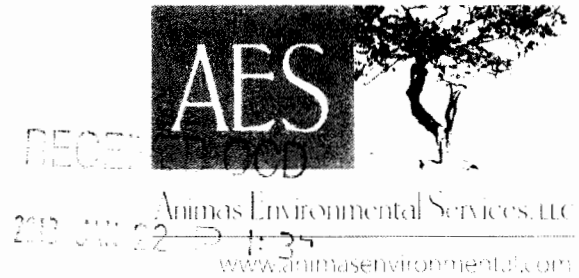


3R - 447

Q3 2012 GWMR

12 / 20 / 2012



December 20, 2012

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

624 E. Comanche
Farmington, NM 87401
505-664-7751
Durango, Colorado
970-403-3084

**Re: 3rd 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 3rd quarter of 2012 at the BMG Highway 537 Llaves Pipeline 2008 release location. Groundwater monitoring and sampling were 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 - September 2012

AES personnel conducted groundwater monitoring and sampling at the project area on September 18 and 21, 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. Note that MW-1 through MW-7 were sampled from 2008 to 2011 and had concentrations which remained below laboratory detection limits or applicable standards for eight consecutive quarters.

2.1 *Groundwater Measurements and Water Quality Data*

During the September 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. Groundwater elevations were measured with a Keck water level (with accuracy to 0.01 foot) and ranged from approximately 7,048.94 feet above mean sea level (AMSL) in MW-2 to 7,050.55 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.

Note that water quality measurements were not made during the September sampling event due to equipment malfunction. Depth to groundwater measurements are presented in Table 1. Groundwater elevation contours for September 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 September 2012 sampling event with a measured thickness of 1.79 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 total BTEX and TPH as gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO). Total BTEX and TPH concentrations were reported below laboratory analytical results and applicable New Mexico Water Quality Control Commission (WQCC) standards. 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 September 18, 2012. Free product was observed in six of the MPE wells with free product thicknesses ranging from 0.94 feet in MPE-2 up to 3.65 feet in MPE-3. Note that free product was not observed in MPE-7 during the September 2012 sampling event. MPE well data are included in Table 1, and free product thickness contours from September 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 third 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 September 18 and 21, 2012. MW-8, the only sampled well during this event, remained below the applicable WQCC standards for BTEX and below laboratory detection limits for TPH. Free product was observed in MW-9 in September 2012 (1.79 feet) and six of the MPE wells (MPE-1 through MPE-6).

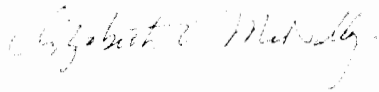
Based on recent laboratory analytical results, AES recommends continued quarterly monitoring and sampling of MW-8 and MW-9. The fourth quarter sampling event was conducted during December 2012, and the 4th Quarter 2012 Quarterly progress report is currently being prepared.

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

Sincerely,



Kelsey Christiansen
Environmental Scientist



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, September 2012

Figure 4. Free Product Thickness Contours, September 2012

Appendices

Water Sample Collection Forms

Groundwater Laboratory Analytical Report (Hall 1209B16)

cc: Mike Dimond
Benson-Montin-Greer Drilling Corp.
4900 College Blvd
Farmington NM 87402

Brandon Powell
New Mexico Oil Conservation Division
1000 Rio Brazos Rd.
Aztec, NM 87410

Craig Schmitz
#70 CR 405
Lindrith, NM 87029

Private Landowner
C/O Mike Dimond
Benson-Montin-Greer Drilling Corp.

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Progress Report 122012.docx

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)	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-1	18-Sep-12	7082.57		33.34		7049.23	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

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Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-2	21-Nov-11	7079.94		29.79		7050.15	NM	NM	NM	NM	NM
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-2	18-Sep-12	7079.94		31.00		7048.94	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-3	18-Sep-12	7081.10		31.58		7049.52	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

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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
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-4	18-Sep-12	7084.79		34.65		7050.14	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-5	18-Sep-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

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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
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-6	18-Sep-12	7088.43		37.90		7050.53	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

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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-7	18-Sep-12	7090.15		39.60		7050.55	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		
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-8	18-Sep-12	7085.20		35.63		7049.57	NM	NM	NM	NM	NM
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

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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			
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			
MW-9	18-Sep-12	7083.64	33.47	35.26	1.79	7049.77		NM - 1.79 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-1	18-Sep-12	TBS	34.91	37.42	2.51	NA		NM - 2.51 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-2	18-Sep-12	TBS	33.50	34.44	0.94	NA		NM - 0.94 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)	DO (mg/L)	Temperature (C)	ORP (mV)
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-3	18-Sep-12	TBS	33.45	37.10	3.65	NA		NM - 3.65 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			
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-4	18-Sep-12	TBS	34.48	36.64	2.16	NA		NM - 2.16 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-5	18-Sep-12	TBS	35.89	38.55	2.66	NA		NM - 2.66 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			

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)	DO (mg/L)	Temperature (C)	ORP (mV)
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-6	18-Sep-12	TBS	34.03	36.11	2.08	NA		NM - 2.08 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			
MPE-7	18-Sep-12	TBS	NM	32.18		NA	NM	NM	NM	NM	NM

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 (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	GRO (mg/L)	DRO (mg/L)	MRO (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-8	21-Sep-12	<1.0	<1.0	<1.0	<2.0	<0.050	<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						
MW-9	18-Sep-12	NS - 1.79 FEET OF CRUDE OIL						

NOTE: NS = Not Sampled

NA = Not Analyzed

GRO = Gasoline Range Organics

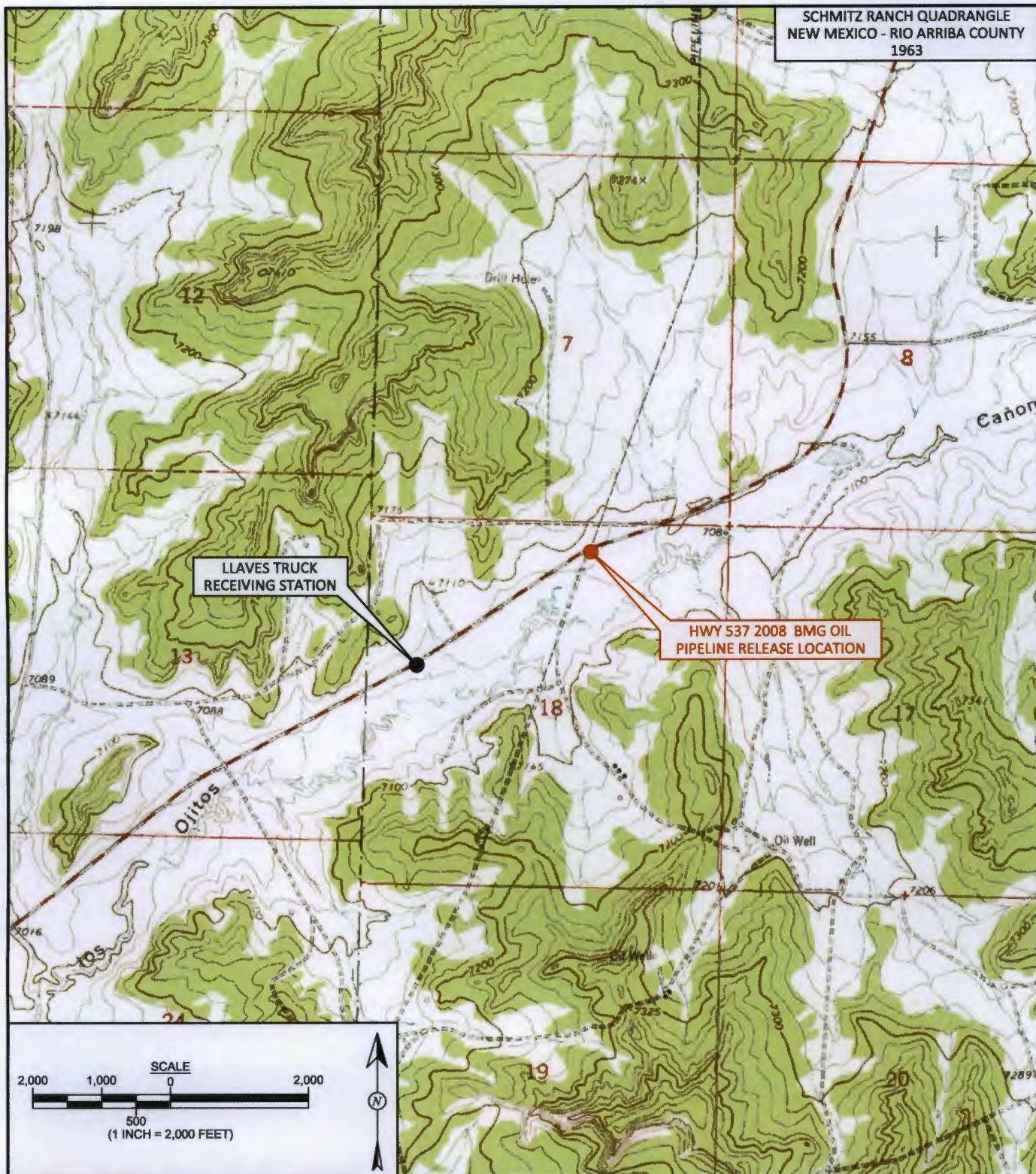
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl- benzene	Total Xylenes	GRO	DRO	MRO
		($\mu\text{g/L}$)	($\mu\text{g/L}$)	($\mu\text{g/L}$)	($\mu\text{g/L}$)	(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

DRO = Diesel Range Organics

MRO = Motor Oil Range Organics

SCHMITZ RANCH QUADRANGLE
NEW MEXICO - RIO ARriba COUNTY
1963



Animas Environmental Services, LLC

DRAWN BY:
N. Willis

DATE DRAWN:
April 4, 2011

REVISIONS BY:
C. Lameman

DATE REVISED:
December 10, 2012

CHECKED BY:
L. Cupps

DATE CHECKED:
December 10, 2012

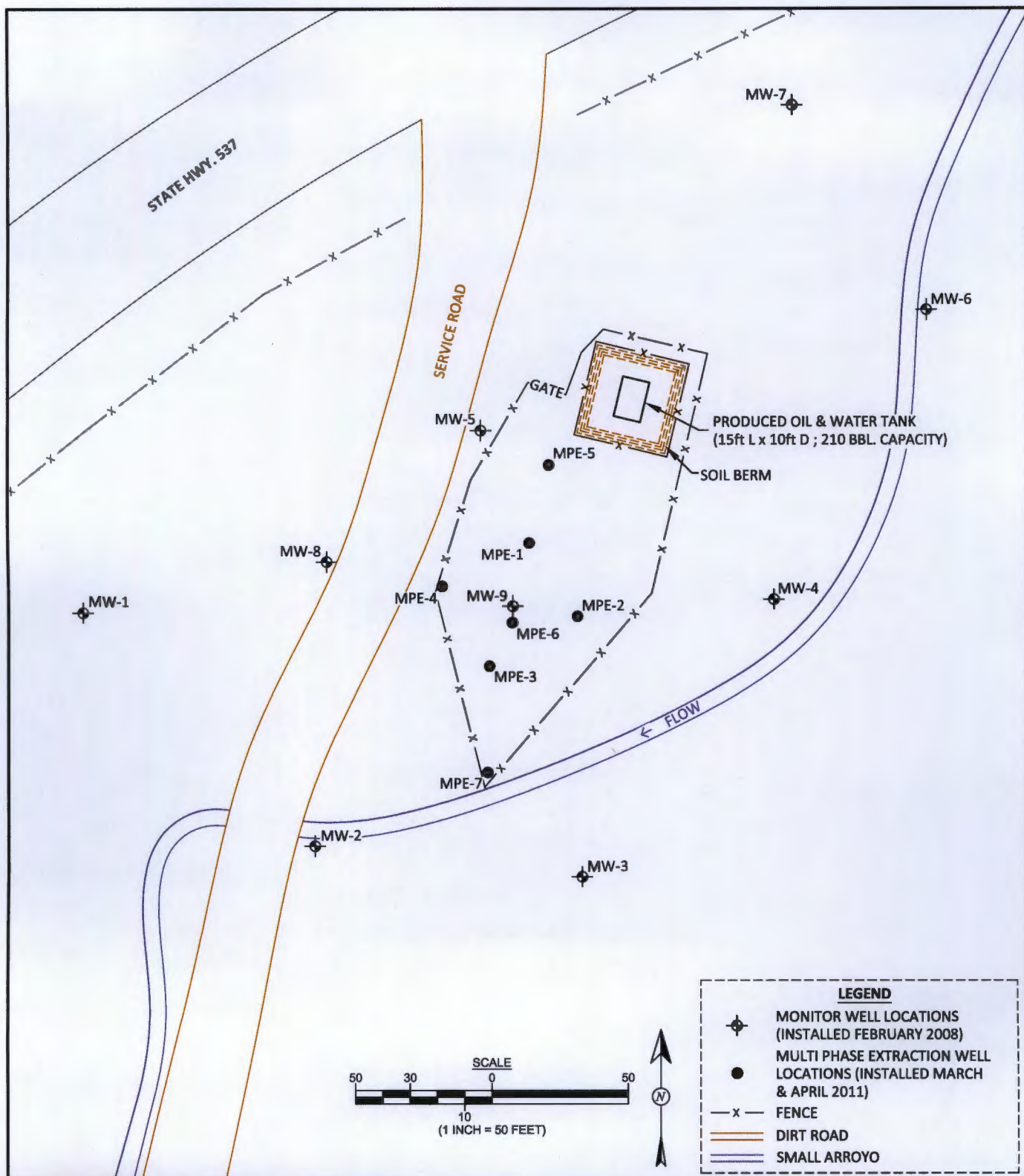
APPROVED BY:
E. McNally

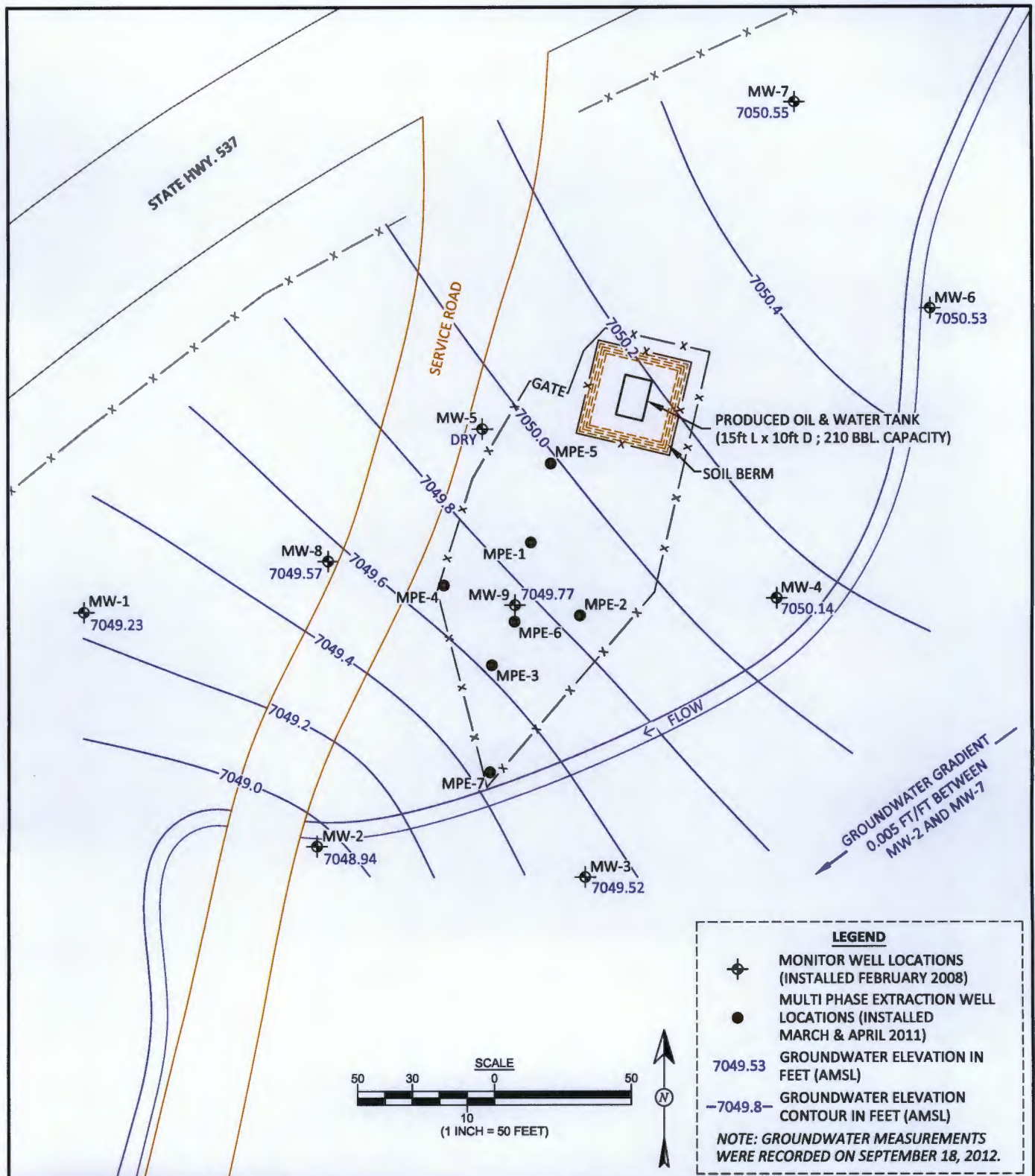
DATE APPROVED:
December 10, 2012

FIGURE 1

TOPOGRAPHIC SITE LOCATION MAP

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



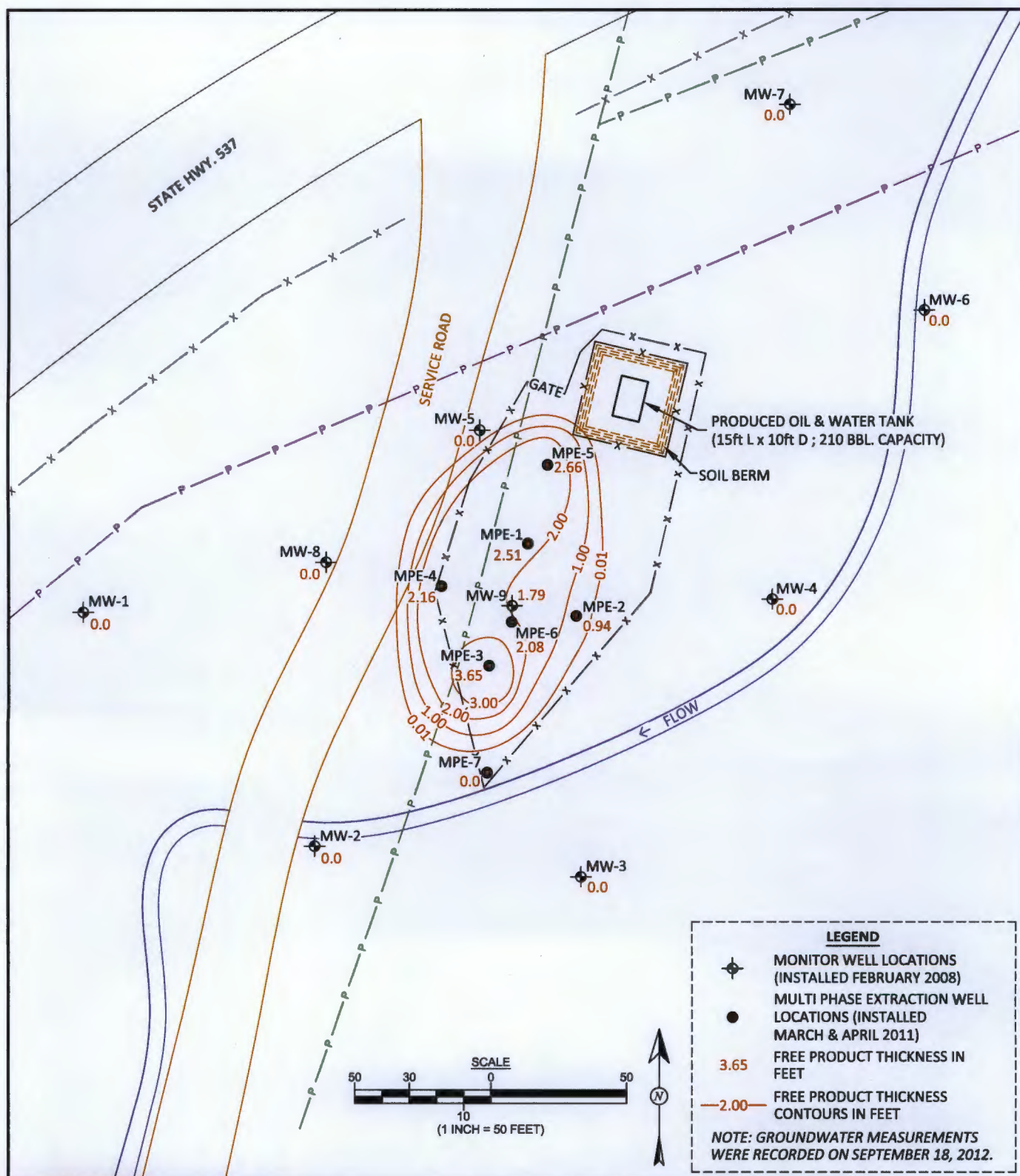


DRAWN BY: N. Willis	DATE DRAWN: April 4, 2011
REVISIONS BY: C. Lameman	DATE REVISED: December 10, 2012
CHECKED BY: C. Lameman	DATE CHECKED: December 10, 2012
APPROVED BY: E. McNally	DATE APPROVED: December 10, 2012

FIGURE 3

GROUNDWATER ELEVATION CONTOURS, SEPTEMBER 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



DRAWN BY: N. Willis	DATE DRAWN: April 4, 2011
REVISIONS BY: C. Lameman	DATE REVISED: December 10, 2012
CHECKED BY: C. Lameman	DATE CHECKED: December 10, 2012
APPROVED BY: E. McNally	DATE APPROVED: December 10, 2012

FIGURE 4

FREE PRODUCT THICKNESS CONTOURS, SEPTEMBER 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

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:	<i>L. Lamore</i>

Project No.: AES 080101
Date: 9-10-2012
Time:
Form: 1 of 1

[illegible]

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

Animas Environmental Services

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

Project No.: AES 080101

Date: 9/21/2013

Arrival Time: 1108

Air Temp: 72°

T.O.C. Elev. (ft): 7085.2

Total Well Depth (ft): 39.15

(taken at initial gauging of all wells)

Time: 1230 (taken prior to purging well)

Time: _____ (taken after sample collection)

D.T.W.: _____ Thickness: _____ Time: _____

Water Quality Parameters - Recorded During Well Purging

[illegible]

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: 3.5 H₂O column



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

October 02, 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.: 1209B16

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/25/2012 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. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1209B16

Date Reported: 10/2/2012

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Animas Environmental Services**Client Sample ID:** Trip Blank**Project:** BMG HWY 537 2008 SPILL**Collection Date:****Lab ID:** 1209B16-001**Matrix:** TRIP BLANK**Received Date:** 9/25/2012 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/27/2012 2:43:50 AM
Toluene	ND	1.0		µg/L	1	9/27/2012 2:43:50 AM
Ethylbenzene	ND	1.0		µg/L	1	9/27/2012 2:43:50 AM
Xylenes, Total	ND	2.0		µg/L	1	9/27/2012 2:43:50 AM
Surr: 4-Bromofluorobenzene	75.0	69.7-152		%REC	1	9/27/2012 2:43:50 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1209B16

Date Reported: 10/2/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-8

Project: BMG HWY 537 2008 SPILL

Collection Date: 9/21/2012 11:30:00 AM

Lab ID: 1209B16-002

Matrix: AQUEOUS

Received Date: 9/25/2012 10:10:00 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	9/26/2012 5:43:37 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	9/26/2012 5:43:37 PM
Surr: DNOP	125	79.5-166		%REC	1	9/26/2012 5:43:37 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/27/2012 3:13:57 AM
Surr: BFB	96.4	69.8-119		%REC	1	9/27/2012 3:13:57 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	9/27/2012 3:13:57 AM
Toluene	ND	1.0		µg/L	1	9/27/2012 3:13:57 AM
Ethylbenzene	ND	1.0		µg/L	1	9/27/2012 3:13:57 AM
Xylenes, Total	ND	2.0		µg/L	1	9/27/2012 3:13:57 AM
Surr: 4-Bromofluorobenzene	86.9	69.7-152		%REC	1	9/27/2012 3:13:57 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209B16

02-Oct-12

Client: Animas Environmental Services

Project: BMG HWY 537 2008 SPILL

Sample ID	MB-3926		SampType:	MBLK		TestCode:	EPA Method 8015B: Diesel Range			
Client ID:	PBW		Batch ID:	3926		RunNo:	5768			
Prep Date:	9/26/2012		Analysis Date:	9/26/2012		SeqNo:	166167	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	1.2		1.000		124	79.5	166			

Sample ID	LCS-3926		SampType:	LCS		TestCode:	EPA Method 8015B: Diesel Range			
Client ID:	LCSW		Batch ID:	3926		RunNo:	5768			
Prep Date:	9/26/2012		Analysis Date:	9/26/2012		SeqNo:	166173	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.5	1.0	5.000	0	90.7	74	157			
Surr: DNOP	0.56		0.5000		113	79.5	166			

Sample ID	LCSD-3926		SampType:	LCSD		TestCode:	EPA Method 8015B: Diesel Range			
Client ID:	LCSS02		Batch ID:	3926		RunNo:	5768			
Prep Date:	9/26/2012		Analysis Date:	9/26/2012		SeqNo:	166174	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.5	1.0	5.000	0	89.7	74	157	1.03	23	
Surr: DNOP	0.54		0.5000		108	79.5	166	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209B16

02-Oct-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:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/26/2012	SeqNo:	166864	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	23		20.00		114	69.8	119			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	LCSW	Batch ID:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/26/2012	SeqNo:	166865	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	102	75.9	119			
Surr: BFB	15		20.00		75.1	69.8	119			

Sample ID	1209B16-002AMS	SampType:	MS	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	MW-8	Batch ID:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/27/2012	SeqNo:	166868	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0.02000	86.0	63.5	131			
Surr: BFB	20		20.00		101	69.8	119			

Sample ID	1209B16-002AMSD	SampType:	MSD	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	MW-8	Batch ID:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/27/2012	SeqNo:	166869	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0.02000	86.3	63.5	131	0.266	16.7	
Surr: BFB	17		20.00		83.6	69.8	119	0	0	

Qualifiers:

- | | |
|--|--|
| * 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 |
| P Sample pH greater than 2 | R RPD outside accepted recovery limits |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1209B16

02-Oct-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:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/26/2012	SeqNo:	166873	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		107	69.7	152			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R5801	RunNo:	5801					
Prep Date:		Analysis Date:	9/26/2012	SeqNo:	166874	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	80	120			
Toluene	21	1.0	20.00	0	107	80	120			
Ethylbenzene	22	1.0	20.00	0	110	80	120			
Xylenes, Total	66	2.0	60.00	0	110	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		110	69.7	152			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87106
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Animas Environmental

Work Order Number: 1209B16

Received by/date: *Nos*

09/25/12

Logged By: Lindsay Mangin

9/25/2012 10:10:00 AM

[Signature]

Completed By: Lindsay Mangin

9/25/2012 3:01:43 PM

[Signature]

Reviewed By: *[Signature]* 9.26.12

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 $>0^{\circ}\text{C}$ 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 _____

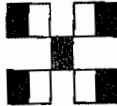
Regarding: _____

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			



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

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.