2006	<1.0	<1.0	<1.0	<1.0	5.82	NA
	8/16/2006	<1.0	<1.0	<1.0	<1.0	8.75	NA
	11/7/2006	<1.0	<1.0	<1.0	<1.0	7.40	NA
	2/20/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/15/2007	<1.0	<1.0	<1.0	<1.0	3.64	NA
	8/15/2007	<1.0	<1.0	<1.0	<1.0	4.76	NA
	11/14/2007	<1.0	<1.0	<1.0	<1.0	5.86	NA
	2/27/2008	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/31/2008	<1.0	<1.0	<1.0	<1.0	NM	NA
	8/29/2008	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/1/2008	Inaccessible - Not Sampled				Inaccessible	NA
	2/25/2009	<1.0	<1.0	<1.0	<1.0	5.97	NA
	5/27/2009	<1.0	<1.0	<1.0	<1.0	4.35	NA
	8/24/2009	<1.0	<1.0	<1.0	<1.0	5.63	NA
	11/10/2009	<1.0	<1.0	<1.0	<1.0	NM	NA
	2/12/2010	<1.0	<1.0	<1.0	<1.0	5.40	NA
	5/4/2010	<1.0	<1.0	<1.0	<1.0	6.07	NA



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	8/27/2010	<1.0	<1.0	<1.0	<1.0	7.44	NA
	11/16/2010	<1.0	<1.0	<1.0	<1.0	5.91	NA
	2/22/2011	<1.0	<1.0	<1.0	<1.0	6.28	NA
	5/10/2011	<1.0	<1.0	<1.0	<1.0	5.92	NA
	8/25/2011	<1.0	<1.0	<1.0	<1.0	5.46	NA
	11/18/2011	<1.0	<1.0	<1.0	<1.0	4.69	NA
	2/21/2012	<1.0	<1.0	<1.0	<1.0	4.67	NA
	5/29/2012	<1.0	<1.0	<1.0	<1.0	4.64	NA
	8/31/2012	<1.0	<1.0	<1.0	<1.0	6.66	NA
	11/26/2012	<1.0	<1.0	<1.0	<1.0	7.68	NA
	3/4/2013	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/28/2013	<1.0	<1.0	<1.0	<1.0	5.39	NA
	8/27/2013	Inaccessible - Not Sampled				Inaccessible	NA
	8/30/2013	<1.0	<1.0	<1.0	<1.0	7.41	NA
	11/20/2013	<1.0	<1.0	<1.0	<1.0	6.91	NA
	12/24/2013	Surveyed - Not Sampled				7.09	90.50
	2/25/2014	<1.0	<1.0	<1.0	<1.0	7.39	NA
	5/23/2014	<1.0	<1.0	<1.0	<1.0	8.34	NA
	8/5/2014	Not Found - Not Sampled				NM	NA
	11/17/2014	<1.0	<1.0	<1.0	<1.0	10.24	NA
	2/5/2015	<1.0	<1.0	<1.0	<1.0	10.50	NA
	5/21/2015	<1.0	<1.0	<1.0	<1.0	7.45	NA
	8/27/2015	5.4	<1.0	<1.0	<1.0	9.24	NA
	10/26/2015	<1.0	<1.0	<1.0	<1.0	9.50	NA
	1/14/2016	<1.0	<1.0	<1.0	<1.0	9.06	NA
	4/29/2016	<1.0	<1.0	<1.0	<1.0	6.68	NA
	7/19/2016	4.47	<1.00	<1.00	<1.00	7.36	NA
	10/14/2016	<1.00	<1.00	<1.00	<1.00	6.96	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	5.49	92.32
	4/20/2017	<1.00	<1.00	<1.00	<1.00	5.90	91.91
	7/24/2017	<1.00	<1.00	<1.00	<1.00	5.80	92.01
	10/25/2017	<1.00	<1.00	<1.00	<1.00	5.34	91.42
	1/18/2018	<1.00	<1.00	<1.00	<1.00	5.17	91.59
	4/12/2018	<1.00	<1.00	<1.00	<1.00	4.96	91.80
	7/27/2018	<1.00	<1.00	<1.00	<1.00	5.00	91.76
MW07	2/25/2006	<1.0	<1.0	<1.0	<1.0	7.34	90.74

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	5/15/2006	<1.0	<1.0	<1.0	<1.0	7.48	90.60
	8/16/2006	<1.0	<1.0	<1.0	<1.0	10.33	87.75
	11/7/2006	<1.0	<1.0	<1.0	<1.0	9.40	88.68
	2/20/2007	<1.0	<1.0	<1.0	<1.0	NM	89.41
	5/15/2007	<1.0	<1.0	<1.0	<1.0	5.70	92.39
	8/15/2007	<1.0	<1.0	<1.0	<1.0	6.89	91.20
	11/14/2007	<1.0	<1.0	<1.0	<1.0	7.13	90.96
	2/19/2008	<1.0	<1.0	<1.0	<1.0	6.92	91.97
	5/31/2008	<1.0	<1.0	<1.0	<1.0	8.09	90.80
	8/26/2008	<1.0	<1.0	<1.0	<1.0	10.01	88.88
	12/1/2008	<1.0	<1.0	<1.0	<1.0	7.05	91.84
	2/25/2009	<1.0	<1.0	<1.0	<1.0	8.76	90.13
	5/27/2009	<1.0	<1.0	<1.0	<1.0	6.33	92.56
	8/24/2009	<1.0	<1.0	<1.0	<1.0	7.67	91.22
	11/10/2009	<1.0	<1.0	<1.0	<1.0	7.89	91.00
	2/12/2010	<1.0	<1.0	<1.0	<1.0	7.74	91.15
	5/4/2010	<1.0	<1.0	<1.0	<1.0	6.12	92.77
	8/27/2010	<1.0	<1.0	<1.0	<1.0	8.12	90.77
	11/16/2010	<1.0	<1.0	<1.0	<1.0	7.95	90.94
	2/22/2011	<1.0	<1.0	<1.0	<1.0	8.47	90.42
	5/10/2011	<1.0	<1.0	<1.0	<1.0	8.23	90.66
	8/25/2011	<1.0	<1.0	<1.0	<1.0	7.51	91.38
	11/18/2011	<1.0	<1.0	<1.0	<1.0	7.04	91.85
	2/21/2012	<1.0	<1.0	<1.0	<1.0	7.06	91.83
	5/29/2012	<1.0	<1.0	<1.0	<1.0	6.97	91.92
	8/31/2012	<1.0	<1.0	<1.0	<1.0	10.01	88.88
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.92	89.97
	2/28/2013	<1.0	<1.0	<1.0	<1.0	9.35	89.54
	5/28/2013	<1.0	<1.0	<1.0	<1.0	7.04	91.85
	8/27/2013	<1.0	<1.0	<1.0	<1.0	10.22	88.67
	11/20/2013	<1.0	<1.0	<1.0	<1.0	8.63	90.26
	12/24/2013	Surveyed - Not Sampled				8.26	89.74
	2/25/2014	<1.0	<1.0	<1.0	<1.0	9.58	89.31
	5/23/2014	<1.0	<1.0	<1.0	<1.0	7.16	90.84
	8/5/2014	<1.0	<1.0	<1.0	<1.0	6.51	91.49
	11/17/2014	1.2	<1.0	<1.0	<1.0	8.74	89.26
	2/5/2015	<1.0	<1.0	<1.0	<1.0	9.57	88.43



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	5/21/2015	<1.0	<1.0	<1.0	<1.0	6.86	91.14
	8/27/2015	<1.0	<1.0	<1.0	<1.0	8.03	89.97
	10/26/2015	<1.0	<1.0	<1.0	<1.0	8.53	89.47
	1/14/2016	<1.0	<1.0	<1.0	<1.0	8.50	89.50
	4/29/2016	<1.0	<1.0	<1.0	<1.0	6.07	91.93
	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.88	92.12
	10/14/2016	<1.00	<1.00	<1.00	<1.00	6.30	91.70
	1/20/2017	<1.00	<1.00	<1.00	<1.00	7.08	90.92
	4/20/2017	<1.00	<1.00	<1.00	<1.00	7.37	90.63
	7/24/2017	<1.00	<1.00	<1.00	<1.00	6.53	91.47
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.60	90.46
	1/18/2018	<1.00	<1.00	<1.00	<1.00	6.77	90.29
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.57	90.49
	7/27/2018	<1.00	<1.00	<1.00	<1.00	6.26	90.80
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MW08	2/25/2006	<1.0	<1.0	<1.0	<1.0	7.90	90.19
	5/15/2006	<1.0	<1.0	<1.0	<1.0	7.80	90.29
	8/16/2006	<1.0	<1.0	<1.0	<1.0	10.69	87.40
	11/7/2006	<1.0	<1.0	<1.0	<1.0	9.52	88.57
	2/20/2007	<1.0	<1.0	<1.0	<1.0	NM	89.14
	5/15/2007	<1.0	<1.0	<1.0	<1.0	5.92	92.17
	8/15/2007	<1.0	<1.0	<1.0	<1.0	7.19	90.90
	11/14/2007	<1.0	<1.0	<1.0	<1.0	7.46	90.63
	2/19/2008	<1.0	<1.0	<1.0	<1.0	6.36	91.73
	5/31/2008	<1.0	<1.0	<1.0	<1.0	7.04	91.05
	8/26/2008	4.0	<1.0	<1.0	<1.0	7.75	90.34
	12/1/2008	<1.0	<1.0	<1.0	<1.0	6.47	91.62
	2/25/2009	<1.0	<1.0	<1.0	<1.0	7.74	90.35
	5/27/2009	<1.0	<1.0	<1.0	<1.0	5.51	92.58
	8/24/2009	<1.0	<1.0	<1.0	<1.0	7.04	91.05
	11/10/2009	<1.0	<1.0	<1.0	<1.0	7.02	91.07
	2/12/2010	<1.0	<1.0	<1.0	<1.0	6.97	91.12
	5/4/2010	<1.0	<1.0	<1.0	<1.0	5.31	92.78
	8/27/2010	<1.0	<1.0	<1.0	<1.0	7.33	90.76
	11/16/2010	<1.0	<1.0	<1.0	<1.0	7.10	90.99
	2/22/2011	<1.0	<1.0	<1.0	<1.0	7.63	90.46
	5/10/2011	<1.0	<1.0	<1.0	<1.0	7.40	90.69



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	8/25/2011	<1.0	<1.0	<1.0	<1.0	6.67	91.42
	11/18/2011	<1.0	<1.0	<1.0	<1.0	6.24	91.85
	2/21/2012	<1.0	<1.0	<1.0	<1.0	6.20	91.89
	5/29/2012	<1.0	<1.0	<1.0	<1.0	6.18	91.91
	8/31/2012	<1.0	<1.0	<1.0	<1.0	9.07	89.02
	11/26/2012	<1.0	<1.0	<1.0	<1.0	7.97	90.12
	2/28/2013	<1.0	<1.0	<1.0	<1.0	8.46	89.63
	5/28/2013	<1.0	<1.0	<1.0	<1.0	6.15	91.94
	8/27/2013	<1.0	<1.0	<1.0	<1.0	9.46	88.63
	11/20/2013	<1.0	<1.0	<1.0	<1.0	7.80	90.29
	12/24/2013	Surveyed - Not Sampled				8.79	89.77
	2/25/2014	<1.0	<1.0	<1.0	<1.0	8.84	89.25
	5/23/2014	<1.0	<1.0	1.5	<1.0	8.16	90.40
	8/5/2014	<1.0	<1.0	<1.0	<1.0	7.25	91.31
	11/17/2014	1.2	<1.0	<1.0	<1.0	9.36	89.20
	2/5/2015	<1.0	<1.0	<1.0	<1.0	10.15	88.41
	5/21/2015	1.2	<1.0	4.4	<1.0	7.95	90.61
	8/27/2015	<1.0	<1.0	<1.0	<1.0	8.64	89.92
	10/26/2015	<1.0	<1.0	<1.0	<1.0	9.10	89.46
	1/14/2016	<1.0	<1.0	<1.0	<1.0	8.97	89.59
	4/29/2016	<1.0	<1.0	<1.0	<1.0	6.63	91.93
	7/19/2016	<1.00	<1.00	<1.00	<1.00	6.48	92.08
	10/14/2016	<1.00	<1.00	<1.00	<1.00	6.81	91.75
	1/20/2017	<1.00	<1.00	<1.00	<1.00	7.50	91.06
	4/20/2017	<1.00	<1.00	<1.00	<1.00	7.92	90.64
	7/24/2017	<1.00	<1.00	<1.00	<1.00	7.10	91.46
	10/25/2017	<1.00	<1.00	<1.00	<1.00	7.15	90.50
	1/18/2018	<1.00	<1.00	<1.00	<1.00	7.25	90.40
	4/12/2018	<1.00	<1.00	<1.00	<1.00	7.04	90.61
	7/27/2018	<1.00	<1.00	<1.00	<1.00	6.84	90.81
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MW09	2/25/2006	89	7.0	120	420	7.05	NA
	5/15/2006	59	<1.0	81	290	7.21	NA
	8/16/2006	40	<1.0	230	780	9.65	NA
	11/7/2006	36	<1.0	86	420	9.79	NA
	2/20/2007	21	<1.0	33	58	NM	NA
	5/15/2007	39	<1.0	<1.0	<1.0	5.05	NA



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UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	8/15/2007	22	<1.0	<1.0	<1.0	6.62	NA
	11/14/2007	49	<1.0	<1.0	<1.0	7.00	NA
	MW09 destroyed as of 2/19/2008						
MW09R	2/19/2008	Dry -Not Sampled				Dry	NA
	5/31/2008	16	<1.0	44	73	7.11	91.19
	8/26/2008	11	<1.0	7.6	7.7	9.84	88.46
	12/1/2008	13	<1.0	2.4	<1.0	5.19	93.11
	2/25/2009	1.6	<1.0	<1.0	<1.0	7.82	90.48
	5/27/2009	2.0	<1.0	<1.0	<1.0	5.88	92.42
	8/24/2009	2.4	<1.0	<1.0	<1.0	6.85	91.45
	11/10/2009	<1.0	<1.0	<1.0	<1.0	7.29	91.01
	2/12/2010	<1.0	<1.0	<1.0	<1.0	6.92	91.38
	5/4/2010	<1.0	<1.0	<1.0	<1.0	5.33	92.97
	8/27/2010	<1.0	<1.0	<1.0	<1.0	7.47	90.83
	11/16/2010	<1.0	<1.0	<1.0	<1.0	7.28	91.02
	2/22/2011	<1.0	<1.0	<1.0	<1.0	7.61	90.69
	5/10/2011	<1.0	<1.0	<1.0	<1.0	7.45	90.85
	8/25/2011	Removed from monitoring				NM	NA
	12/24/2013	Surveyed - Not Sampled				8.44	90.06
MW10	5/31/2011	<1.0	<1.0	<1.0	<1.0	4.08	NA
	8/25/2011	<1.0	<1.0	<1.0	<1.0	5.55	NA
	11/18/2011	<1.0	<1.0	<1.0	<1.0	5.46	NA
	2/21/2012	<1.0	<1.0	<1.0	<1.0	4.87	NA
	5/29/2012	<1.0	<1.0	<1.0	<1.0	4.87	NA
	8/31/2012	<1.0	<1.0	<1.0	<1.0	7.01	NA
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.20	NA
	2/28/2013	Not Found - Not Sampled/construction				Not Found	NA
	5/28/2013	Not Found - Not Sampled				Not Found	NA
	MW10 destroyed as of 8/27/2013						
MW11	5/31/2011	<1.0	<1.0	<1.0	<1.0	3.52	NA
	8/25/2011	<1.0	<1.0	<1.0	<1.0	4.93	NA
	11/18/2011	<1.0	<1.0	<1.0	<1.0	4.78	NA
	2/21/2012	<1.0	<1.0	<1.0	<1.0	4.29	NA
	5/29/2012	<1.0	<1.0	<1.0	<1.0	4.29	NA

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	8/31/2012	<1.0	<1.0	<1.0	<1.0	6.85	NA
	11/26/2012	Not Found - Not Sampled				Not Found	NA
	2/28/2013	Not Found - Not Sampled/construction				Not Found	NA
	5/28/2013	Not Found - Not Sampled				Not Found	NA
	MW11 destroyed as of 8/27/2013						
MW11R	8/31/2015	<1.0	<1.0	<1.0	<1.0	6.65	NA
	10/26/2015	<1.0	1.0	<1.0	<1.0	6.74	NA
	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.14	NA
	10/14/2016	<1.00	<1.00	<1.00	<1.00	4.77	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	5.71	NA
	4/20/2017	<1.00	<1.00	<1.00	<1.00	6.28	NA
	7/24/2017	<1.00	<1.00	<1.00	<1.00	5.81	NA
	10/25/2017	<1.00	<1.00	<1.00	<1.00	5.30	91.01
	1/18/2018	<1.00	<1.00	<1.00	<1.00	5.43	90.88
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.17	90.14
MW12	8/31/2015	<1.0	<1.0	<1.0	<1.0	7.59	NA
	10/26/2015	692	<1.0	1.4	<1.0	8.02	NA
	MW12 destroyed as of 1/14/2016						
MW12R	7/19/2016	<1.00	<1.00	<1.00	<1.00	5.74	NA
	10/14/2016	<1.00	<1.00	<1.00	<1.00	5.89	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	7.25	NA
	4/20/2017	<1.00	<1.00	<1.00	<1.00	7.56	NA
	7/24/2017	<1.00	<1.00	<1.00	<1.00	6.42	NA
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.28	90.64
	1/18/2018	<1.00	<1.00	<1.00	<1.00	6.74	90.18
	4/12/2018	<1.00	<1.00	<1.00	<1.00	6.42	90.50
MW21	7/19/2016	<1.00	<1.00	<1.00	<1.00	NM	NA
	10/14/2016	<1.00	<1.00	<1.00	<1.00	NM	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	5.51	NA
	4/20/2017	<1.00	<1.00	<1.00	<1.00	5.94	NA
	7/24/2017	<1.00	<1.00	<1.00	<1.00	5.36	NA
	10/25/2017	<1.00	<1.00	<1.00	<1.00	5.09	91.00
	1/18/2018	<1.00	<1.00	<1.00	<1.00	5.64	90.45

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	4/12/2018	<1.00	<1.00	<1.00	<1.00	4.95	91.14
XCEL05	2/25/2005	730	<3.0	140	179.3	NM	NA
	5/12/2005	330	<1.0	52	67	NM	NA
	8/18/2005	97	<1.0	170	190	7.61	NA
	11/15/2005	320	<1.0	290	920	NM	NA
	2/25/2006	230	<1.0	240	840	NM	NA
	5/15/2006	<1.0	<1.0	<1.0	<1.0	NM	NA
	8/28/2006	310	<1.0	260	840	NM	NA
	11/7/2006	190	<1.0	300	460	NM	NA
	2/20/2007	49	<1.0	81	5.4	NM	NA
	5/15/2007	9.6	<1.0	56	480	NM	NA
	8/15/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	11/14/2007	13	<1.0	<1.0	<1.0	NM	NA
XCEL05 destroyed as of 2/19/2008							
XCEL05R	2/27/2008	190	1.2	100	1200	NM	NA
	5/31/2008	140	<1.0	94	760	NM	NA
	8/29/2008	110	<1.0	3.1	<1.0	NM	NA
	12/1/2008	Inaccessible - Not Sampled				Inaccessible	NA
	2/25/2009	7.8	<1.0	1.7	2.9	7.05	91.07
	5/27/2009	20	<1.0	<1.0	<1.0	5.21	92.91
	8/24/2009	91	<1.0	3.5	24	6.23	91.89
	11/10/2009	120	<1.0	17	6.5	6.74	91.38
	2/12/2010	130	<1.0	27	130	6.28	91.84
	5/4/2010	87	<1.0	18	77	4.68	93.44
	8/27/2010	110	<1.0	18	3.0	6.58	91.54
	11/16/2010	210	<1.0	26	3.3	6.66	91.46
	2/22/2011	130	<1.0	17	14	6.95	91.17
	5/10/2011	190	<1.0	<1.0	<1.0	6.64	91.48
	8/25/2011	120	<1.0	20	5.7	6.14	91.98
	11/18/2011	250	<1.0	9.8	<1.0	4.93	93.19
	2/21/2012	150	<1.0	6.5	<1.0	5.35	92.77
	5/29/2012	75	<1.0	<1.0	<1.0	5.35	92.77
	8/31/2012	58	<1.0	<1.0	<1.0	7.84	90.28
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.69	89.43
	2/28/2013	4.3	<1.0	<1.0	<1.0	7.93	90.19



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	5/28/2013	2.9	<1.0	<1.0	<1.0	5.77	92.35
	8/27/2013	Inaccessible - Not Sampled				Inaccessible	NA
	8/30/2013	1.1	<1.0	<1.0	<1.0	7.88	90.24
	11/20/2013	91.2	<1.0	3.6	2.4	7.35	90.77
	12/24/2013	Surveyed - Not Sampled				7.52	90.24
	2/25/2014	484	<1.0	118	251	8.15	89.97
	5/23/2014	275	<1.0	32.7	50.1	7.31	90.99
	8/5/2014	Not Found - Not Sampled				NM	NA
	11/17/2014	98.4	<4.0	25.9	<4.0	8.70	89.60
	2/5/2015	148	<1.0	21.1	5.2	9.24	89.06
	5/21/2015	<1.0	<1.0	<1.0	<1.0	5.46	92.84
	8/27/2015	160	<1.0	23.4	11.8	7.81	90.49
	10/26/2015	150	<1.0	7.0	7.5	8.12	90.18
	1/14/2016	146	<1.0	11.8	8.3	7.96	90.34
	4/29/2016	1.1	<1.0	<1.0	<1.0	5.30	93.00
	7/19/2016	11.2	<1.00	<1.00	<1.00	5.86	92.44
	10/14/2016	46.9	<1.00	<1.00	<1.00	5.92	92.38
	1/20/2017	8.92	<4.00	<4.00	<4.00	6.49	91.81
	4/20/2017	3.65	<1.00	<1.00	<1.00	7.04	91.26
	7/24/2017	7.15	<1.00	<1.00	<1.00	6.40	91.90
	10/25/2017	<1.00	<1.00	<1.00	<1.00	6.24	91.11
	1/18/2018	<1.00	<1.00	<1.00	<1.00	5.65	91.70
	4/12/2018	13.9	<1.00	2.28	16.7	5.91	91.44
	7/27/2018	<1.00	<1.00	2.17	7.01	5.92	91.43
XCEL06	2/25/2005	2.0	<1.0	<1.0	3.0	NM	NA
	5/12/2005	2.5	<1.0	1.1	2.5	NM	NA
	8/18/2005	<1.0	<1.0	<1.0	<2.0	7.36	NA
	11/15/2005	<1.0	<1.0	<1.0	<2.0	NM	NA
	2/25/2006	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/15/2006	<1.0	<1.0	<1.0	<1.0	NM	NA
	8/28/2006	<1.0	<1.0	<1.0	<1.0	NM	NA
	11/7/2006	<1.0	<1.0	<1.0	<1.0	NM	NA
	2/20/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/15/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	8/15/2007	<1.0	<1.0	<1.0	<1.0	NM	NA
	11/14/2007	8.8	1.0	2.9	330	NM	NA



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	2/19/2008	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/31/2008	1.4	<1.0	<1.0	<1.0	NM	NA
	8/29/2008	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/1/2008	Inaccessible - Not Sampled				Inaccessible	NA
	2/25/2009	<1.0	<1.0	<1.0	<1.0	6.28	NA
	5/27/2009	<1.0	<1.0	<1.0	<1.0	4.75	NA
	8/24/2009	Not Sampled				NM	NA
	11/10/2009	<1.0	<1.0	<1.0	<1.0	6.83	NA
	2/12/2010	4.2	<1.0	<1.0	<1.0	5.61	NA
	5/4/2010	16	<1.0	<1.0	<1.0	4.11	NA
	8/27/2010	26	<1.0	<1.0	<1.0	6.57	NA
	11/16/2010	41	<1.0	<1.0	<1.0	6.00	NA
	2/22/2011	<1.0	<1.0	<1.0	<1.0	NM	NA
	5/10/2011	2.4	<1.0	<1.0	<1.0	6.05	NA
	8/25/2011	6.9	<1.0	<1.0	<1.0	5.43	NA
	11/18/2011	<1.0	<1.0	<1.0	<1.0	4.31	NA
	2/21/2012	1.1	<1.0	<1.0	<1.0	4.80	NA
	5/29/2012	42	<1.0	<1.0	<1.0	4.80	NA
	8/31/2012	78	<1.0	<1.0	<1.0	6.95	NA
	11/26/2012	<1.0	<1.0	<1.0	<1.0	8.00	NA
	2/28/2013	11	<1.0	<1.0	<1.0	7.46	NA
	5/28/2013	3.5	<1.0	<1.0	<1.0	5.15	NA
	8/27/2013	Inaccessible - Not Sampled				Inaccessible	NA
	8/30/2013	<1.0	<1.0	<1.0	<1.0	NM	NA
	11/20/2013	<1.0	<1.0	<1.0	<1.0	6.75	NA
	12/24/2013	Surveyed - Not Sampled				6.70	90.16
	2/25/2014	152	<1.0	<1.0	<1.0	7.54	NA
	5/23/2014	<1.0	<1.0	<1.0	<1.0	6.39	NA
	8/5/2014	2.8	<1.0	<1.0	<1.0	5.94	NA
	11/17/2014	1.3	<1.0	<1.0	<1.0	7.59	NA
	2/5/2015	102	<1.0	<1.0	<1.0	9.51	NA
	5/21/2015	<1.0	<1.0	<1.0	<1.0	5.15	NA
	8/27/2015	<1.0	<1.0	<1.0	<1.0	6.91	NA
	10/26/2015	182	<1.0	<1.0	<1.0	7.32	NA
	1/14/2016	163	<1.0	<1.0	<1.0	7.06	NA
	4/29/2016	7.6	<1.0	<1.0	<1.0	4.68	NA
	7/19/2016	228	<1.00	<1.00	<1.00	5.38	NA



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRR 38 PAN AM G #1
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	10/14/2016	64.2	<1.00	<1.00	<1.00	5.20	NA
	1/20/2017	<1.00	<1.00	<1.00	<1.00	6.03	91.74
	4/20/2017	1.75	<1.00	<1.00	<1.00	6.59	91.18
	7/24/2017	32.0	<1.00	<1.00	<1.00	6.07	91.70
	10/25/2017	1.64	<1.00	<1.00	<1.00	6.06	90.78
	1/18/2018	<1.00	<1.00	<1.00	<1.00	5.37	91.47
	4/12/2018	Product - Not Sampled				5.56 (0.03)	91.28
	5/11/2018	<1.00	<1.00	<1.00	<1.00	5.11 (0.02)	91.73
	7/27/2018	15.5	<1.00	<1.00	<1.00	5.53	91.31
COGCC Allowable Levels		5	1000	680	10000		

Notes: COGCC - Colorado Oil and Gas Conservation Commission

Elev. - elevation

ft bgs - feet below ground surface

GW - groundwater

NA - not analyzed/not available

NM - not measured

µg/L - micrograms per liter

< - less than laboratory reporting limit

Bold indicates result exceeds allowable level

Excavation groundwater depth is approximate



August 02, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - UPRR 38 PanAm G#1

Project Number - KMG0574/WO#8833471

Attached are your analytical results for KMG - UPRR 38 PanAm G#1 received by Origins Laboratory, Inc. July 27, 2018. This project is associated with Origins project number Y807405-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW02R	Y807405-01	Water	July 27, 2018 10:40	07/27/2018 15:45
MW03R	Y807405-02	Water	July 27, 2018 10:50	07/27/2018 15:45
MW04R2	Y807405-03	Water	July 27, 2018 11:00	07/27/2018 15:45
MW05	Y807405-04	Water	July 27, 2018 12:40	07/27/2018 15:45
MW06	Y807405-05	Water	July 27, 2018 12:50	07/27/2018 15:45
MW07	Y807405-06	Water	July 27, 2018 11:10	07/27/2018 15:45
MW08	Y807405-07	Water	July 27, 2018 11:20	07/27/2018 15:45
XCEL05R	Y807405-08	Water	July 27, 2018 13:00	07/27/2018 15:45
XCEL06	Y807405-09	Water	July 27, 2018 13:10	07/27/2018 15:45

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

ORIGINS
LABORATORY, INC

Y907405

1725 Elk Place, Denver, CO 80211
Laboratory # - 303.433.1322

Client: LT Environmental, Inc.
Project: KMG - UPRR 38 PanAm G#1
Project Manager: Brian Sulzberger
Project Number: KMG0574/WO#88334714

Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analyses
01-001	MM02R	Water	07/27	1040	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
02-001	MM03R	Water	07/27	1050	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
03-001	MM04R2	Water	07/27	1100	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
04-001	MM05	Water	07/27	1240	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
05-001	MM06	Water	07/27	1250	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
06-001	MM07	Water	07/27	1110	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
07-001	MM08	Water	07/27	1120	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
08-001	MM11R	Water				12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
09-001	MM12R	Water				12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
10-001	MM21	Water				12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
11-001	XCEL05R	Water	07/27	1300	MK	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C

Relinquished By: *Nancy Kild* Date/Time: 07/27/10 1412
Received By: *[Signature]* Date/Time: 07/27/10 1545
Relinquished By: *[Signature]* Date/Time: 07/27/10 1545
Received By: *[Signature]* Date/Time: 07/27/10 1545
Temperature on Receipt: 7.1
Turn Around Time: ☐ Same Day ☐ 72-hr ☐ Standard ☐ 48-hr

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

28

Y807405

ORIGINS
LABORATORY, INC

1725 Elk Place, Denver, CO 80211
Laboratory # - 303.433.1322

12-001	XCEL06	Water	07/27	1310	MK	02_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
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Relinquished By Date / Time 07/27/18 1402	Relinquished By Date / Time 7/27/18 1545
Received By Date / Time 7/27/18 1102	Received By Date / Time 7/27/18 1545

Temperature on Receipt: ☐ 72-hr ☒ Standard

Turn Around Time: ☐ Same Day ☐ 24-hr ☐ 48-hr

Origins Laboratory, Inc.

Jen Pellegrini

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y805405

Client: LTE

Client Project ID: KMG-UPRR 38 PanAm G #1

Checklist Completed by: JG

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 7/30/2018

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid ☒ Water ☐ Other: ☐ (Describe)

Cooler Number/Temperature: 1 / 7.1 °C 1 / 1 °C 1 / 1 °C 1 / 1 °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>Same Day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JG

Date/Time Reviewed 7/31/18

Origins Laboratory, Inc.

Jen Pellegrini

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW02R

7/27/2018 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	JTD	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	1.42	1.00	"	"	"	JTD	"	"	
Xylenes, total	3.86	1.00	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.7 %	84-121	"	"	"
Surrogate: Toluene-d8	102 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	110 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW03R

7/27/2018 10:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-02 (Water)

BTEX by EPA 8260C

Benzene	5.99	1.00	ug/L	1	B8G3108	JTD	07/31/2018	08/01/2018	
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.4 %	84-121	"	"	"
Surrogate: Toluene-d8	105 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW04R2

7/27/2018 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121	"	"	"
Surrogate: Toluene-d8	102 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW05

7/27/2018 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.0 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW06

7/27/2018 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.5 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW07

7/27/2018 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.4 %	84-121	"	"	"
Surrogate: Toluene-d8	104 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

MW08

7/27/2018 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.8 %	84-121	"	"	"
Surrogate: Toluene-d8	104 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

XCEL05R

7/27/2018 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-08 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	2.17	1.00	"	"	"	ZZZ	"	"	
Xylenes, total	7.01	1.00	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.1 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	105 %	84-114	"	"	"

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

XCEL06

7/27/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y807405-09 (Water)

BTEX by EPA 8260C

Benzene	15.5	1.00	ug/L	1	B8G3108	ZZZ	07/31/2018	08/01/2018	
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121			"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	126 %	84-114			"	"	"	S-04

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8G3108 - EPA 5030B (Water)										
Blank (B8G3108-BLK1)					Prepared: 07/31/2018 Analyzed: 07/31/2018					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	59		"	62.5		95.2	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8G3108 - EPA 5030B (Water)										
Blank (B8G3108-BLK2)					Prepared: 07/31/2018 Analyzed: 07/31/2018					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	64		"	62.5	103		85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8G3108 - EPA 5030B (Water)										
LCS (B8G3108-BS1)					Prepared: 07/31/2018 Analyzed: 07/31/2018					
Benzene	50.8	1.00	ug/L	50.0		102	73.3-129			
Toluene	46.6	1.00	"	50.0		93.3	76.2-123			
Ethylbenzene	46.1	1.00	"	50.0		92.2	73.6-130			
m,p-Xylene	92.2	2.00	"	100		92.2	76.1-126			
o-Xylene	46.5	1.00	"	50.0		93.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.7	84-121			
Surrogate: Toluene-d8	60		"	62.5		96.0	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	84-114			

Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8G3108 - EPA 5030B (Water)										
LCS (B8G3108-BS2)					Prepared: 07/31/2018 Analyzed: 07/31/2018					
Benzene	44.4	1.00	ug/L	50.0		88.8	73.3-129			
Toluene	47.0	1.00	"	50.0		94.0	76.2-123			
Ethylbenzene	48.2	1.00	"	50.0		96.5	73.6-130			
m,p-Xylene	96.5	2.00	"	100		96.5	76.1-126			
o-Xylene	48.2	1.00	"	50.0		96.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		93.7	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8G3108 - EPA 5030B (Water)

Matrix Spike (B8G3108-MS1)		Source: Y807405-01			Prepared: 07/31/2018 Analyzed: 08/01/2018					
Benzene	49.4	1.00	ug/L	50.0	0.320	98.2	74-130			
Toluene	49.9	1.00	"	50.0	0.140	99.5	73-131			
Ethylbenzene	55.6	1.00	"	50.0	1.42	108	76-132			
m,p-Xylene	111	2.00	"	100	3.86	107	69-139			
o-Xylene	53.2	1.00	"	50.0	0.230	106	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.3	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	84-114			

Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8G3108 - EPA 5030B (Water)

Matrix Spike (B8G3108-MS2)		Source: Y807405-02			Prepared: 07/31/2018 Analyzed: 08/01/2018					
Benzene	51.1	1.00	ug/L	50.0	5.99	90.2	74-130			
Toluene	49.9	1.00	"	50.0	ND	99.8	73-131			
Ethylbenzene	52.9	1.00	"	50.0	0.150	106	76-132			
m,p-Xylene	104	2.00	"	100	0.190	104	69-139			
o-Xylene	52.1	1.00	"	50.0	ND	104	74-131			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		89.0	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8G3108 - EPA 5030B (Water)

Matrix Spike Dup (B8G3108-MSD1)		Source: Y807405-01			Prepared: 07/31/2018 Analyzed: 08/01/2018					
Benzene	45.6	1.00	ug/L	50.0	0.320	90.6	74-130	7.98	20	
Toluene	46.2	1.00	"	50.0	0.140	92.1	73-131	7.64	20	
Ethylbenzene	49.1	1.00	"	50.0	1.42	95.4	76-132	12.2	20	
m,p-Xylene	101	2.00	"	100	3.86	96.9	69-139	9.59	20	
o-Xylene	49.1	1.00	"	50.0	0.230	97.8	74-131	8.05	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		90.6	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		108	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8G3108 - EPA 5030B (Water)

Matrix Spike Dup (B8G3108-MSD2)		Source: Y807405-02			Prepared: 07/31/2018 Analyzed: 08/01/2018					
Benzene	53.2	1.00	ug/L	50.0	5.99	94.4	74-130	4.03	20	
Toluene	52.8	1.00	"	50.0	ND	106	73-131	5.67	20	
Ethylbenzene	54.7	1.00	"	50.0	0.150	109	76-132	3.29	20	
m,p-Xylene	108	2.00	"	100	0.190	108	69-139	4.20	20	
o-Xylene	54.1	1.00	"	50.0	ND	108	74-131	3.71	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		90.5	84-121			
Surrogate: Toluene-d8	66		"	62.5		105	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Project Number: KMG0574/WO#88334714
Project: KMG - UPRR 38 PanAm G#1

Notes and Definitions

U Sample is Non-Detect.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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