3R - 447

Q2 2012 GWMR

10 / 24 / 2012

Animas Environmental Services LLC

October 24, 2012

Glenn von Gonten
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2nd Quarter 2012 Periodic Progress Report
Benson-Montin-Greer Highway 537 Llaves Pipeline 2008 Oil Release
Rio Arriba County, New Mexico

Dear Mr. von Gonten:

On behalf of Benson-Montin-Greer Drilling Corporation (BMG), Animas Environmental Services, LLC (AES) has prepared this Periodic Progress Report detailing groundwater monitoring and sampling for the 2nd quarter of 2012 at the BMG Highway 537 Llaves Pipeline 2008 release location. Groundwater monitoring and sampling was conducted in accordance with recommendations presented in the Site Investigation Report prepared by AES and submitted in June 2008.

The 2008 release originated on the Schmitz Ranch, on the south side of Highway 537, within the NW¼ NE¼ Section 18, T25N, R3W (N36.40357, W107.18422) and flowed south and southwest through a small unnamed arroyo for a distance of approximately 920 linear feet. A topographic site location map is presented as Figure 1, and a general site plan is presented as Figure 2.

1.0 Release History

On December 31, 2007, a Western Refining truck driver discovered the Llaves pipeline leak and immediately contacted BMG. BMG personnel confirmed the release and shut down the Llaves pipeline pumps and block valve located about one mile upstream. BMG contracted with TNT Excavating to remove the oil that had pooled along the surface of the small arroyo. Approximately 40 barrels (bbls) of oil were recovered and placed in storage tanks at the BMG Hwy 537 Transfer Station. A total of 3,932 cubic yards of contaminated soils were excavated and transported to the TNT Landfarm facility for disposal.

On January 9, 2008, the Llaves pipeline was repaired. BMG notified the National Response Center of the spill on January 23, 2008, and the release was given identification number 860429.

AES conducted a site investigation during April and May 2008, which included the installation of nine groundwater monitoring wells (MW-1 through MW-9). Details of the investigation were presented in the AES Site Investigation Report submitted to NMOCD and dated June 23, 2008.

2.0 Groundwater Monitoring and Sampling - May 2012

AES personnel conducted groundwater monitoring and sampling at the project area on May 24, 2012. Groundwater samples collected from MW-8 were laboratory analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH) per EPA Methods 8021/8015 at Hall Environmental Analysis Laboratory (Hall), Albuquerque, New Mexico.

2.1 Groundwater Measurements and Water Quality Data

During the May 2012 sampling event, groundwater measurements were recorded for MW-1 through MW-4 and MW-6 through MW-8. A groundwater measurement was not recorded for MW-5 because the well was dry, and water quality measurements were not collected from MW-9 because the well contained non-aqueous phase liquid (NAPL or "free product"). Groundwater elevations were measured with a Keck water level (with accuracy to 0.01 foot) and ranged from 7,049.25 feet above mean sea level (AMSL) in MW-2 to 7,050.85 feet AMSL in MW-7. Groundwater gradient was calculated to be 0.005 ft/ft in a southwest direction, which is consistent with historical site data.

Water quality measurements were made with an YSI Water Quality Meter in MW-8 prior to sample collection. Water quality measurements for MW-8 were recorded as 18.68°C temperature, 7.20 pH, 2.09 mg/L dissolved oxygen (DO), 28.4 mV oxidation reduction potential (ORP), and 1.485 mS/cm conductivity. Depth to groundwater measurements and water quality data are presented in Table 1. Groundwater elevation contours for May 2012 are presented on Figure 3, and Water Sample Collection Forms are included in the Appendix.

2.2 Non-Aqueous Phase Liquid (NAPL)

NAPL or "free product" was first observed in MW-9 during the January 2010 sampling event, with a measured thickness of 2.37 feet. Free product was once again observed in MW-9 during the May 2012 sampling event with a measured thickness of 2.04 feet. Note that

remediation wells MPE-1 through MPE-7 were installed around MW-9 in order to remove free product.

2.3 Groundwater Analytical Results

Groundwater samples were collected from MW-8 for laboratory analysis of BTEX and TPH. BTEX concentrations were reported below applicable New Mexico Water Quality Control Commission (WQCC) standards. TPH concentrations for gasoline, diesel and motor oil range organics were also below laboratory detection limits in MW-8. Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are presented the Appendix.

3.0 Measurement of Groundwater and Free Product in MPE Wells

AES personnel measured depth to groundwater and free product thickness in the multi-phase extraction (MPE) wells on May 24, 2012. Free product was observed in all seven of the MPE wells with free product thicknesses ranging from 0.01 feet in MPE-7 up to 2.57 feet in MPE-1. MPE well data are included in Table 1, and free product thickness contours from May 2012 are presented on Figure 4.

4.0 MPE System Operation & Maintenance

The MPE unit was installed in May 2011 and operated until October 2011, when it was removed for the winter season. An estimated 26,250 lbs of petroleum hydrocarbons have been removed via the MPE system to date. The system remained off-line (pulse mode) through the end of the second quarter 2012. AES anticipates re-activating the unit in the spring of 2013 for continued remedial operations.

5.0 Conclusions and Recommendations

AES conducted a groundwater monitoring and sampling event on May 24, 2012. MW-8, the only sampled well during this event, remained below the applicable WQCC standards for BTEX. Free product was observed in MW-9 in May 2012 (2.04 feet) and all MPE wells (MPE-1 through MPE-7).

Based on recent laboratory analytical results, AES recommends continued quarterly monitoring and sampling of MW-8 and MW-9. The third quarter sampling event was

conducted during September 2012, and the 3rd Quarter 2012 Quarterly progress report is currently in progress.

If you have any questions regarding this report or site conditions, please do not hesitate to contact Ross Kennemer at (505) 564-2281.

Sincerely,

Elizabeth McNally, P.E.

Tables

Table 1. Summary of Groundwater Measurement Data
Table 2. Summary of Groundwater Laboratory Analytical Results

Figures

Figure 1. Topographic Site Location Map
Figure 2. General Site Plan
Figure 3. Groundwater Elevation Contours, May 2012
Figure 4. Free Product Thickness Contours, May 2012

Appendices

Water Sample Collection Forms
Groundwater Laboratory Analytical Report (Hall 1205B06)

cc: Mike Dimond
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C/O Mike Dimond
Benson-Montin-Greer Drilling Corp.

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TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS/cm)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-1	05-May-08	7082.57		31.45		7051.12	7.62	4.051	1.48	15.57	141.9
MW-1	24-Sep-08	7082.57		31.91		7050.66	6.80	3.588	2.97	15.32	18.1
MW-1	02-Jan-09	7082.57		31.90		7050.67	NM				
MW-1	07-Apr-09	7082.57		31.92		7050.65	7.31	4.536	3.19	13.86	16.8
MW-1	07-Jul-09	7082.57		31.95		7050.62	7.31	3.161	1.48	16.43	52.6
MW-1	12-Oct-09	7082.57		32.20		7050.37	7.43	2.553	5.91	13.97	293.3
MW-1	12-Jan-10	7082.57		32.41		7050.16	7.72	4.035	3.35	11.12	-11.2
MW-1	13-Oct-10	7082.57		32.62		7049.95	7.38	3.596	0.50	14.60	-75.8
MW-1	20-Jan-11	7082.57		32.64		7049.93	7.48	3.726	1.50	11.89	44.6
MW-1	09-May-11	7082.57		32.27		7050.30	7.61	3.543	1.69	13.38	-5.4
MW-1	15-Aug-11	7082.57		33.07		7049.50	NM	NM	NM	NM	NM
MW-1	21-Nov-11	7082.57		32.98		7049.59	NM	NM	NM	NM	NM
MW-1	21-Feb-12	7082.57		32.98		7049.59	NM	NM	NM	NM	NM
MW-1	24-May-12	7082.57		32.92		7049.65	NM	NM	NM	NM	NM
MW-2	05-May-08	7079.94		29.01		7050.93	7.59	2.276	2.21	16.43	90.8
MW-2	24-Sep-08	7079.94		29.61		7050.33	6.93	2.073	2.75	14.93	36.0
MW-2	02-Jan-09	7079.94		29.52		7050.42	NM				
MW-2	07-Apr-09	7079.94		29.50		7050.44	6.93	2.560	1.93	13.38	21.5
MW-2	07-Jul-09	7079.94		29.65		7050.29	7.22	2.067	1.07	15.28	45.9
MW-2	12-Oct-09	7079.94		29.93		7050.01	7.37	1.665	5.63	14.10	178.1
MW-2	12-Jan-10	7079.94		30.01		7049.93	7.51	2.297	2.82	10.88	-2.9
MW-2	13-Oct-10	7079.94				7079.94	NM - Well Filled with Roots				
MW-2	20-Jan-11	7079.94		30.33		7049.61	NM - Well Filled with Roots				
MW-2	09-May-11	7079.94		29.99		7049.95	7.62	2.134	2.54	13.64	-34.1
MW-2	15-Aug-11	7079.94		30.81		7049.13	NM	NM	NM	NM	NM
MW-2	21-Nov-11	7079.94		29.79		7050.15	NM	NM	NM	NM	NM

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MW-2	21-Feb-12	7079.94		30.68		7049.26	NM	NM	NM	NM	NM
MW-2	24-May-12	7079.94		30.69		7049.25	NM	NM	NM	NM	NM
MW-3	05-May-08	7081.10		29.49		7051.61	7.79	4.083	2.42	15.91	75.7
MW-3	24-Sep-08	7081.10		30.07		7051.03	6.85	2.778	2.80	14.44	18.5
MW-3	02-Jan-09	7081.10		30.01		7051.09	NM				
MW-3	07-Apr-09	7081.10		30.02		7051.08	6.86	4.596	2.08	12.19	24.7
MW-3	07-Jul-09	7081.10		30.16		7050.94	NM - FILLED WITH SEDIMENT				
MW-3	12-Oct-09	7081.10		30.41		7050.69	7.23	2.316	2.24	13.88	8.3
MW-3	12-Jan-10	7081.10		30.50		7050.60	7.35	2.985	2.87	11.75	-27.2
MW-3	13-Oct-10	7081.10		30.84		7050.26	7.51	3.973	1.71	13.71	-49.8
MW-3	20-Jan-11	7081.10		30.85		7050.25	7.43	3.528	3.30	10.48	53.4
MW-3	10-May-11	7081.10		30.54		7050.56	7.55	3.270	2.06	13.47	-69.3
MW-3	15-Aug-11	7081.10		31.23		7049.87	NM	NM	NM	NM	NM
MW-3	21-Nov-11	7081.10		31.19		7049.91	NM	NM	NM	NM	NM
MW-3	21-Feb-12	7081.10		31.19		7049.91	NM	NM	NM	NM	NM
MW-3	24-May-12	7081.10		31.19		7049.91	NM	NM	NM	NM	NM
MW-4	05-May-08	7084.79		32.74		7052.05	7.70	2.699	2.36	14.62	-37.5
MW-4	24-Sep-08	7084.79		33.21		7051.58	6.98	2.163	3.04	13.70	42.9
MW-4	02-Jan-09	7084.79		33.29		7051.50	NM				
MW-4	07-Apr-09	7084.79		33.27		7051.52	6.91	2.779	1.35	11.90	21.1
MW-4	07-Jul-09	7084.79		33.32		7051.47	7.20	2.124	0.80	17.17	-41.5
MW-4	12-Oct-09	7084.79		33.56		7051.23	7.29	1.792	2.00	13.70	43.7
MW-4	12-Jan-10	7084.79		33.68		7051.11	7.36	2.374	2.03	11.53	-26.7
MW-4	13-Oct-10	7084.79		33.93		7050.86	7.42	2.233	1.18	14.11	-56.8
MW-4	20-Jan-11	7084.79		34.01		7050.78	7.55	2.292	2.14	11.57	126.2

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MW-4	09-May-11	7084.79		33.79		7051.00	7.65	2.234	1.85	13.05	-20.0
MW-4	15-Aug-11	7084.79		34.37		7050.42	NM	NM	NM	NM	NM
MW-4	21-Nov-11	7084.79		34.33		7050.46	NM	NM	NM	NM	NM
MW-4	21-Feb-12	7084.79		34.35		7050.44	NM	NM	NM	NM	NM
MW-4	24-May-12	7084.79		34.33		7050.46	NM	NM	NM	NM	NM
MW-5	05-May-08	7087.98				NA	NM - WELL DRY				
MW-5	24-Sep-08	7087.98				NA	NM - WELL DRY				
MW-5	02-Jan-09	7087.98				NA	NM - WELL DRY				
MW-5	07-Apr-09	7087.98				NA	NM - WELL DRY				
MW-5	07-Jul-09	7087.98				NA	NM - WELL DRY				
MW-5	12-Oct-09	7087.98				NA	NM - WELL DRY				
MW-5	12-Jan-10	7087.98				NA	NM - WELL DRY				
MW-5	13-Oct-10	7087.98				NA	NM - WELL DRY				
MW-5	20-Jan-11	7087.98				NA	NM - WELL DRY				
MW-5	09-May-11	7087.98				NA	NM - WELL DRY				
MW-5	15-Aug-11	7087.98				NA	NM - WELL DRY				
MW-5	21-Nov-11	7087.98				NA	NM - WELL DRY				
MW-5	21-Feb-12	7087.98				NA	NM - WELL DRY				
MW-5	24-May-12	7087.98				NA	NM - WELL DRY				
MW-6	05-May-08	7088.43		36.03		7052.40	7.73	1.764	2.43	13.95	87.3
MW-6	24-Sep-08	7088.43		36.44		7051.99	7.00	1.464	3.95	14.19	50.3
MW-6	02-Jan-09	7088.43		36.50		7051.93	NM				
MW-6	07-Apr-09	7088.43		36.46		7051.97	7.00	1.854	2.21	11.98	22.2
MW-6	07-Jul-09	7088.43		36.67		7051.76	7.27	1.557	1.35	17.51	57.8
MW-6	12-Oct-09	7088.43		36.78		7051.65	7.43	1.297	2.06	13.11	66.0

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MW-6	12-Jan-10	7088.43		36.92		7051.51	7.44	1.615	2.24	11.82	-19.2
MW-6	13-Oct-10	7088.43		37.19		7051.24	7.54	1.502	1.68	14.44	57.9
MW-6	20-Jan-11	7088.43		37.18		7051.25	7.85	1.539	1.83	11.52	174.9
MW-6	09-May-11	7088.43		37.05		7051.38	7.80	1.526	3.31	13.01	31.9
MW-6	15-Aug-11	7088.43		37.59		7050.84	NM	NM	NM	NM	NM
MW-6	21-Nov-11	7088.43		37.65		7050.78	NM	NM	NM	NM	NM
MW-6	21-Feb-12	7088.43		37.61		7050.82	NM	NM	NM	NM	NM
MW-6	24-May-12	7088.43		37.69		7050.74	NM	NM	NM	NM	NM
MW-7	05-May-08	7090.15		37.71		7052.44	NM - LOW YIELD				
MW-7	24-Sep-08	7090.15		38.16		7051.99	7.08	1.572	6.11	13.99	36.3
MW-7	02-Jan-09	7090.15		38.21		7051.94	NM				
MW-7	07-Apr-09	7090.15		38.16		7051.99	6.87	1.955	1.46	12.80	22.0
MW-7	07-Jul-09	7090.15		38.29		7051.86	7.06	1.599	2.27	16.48	92.6
MW-7	12-Oct-09	7090.15		38.49		7051.66	7.18	1.365	4.64	13.48	77.0
MW-7	12-Jan-10	7090.15		38.64		7051.51	7.22	1.679	1.97	11.02	-6.5
MW-7	13-Oct-10	7090.15		38.89		7051.26	7.57	2.227	1.68	16.25	66.3
MW-7	20-Jan-11	7090.15		38.92		7051.23	8.20	2.569	2.63	10.71	193.4
MW-7	09-May-11	7090.15		38.72		7051.43	7.67	2.066	2.19	14.93	86.8
MW-7	15-Aug-11	7090.15		39.26		7050.89	NM	NM	NM	NM	NM
MW-7	21-Nov-11	7090.15		39.27		7050.88	NM	NM	NM	NM	NM
MW-7	21-Feb-12	7090.15		39.31		7050.84	NM	NM	NM	NM	NM
MW-7	24-May-12	7090.15		39.30		7050.85	NM	NM	NM	NM	NM
MW-8	05-May-08	7085.20		33.71		7051.49	NM - LOW YIELD				
MW-8	24-Sep-08	7085.20		34.20		7051.00	6.88	1.672	3.06	15.24	-9.6
MW-8	05-Jan-09	7085.20		34.21		7050.99	NM				

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MW-8	07-Apr-09	7085.20		34.28		7050.92	6.98	2.061	1.81	13.30	-108.8
MW-8	07-Jul-09	7085.20		34.31		7050.89	7.11	1.811	1.17	16.26	-74.0
MW-8	12-Oct-09	7085.20		34.54		7050.66	7.00	1.416	1.48	13.27	-102.1
MW-8	12-Jan-10	7085.20		34.69		7050.51	7.02	1.699	1.73	11.13	-159.8
MW-8	13-Oct-10	7085.20		34.92		7050.28	7.32	1.786	0.77	14.65	-126.5
MW-8	20-Jan-11	7085.20		34.99		7050.21	7.40	1.776	1.32	11.42	-71.1
MW-8	20-Jan-11	7085.20		34.99		7050.21	7.40	1.776	1.32	11.42	-71.1
MW-8	10-May-11	7085.20		34.67		7050.53	7.44	1.698	1.06	12.74	-52.5
MW-8	15-Aug-11	7085.20		35.33		7049.87	7.42	1.717	3.67	17.56	-124.4
MW-8	21-Nov-11	7085.20		35.25		7049.95	7.38	1.430	1.83	11.77	95.8
MW-8	21-Feb-12	7085.20		35.30		7049.90	7.74	1.377	2.46	10.21	-85.2
MW-8	24-May-12	7085.20		35.25		7049.95	7.20	1.485	2.09	18.68	28.4
MW-9	05-May-08	7083.64		31.81		7051.83	7.85	1.955	2.59	15.01	-37.9
MW-9	24-Sep-08	7083.64		32.26		7051.38	7.08	1.515	2.84	14.03	43.3
MW-9	05-Jan-09	7083.64				7083.64	NM - WELL DRY				
MW-9	07-Apr-09	7083.64		32.34		7051.30	6.89	1.876	1.11	12.85	7.0
MW-9	07-Jul-09	7083.64		32.41		7051.23	7.19	1.672	1.14	16.77	-9.7
MW-9	12-Oct-09	7083.64		32.63		7051.01	7.22	1.352	2.10	13.78	72.9
MW-9	12-Jan-10	7083.64	32.43	34.80	2.37	7050.68	NM - 2.37 feet of Crude oil or Free Product				
MW-9	13-Oct-10	7083.64	32.63	35.29	2.66	7050.42	NM - 2.66 feet of Crude oil or Free Product				
MW-9	20-Jan-11	7083.64	32.71	35.21	2.50	7050.38	NM - 2.50 feet of Crude oil or Free Product				
MW-9	09-May-11	7083.64	32.43	34.96	2.53	7050.65	NM - 2.53 feet of Crude oil or Free Product				
MW-9	15-Aug-11	7083.64	33.11	35.33	2.22	7050.04	NM - 2.22 feet of Crude oil or Free Product				
MW-9	07-Oct-11	7083.64	33.14	35.23	2.09	7050.04	NM - 2.09 feet of Crude oil or Free Product				
MW-9	21-Nov-11	7083.64	33.25	35.37	2.12	7049.92	NM - 2.12 feet of Crude oil or Free Product				
MW-9	21-Feb-12	7083.64	33.14	35.06	1.92	7050.07	NM - 1.92 feet of Crude oil or Free Product				

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MW-9	24-May-12	7083.64	33.15	35.19	2.04	7050.04	NM - 2.04 feet of Crude oil or Free Product				
MPE-1	09-May-11	TBS	33.87	36.87	3.00	NA	NM - 3.00 feet of Crude oil or Free Product				
MPE-1	15-Aug-11	TBS	34.68	36.47	1.79	NA	NM - 1.79 feet of Crude oil or Free Product				
MPE-1	07-Oct-11	TBS	34.87	35.81	0.94	NA	NM - 0.94 feet of Crude oil or Free Product				
MPE-1	21-Nov-11	TBS	34.60	36.85	2.25	NA	NM - 2.25 feet of Crude oil or Free Product				
MPE-1	21-Feb-12	TBS	34.57	37.03	2.46	NA	NM - 2.46 feet of Crude oil or Free Product				
MPE-1	24-May-12	TBS	34.56	37.13	2.57	NA	NM - 2.57 feet of Crude oil or Free Product				
MPE-2	09-May-11	TBS	32.50	33.73	1.23	NA	NM - 1.23 feet of Crude oil or Free Product				
MPE-2	15-Aug-11	TBS	33.28	33.69	0.41	NA	NM - 0.41 feet of Crude oil or Free Product				
MPE-2	07-Oct-11	TBS	33.33	33.34	0.01	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-2	21-Nov-11	TBS	33.28	33.41	0.13	NA	NM - 0.13 feet of Crude oil or Free Product				
MPE-2	21-Feb-12	TBS	33.24	33.66	0.42	NA	NM - 0.42 feet of Crude oil or Free Product				
MPE-2	24-May-12	TBS	33.21	33.91	0.70	NA	NM - 0.70 feet of Crude oil or Free Product				
MPE-3	09-May-11	TBS	32.43	34.65	2.22	NA	NM - 2.22 feet of Crude oil or Free Product				
MPE-3	15-Aug-11	TBS	33.25	34.51	1.26	NA	NM - 1.26 feet of Crude oil or Free Product				
MPE-3	07-Oct-11	TBS	33.40	33.74	0.34	NA	NM - 0.34 feet of Crude oil or Free Product				
MPE-3	21-Nov-11	TBS	33.28	34.13	0.85	NA	NM - 0.85 feet of Crude oil or Free Product				
MPE-3	21-Feb-12	TBS	33.18	34.83	1.65	NA	NM - 1.65 feet of Crude oil or Free Product				
MPE-3	24-May-12	TBS	33.15	34.89	1.74	NA	NM - 1.74 feet of Crude oil or Free Product				
MPE-4	09-May-11	TBS	33.45	35.74	2.29	NA	NM - 2.29 feet of Crude oil or Free Product				
MPE-4	15-Aug-11	TBS	34.26	35.85	1.59	NA	NM - 1.59 feet of Crude oil or Free Product				
MPE-4	07-Oct-11	TBS	34.46	34.67	0.21	NA	NM - 0.21 feet of Crude oil or Free Product				
MPE-4	21-Nov-11	TBS	34.20	35.92	1.72	NA	NM - 1.72 feet of Crude oil or Free Product				

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS/cm)	DO (mg/L)	Temperature (C)	ORP (mV)
MPE-4	21-Feb-12	TBS	34.16	36.17	2.01	NA	NM - 2.01 feet of Crude oil or Free Product				
MPE-4	24-May-12	TBS	34.16	36.08	1.92	NA	NM - 1.92 feet of Crude oil or Free Product				
MPE-5	09-May-11	TBS	34.93	37.70	2.77	NA	NM - 2.77 feet of Crude oil or Free Product				
MPE-5	15-Aug-11	TBS	35.68	37.80	2.12	NA	NM - 2.12 feet of Crude oil or Free Product				
MPE-5	07-Oct-11	TBS	35.69	37.82	2.13	NA	NM - 2.13 feet of Crude oil or Free Product				
MPE-5	21-Nov-11	TBS	35.58	38.16	2.58	NA	NM - 2.58 feet of Crude oil or Free Product				
MPE-5	21-Feb-12	TBS	35.61	38.03	2.42	NA	NM - 2.42 feet of Crude oil or Free Product				
MPE-5	25-May-12	TBS	35.61	37.97	2.36	NA	NM - 2.36 feet of Crude oil or Free Product				
MPE-6	09-May-11	TBS		33.05		NA	NM - DUE TO HIGH CONTAMINATION OF CRUDE OIL				
MPE-6	15-Aug-11	TBS	33.72	33.81	0.09	NA	NM - 0.09 feet of Crude Oil or Free Product				
MPE-6	07-Oct-11	TBS	33.67	34.05	0.38	NA	NM - 0.38 feet of Crude Oil or Free Product				
MPE-6	21-Nov-11	TBS	33.51	34.64	1.13	NA	NM - 1.13 feet of Crude Oil or Free Product				
MPE-6	21-Feb-12	TBS	33.46	35.02	1.56	NA	NM - 1.56 feet of Crude Oil or Free Product				
MPE-6	24-May-12	TBS	33.43	35.15	1.72	NA	NM - 1.72 feet of Crude Oil or Free Product				
MPE-7	09-May-11	TBS	30.87	30.88	0.01	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-7	15-Aug-11	TBS		31.59		NA	NM	NM	NM	NM	NM
MPE-7	07-Oct-11	TBS		31.60		NA	NM	NM	NM	NM	NM
MPE-7	21-Nov-11	TBS	31.54	31.55	0.01	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-7	21-Feb-12	TBS	31.54	31.55	0.01	NA	NM - 0.01 feet of Crude Oil or Free Product				
MPE-7	24-May-12	TBS	31.52	31.53	0.01	NA	NM - 0.01 feet of Crude Oil or Free Product				

NOTE: NS = NOT SAMPLED
NM = NOT MEASURED
NA = NOT AVAILABLE
TBS = TO BE SURVEYED

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	*(µg/L)*	*(µg/L)*	*(µg/L)*	*(mg/L)*	*(mg/L)*	*(mg/L)*
Analytical Method		**8021B**	**8021B**	**8021B**	**8021B**	**8015B**	**8015B**	**8015B**
New Mexico WQCC		***10***	***750***	***750***	***620***	***NE***	***NE***	***NE***
MW-1	05-May-08	<1.0	<1.0	<1.0	<2.0	0.092	<1.0	<5.0
MW-1	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	13-Oct-10	NS - Well filled with Roots						
MW-2	20-Jan-11	NS - Well filled with Roots						
MW-2	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	07-Jul-09	NS - Well filled with sediment						
MW-3	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0

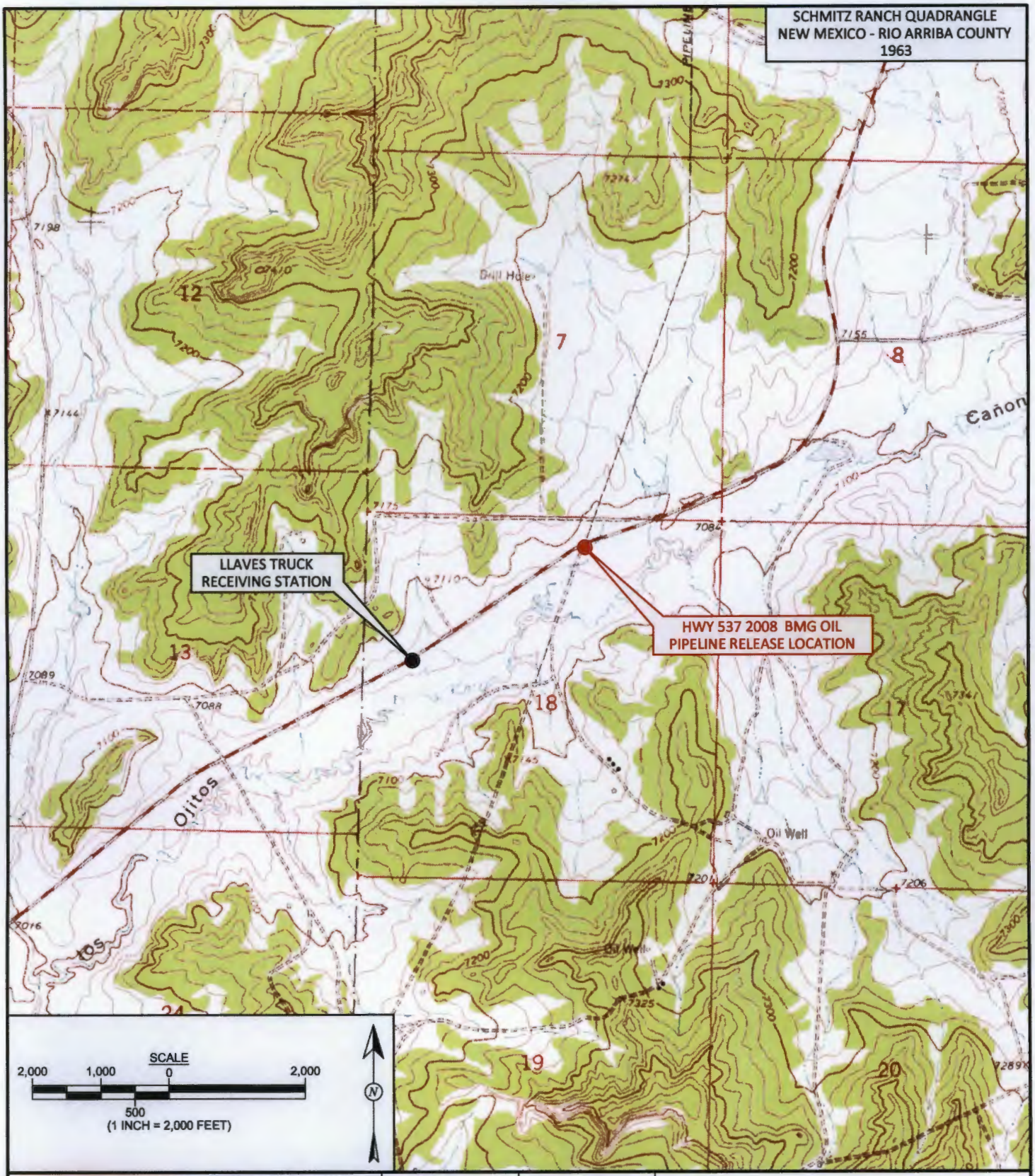
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*	*NE*
MW-4	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-5	05-May-08	NS - Well Dry						
MW-5	24-Sep-08	NS - Well Dry						
MW-5	02-Jan-09	NS - Well Dry						
MW-5	07-Apr-09	NS - Well Dry						
MW-5	07-Jul-09	NS - Well Dry						
MW-5	12-Oct-09	NS - Well Dry						
MW-5	12-Jan-10	NS - Well Dry						
MW-5	13-Oct-10	NS - Well Dry						
MW-5	20-Jan-11	NS - Well Dry						
MW-5	09-May-11	NS - Well Dry						
MW-6	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	05-May-08	2.8	<1.0	<1.0	<2.0	0.40	<1.0	<5.0
MW-7	24-Sep-08	<1.0	<1.0	<1.0	<2.0	0.069	<1.0	<5.0
MW-7	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

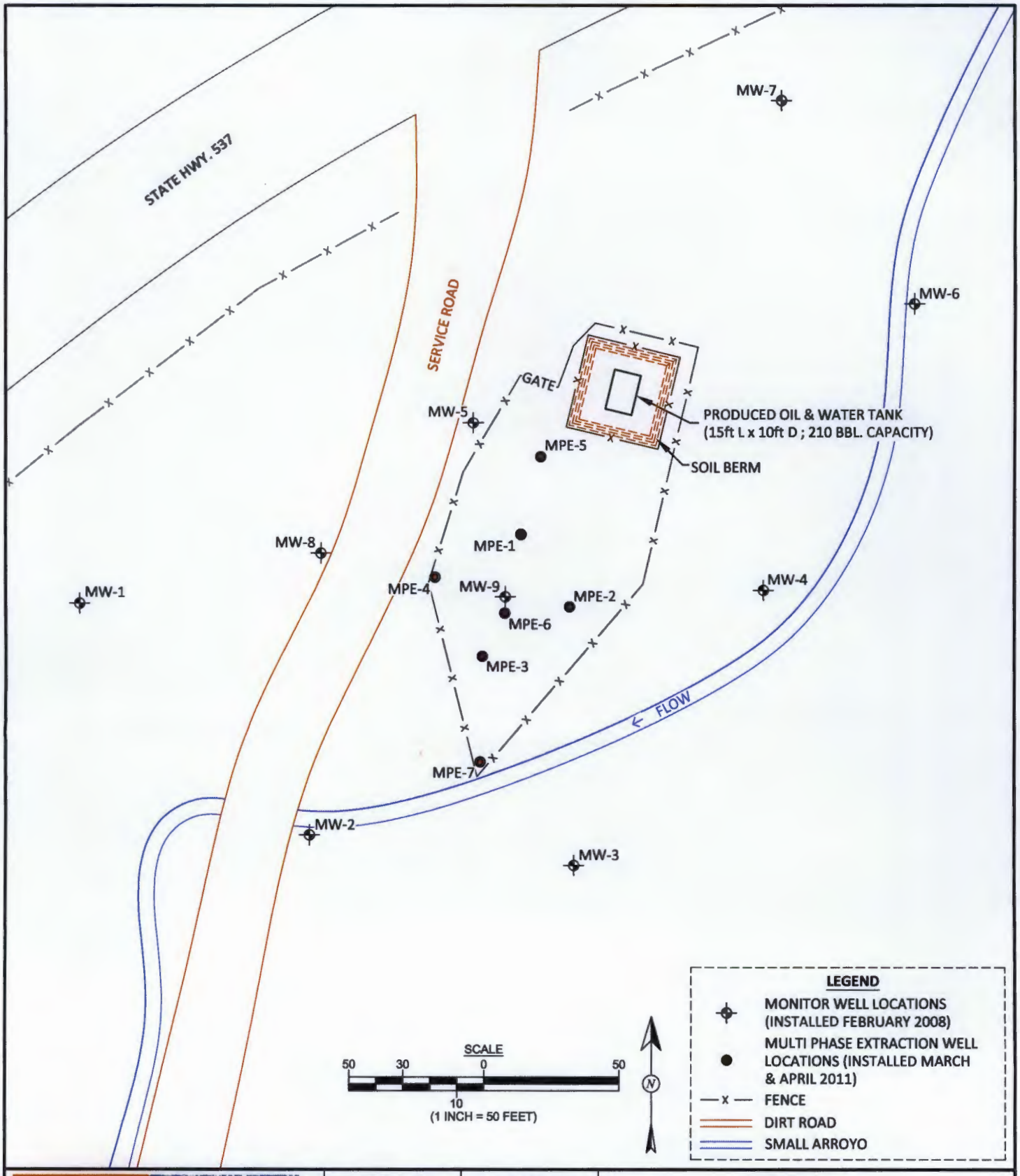
Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*	*NE*
MW-7	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	05-May-08	**26**	10	<1.0	<2.0	1.10	<1.0	<5.0
MW-8	24-Sep-08	**65**	26	<1.0	<2.0	0.90	<1.0	<5.0
MW-8	05-Jan-09	**45**	25	<1.0	2.2	1.0	<1.0	<5.0
MW-8	07-Apr-09	**25**	20	<1.0	2.9	0.89	<1.0	<5.0
MW-8	07-Jul-09	7.5	4.5	<1.0	<2.0	0.21	<1.0	<5.0
MW-8	12-Oct-09	**15**	11	<1.0	<2.0	0.52	<1.0	<5.0
MW-8	12-Jan-10	<1.0	<1.0	<1.0	<2.0	0.088	<1.0	<5.0
MW-8	13-Oct-10	**12**	<1.0	1.7	16	0.25	<1.0	<5.0
MW-8	20-Jan-11	**35**	<1.0	6.5	6.3	0.16	<1.0	<5.0
MW-8	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	15-Aug-11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0	<5.0
MW-8	21-Nov-11	<2.0	<2.0	<2.0	<4.0	<0.10	2.2	<5.0
MW-8	21-Feb-12	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0	<5.0
MW-8	24-May-12	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0	<5.0
MW-9	05-May-08	6.2	7.5	<1.0	2.3	0.90	<1.0	<5.0
MW-9	24-Sep-08	**17**	12	<1.0	<2.0	0.32	<1.0	<5.0
MW-9	05-Jan-09	NS - Well Dry						
MW-9	07-Apr-09	**12**	6.2	<1.0	<2.0	0.32	<1.0	<5.0
MW-9	07-Jul-09	7.0	5.3	<1.0	<2.0	0.28	<1.0	<5.0
MW-9	12-Oct-09	**26**	2.0	<1.0	<2.0	0.31	<1.0	<5.0
MW-9	12-Jan-10	NS - 2.37 FEET OF CRUDE OIL						
MW-9	13-Oct-10	NS - 2.66 FEET OF CRUDE OIL						
MW-9	20-Jan-11	NS - 2.50 FEET OF CRUDE OIL						
MW-9	09-May-11	NS - 2.53 FEET OF CRUDE OIL						
MW-9	15-Aug-11	NS - 2.22 FEET OF CRUDE OIL						
MW-9	21-Nov-11	NS - 2.12 FEET OF CRUDE OIL						
MW-9	21-Feb-12	NS - 1.92 FEET OF CRUDE OIL						
MW-9	24-May-12	NS - 2.04 FEET OF CRUDE OIL						

NOTE: NS = Not Sampled
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
MRO = Motor Oil Range Organics



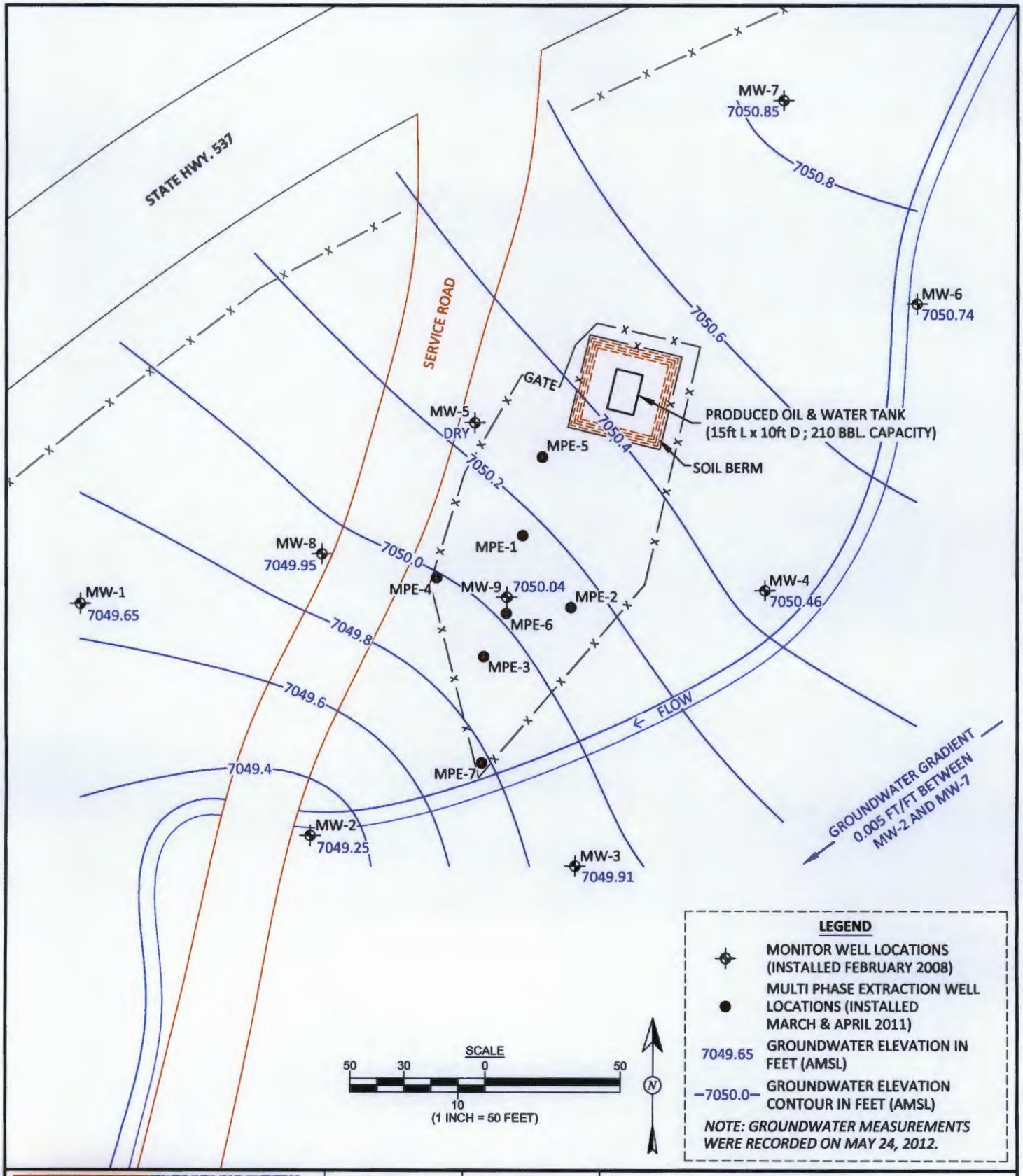
DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 1**
REVISIONS BY: C. Lameman	**DATE REVISED:** October 24, 2012	**TOPOGRAPHIC SITE LOCATION MAP**
CHECKED BY: C. Lameman	**DATE CHECKED:** July 17, 2012	BMG HIGHWAY 537 LLAVES 2008 PIPELINE OIL RELEASE NW¼ NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH RIO ARRIBA COUNTY, NEW MEXICO N36.40357, W107.18422
APPROVED BY: E. McNally	**DATE APPROVED:** October 24, 2012	

AES
Animas Environmental Services, LLC



Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 2**
REVISIONS BY: C. Lameman	**DATE REVISED:** October 24, 2012	**GENERAL SITE PLAN**
CHECKED BY: C. Lameman	**DATE CHECKED:** July 17, 2012	BMG HIGHWAY 537 LLAVES 2008 PIPELINE OIL RELEASE NW¼ NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH RIO ARRIBA COUNTY, NEW MEXICO N36.40357, W107.18422
APPROVED BY: E. McNally	**DATE APPROVED:** October 24, 2012	



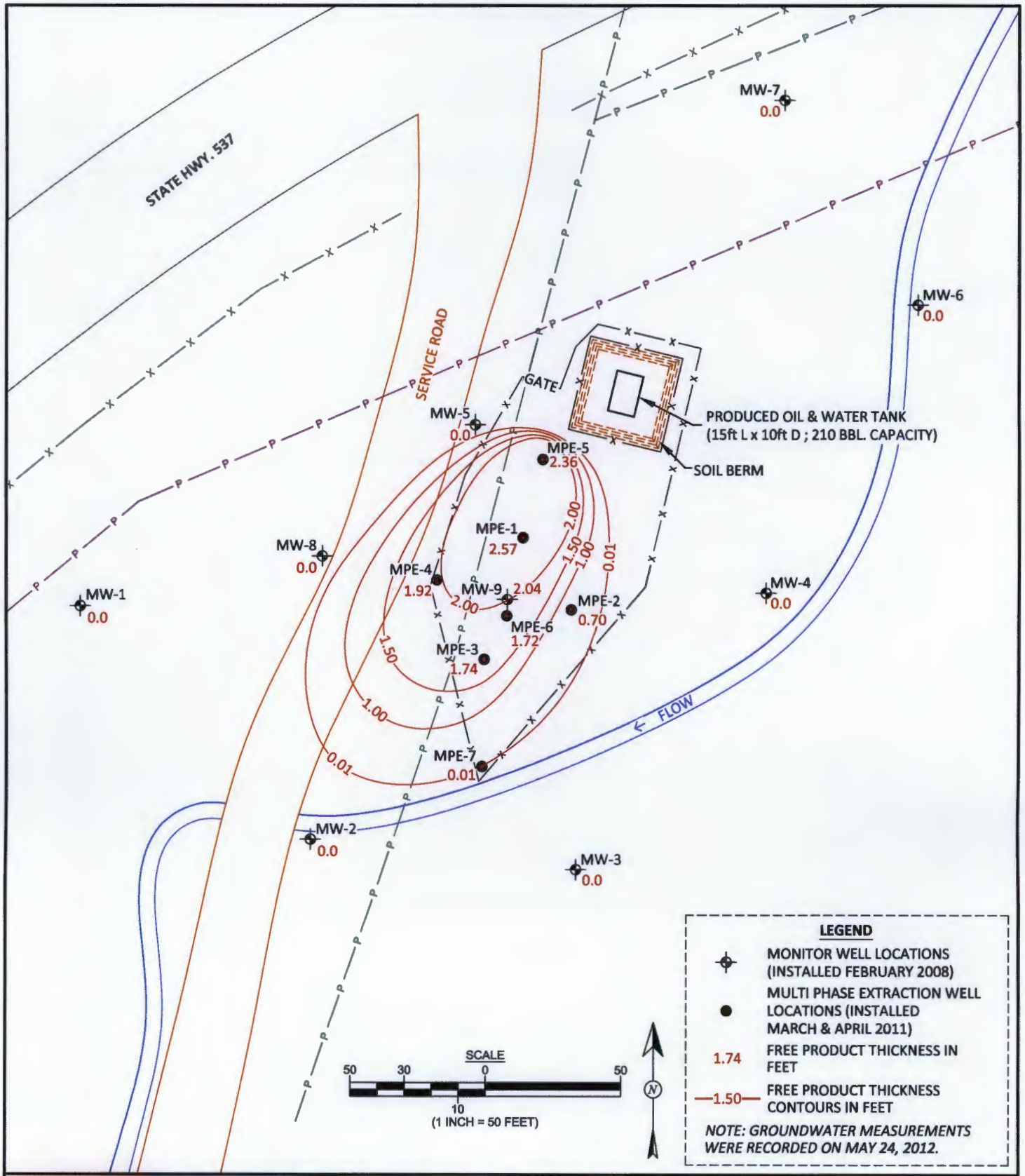
Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011
REVISIONS BY: C. Lameman	**DATE REVISED:** October 24, 2012
CHECKED BY: C. Lameman	**DATE CHECKED:** July 17, 2012
APPROVED BY: E. McNally	**DATE APPROVED:** October 24, 2012

FIGURE 3

GROUNDWATER ELEVATION CONTOURS, MAY 2012

BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL RELEASE
NW¼ NE¼, SEC. 18, T25N, R3W
SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO
N36.40357, W107.18422



Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 4**
REVISIONS BY: C. Lameman	**DATE REVISED:** October 24, 2012	**FREE PRODUCT THICKNESS CONTOURS, MAY 2012**
CHECKED BY: C. Lameman	**DATE CHECKED:** July 17, 2012	BMG HIGHWAY 537 LLAVES 2008 PIPELINE OIL RELEASE
APPROVED BY: E. McNally	**DATE APPROVED:** October 24, 2012	NW¼ NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO N36.40357, W107.18422

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Hwy 537 2008 Spill
Location: Rio Arriba County, New Mexico
Tech: D. Willis

Project No.: AES 080101
Date: 5-24-12
Time: 1117
Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1153	—	32.92	—	
MW-2	1158	—	30.69	—	
MW-3	1206	—	31.19	—	
MW-4	1208	—	34.33	—	
MW-5	1216	—	Dry	—	
MW-6	1218	—	37.69	—	
MW-7	1221	—	39.30	—	
MW-8	1129	—	35.25	—	
MW-9	1307	33.15	35.19	2.04	
MPE-1	1316	34.56	37.13	2.57	
MPE-2	1242	33.21	33.91	0.70	
MPE-3	1255	33.15	34.89	1.74	
MPE-4	1313	34.16	36.08	1.92	
MPE-5	1320	35.61	37.97	2.36	
MPE-6	1245	33.43	35.15	1.72	
MPE-7	1240	31.52	31.53	0.01	

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-8

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: N. Willis
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): 35.25 **Time:** 1129 *(taken prior to purging well)*
Final D.T.W. (ft): _____ **Time:** _____ *(taken after sample collection)*
If NAPL Present: **D.T.P.:** _____ **D.T.W.:** _____ **Thickness:** _____ **Time:** _____

Project No.: AES 080101
Date: 5-24-12
Arrival Time: 1117
Air Temp: 71°F
T.O.C. Elev. (ft): 7085.2
Total Well Depth (ft): 39.15

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations
1139	18.68	1.485	2.09	7.20	28.4	1/16 gallon	
1145							Samples Collected

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (2 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: —
Collected Samples Stored on Ice in Cooler: Yes
Chain of Custody Record Complete: Yes
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-9

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: N. Willis
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): _____ **Time:** _____ *(taken prior to purging well)*
Final D.T.W. (ft): _____ **Time:** _____ *(taken after sample collection)*
If NAPL Present: **D.T.P.:** 33.15 **D.T.W.:** 35.19 **Thickness:** 2.04 **Time:** 1307

Project No.: AES 080101
Date: 5/24/12
Arrival Time: 1300
Air Temp: 75°F
T.O.C. Elev. (ft): 7083.64
Total Well Depth (ft): _____

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations

NO Samples Free Product Present

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (2 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: _____
Collected Samples Stored on Ice in Cooler: _____
Chain of Custody Record Complete: _____
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 06, 2012

Debbie Watson

Animas Environmental Services
624 East Comanche
Farmington, NM 87401
TEL: (505) 486-4071
FAX (505) 324-2022

RE: BMG HWY 537 2008 Spill OrderNo.: 1205B06

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/26/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1205B06**
Date Reported: **6/6/2012**

CLIENT: Animas Environmental Services
Project: BMG HWY 537 2008 Spill
Lab ID: 1205B06-001 **Matrix:** AQUEOUS

Client Sample ID: MW-8
Collection Date: 5/24/2012 11:45:00 AM
Received Date: 5/26/2012 11:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JMP**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	5/30/2012 2:48:39 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	5/30/2012 2:48:39 PM
Surr: DNOP	123	61.3-164		%REC	1	5/30/2012 2:48:39 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.10		mg/L	2	6/1/2012 7:04:43 PM
Surr: BFB	94.1	69.3-120		%REC	2	6/1/2012 7:04:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	2.0		µg/L	2	6/1/2012 7:04:43 PM
Toluene	ND	2.0		µg/L	2	6/1/2012 7:04:43 PM
Ethylbenzene	ND	2.0		µg/L	2	6/1/2012 7:04:43 PM
Xylenes, Total	ND	4.0		µg/L	2	6/1/2012 7:04:43 PM
Surr: 4-Bromofluorobenzene	94.6	55-140		%REC	2	6/1/2012 7:04:43 PM

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Client Sample ID: Trip Blank
Project: BMG HWY 537 2008 Spill
Collection Date:
Lab ID: 1205B06-002
Matrix: TRIP BLANK
Received Date: 5/26/2012 11:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	6/2/2012 1:13:20 AM
Benzene	ND	1.0		µg/L	1	6/2/2012 1:13:20 AM
Toluene	ND	1.0		µg/L	1	6/2/2012 1:13:20 AM
Ethylbenzene	ND	1.0		µg/L	1	6/2/2012 1:13:20 AM
Xylenes, Total	ND	2.0		µg/L	1	6/2/2012 1:13:20 AM
Surr: 4-Bromofluorobenzene	102	55-140		%REC	1	6/2/2012 1:13:20 AM

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1205B06**

06-Jun-12

Client: Animas Environmental Services

Project: BMG HWY 537 2008 Spill

Sample ID **MB-2148**	SampType: **MBLK**	TestCode: **EPA Method 8015B: Diesel Range**
Client ID: **PBW**	Batch ID: **2148**	RunNo: **3090**
Prep Date: **5/30/2012**	Analysis Date: **5/30/2012**	SeqNo: **85581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.3		1.000		128	61.3	164			

Sample ID **LCS-2148**	SampType: **LCS**	TestCode: **EPA Method 8015B: Diesel Range**
Client ID: **LCSW**	Batch ID: **2148**	RunNo: **3090**
Prep Date: **5/30/2012**	Analysis Date: **5/30/2012**	SeqNo: **85583** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	106	74	157			
Surr: DNOP	0.52		0.5000		103	61.3	164			

Sample ID **LCSD-2148**	SampType: **LCSD**	TestCode: **EPA Method 8015B: Diesel Range**
Client ID: **LCSS02**	Batch ID: **2148**	RunNo: **3090**
Prep Date: **5/30/2012**	Analysis Date: **5/30/2012**	SeqNo: **85585** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	103	74	157	3.68	23	
Surr: DNOP	0.53		0.5000		106	61.3	164	0	0	

Qualifiers:

- */X Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1205B06**

06-Jun-12

Client: Animas Environmental Services

Project: BMG HWY 537 2008 Spill

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **PBW**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		82.7	69.3	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	114	101	123			
Surr: BFB	21		20.00		105	69.3	120			

Sample ID **1205B05-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87787** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.84	0.050	0.5000	0.3280	103	75.4	121			
Surr: BFB	19		20.00		95.5	69.3	120			

Sample ID **1205B05-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87788** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.85	0.050	0.5000	0.3280	104	75.4	121	0.851	10.5	
Surr: BFB	23		20.00		113	69.3	120	0	0	

Sample ID **1205B05-003AMS**	SampType: **MS**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87790** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	115	75.4	121			
Surr: BFB	17		20.00		85.3	69.3	120			

Sample ID **1205B05-003AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **BatchQC**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/2/2012**	SeqNo: **87791** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	75.4	121	6.93	10.5	
Surr: BFB	20		20.00		101	69.3	120	0	0	

Qualifiers:

- *\X Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1205B06**

06-Jun-12

Client: Animas Environmental Services

Project: BMG HWY 537 2008 Spill

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87808** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	17		20.00		83.9	55	140			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87809** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	21	2.5	20.00	0	106	50.5	158			
Benzene	21	1.0	20.00	0	103	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	20	1.0	20.00	0	101	80	120			
Xylenes, Total	62	2.0	60.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		113	55	140			

Sample ID **1205B06-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-8**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	39	5.0	40.00	0	96.4	58	139			
Benzene	38	2.0	40.00	0	95.3	70.1	118			
Toluene	38	2.0	40.00	0	94.9	72.3	117			
Ethylbenzene	37	2.0	40.00	0	92.5	73.5	117			
Xylenes, Total	110	4.0	120.0	0	94.9	73.1	119			
Surr: 4-Bromofluorobenzene	42		40.00		105	55	140			

Sample ID **1205B06-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-8**	Batch ID: **R3175**	RunNo: **3175**
Prep Date:	Analysis Date: **6/1/2012**	SeqNo: **87820** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	39	5.0	40.00	0	97.4	58	139	1.02	15.2	
Benzene	38	2.0	40.00	0	95.1	70.1	118	0.200	16.4	
Toluene	38	2.0	40.00	0	94.1	72.3	117	0.815	13.9	
Ethylbenzene	36	2.0	40.00	0	91.0	73.5	117	1.64	13.5	
Xylenes, Total	110	4.0	120.0	0	93.0	73.1	119	1.99	12.9	
Surr: 4-Bromofluorobenzene	44		40.00		110	55	140	0	0	

Qualifiers:

- */X Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Animas Environmental** Work Order Number: **1205B06**

Received by/date: AF 05/26/12

Logged By: **Lindsay Mangin** 5/26/2012 11:30:00 AM

Completed By: **Lindsay Mangin** 5/29/2012 9:51:03 AM

Reviewed By: 05/29/12

Chain of Custody

1.	Were seals intact?	Yes	No	Not Present ✔
2.	Is Chain of Custody complete?	Yes ✔	No	Not Present
3.	How was the sample delivered?	Courier		

Log In

4.	Coolers are present? (see 19. for cooler specific information)	Yes ✔	No	NA
5.	Was an attempt made to cool the samples?	Yes ✔	No	NA
6.	Were all samples received at a temperature of >0° C to 6.0°C	Yes ✔	No	NA
7.	Sample(s) in proper container(s)?	Yes ✔	No	
8.	Sufficient sample volume for indicated test(s)?	Yes ✔	No	
9.	Are samples (except VOA and ONG) properly preserved?	Yes ✔	No	
10.	Was preservative added to bottles?	Yes	No ✔	NA
11.	VOA vials have zero headspace?	Yes ✔	No	No VOA Vials
12.	Were any sample containers received broken?	Yes	No ✔	
13.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	# of preserved bottles checked for pH:
14.	Are matrices correctly identified on Chain of Custody?	Yes ✔	No	(<2 or >12 unless noted)
15.	Is it clear what analyses were requested?	Yes ✔	No	Adjusted?
16.	Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA ✔

Person Notified: Date:

By Whom: Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

18. Additional remarks:

19. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Animas Environmental Services	X Standard ☐ Rush
	Project Name: BMG HWY 537 2008 SPILL
Mailing Address: 624 E Comanche	
Farmington NM 87401	Project #: AES 080101
Phone #: 505-564-2281	
email or Fax#: 505-324-2022	Project Manager: Deborah Watson
QA/QC Package: X Standard ☐ Level 4 (Full Validation)	
Accreditation: ☐ NELAP ☐ Other ☐ EDD (Type)	Sampler: On Ice: X Yes ☐ No; Sample Temperature: 3

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1205358	BTEX 8021	TPH 8015 (C6 - C36) (GRO, DRO, MRO)	Air Bubbles (Y or N)
5/24/12	1145	water	MW-8	Glass 6 - 40 mL	5 - HCl 1 - Non	-001	X	X	
		water	Trip Blank	Glass 2 - 40 mL	HCl	-002	X		

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
5/25/12	1147	Natalie Winn	Christine Walker	5/25/12	1147
5/25/12	1237	Christine Walker		5/26/12	11:30

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.