



March 31, 2017

Jim Griswold
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

**Re: 2016 Annual Report
Benson-Montin-Greer
Highway 537 Llaves Pipeline 2008 Release
Rio Arriba County, New Mexico
NMOCD ORDER #860429**

Dear Mr. Griswold:

On behalf of Benson-Montin-Greer Drilling Corporation (BMG), Animas Environmental Services, LLC (AES) has prepared this Annual Progress Report, which provides details of groundwater monitoring and gauging conducted during 2016 and early 2017 at the BMG Llaves Pipeline 2008 Release location. Periodic monitoring was conducted on June 16, 2016, October 20, 2016, and January 27, 2017 in accordance with recommendations presented in the Site Investigation Report prepared by AES and submitted in June 2008.

1.0 Site Information

1.1 Site Location

The 2008 release originated on the Schmitz Ranch, on the south side of Highway 537 and flowed south and southwest through a small unnamed arroyo for a distance of approximately 920 linear feet. This arroyo drains to the Los Ojitos Arroyo, which eventually drains to Largo Canyon. The release location is described legally as being located within the NW¼ NE¼ Section 18, T25N, R3W in Rio Arriba County, New Mexico. Latitude and longitude were recorded as being N36.40357 and W107.18422, respectively. A topographic site location map, based on an excerpt from the U.S. Geological Survey (USGS) 7.5-minute Schmitz Ranch, Rio Arriba County, New Mexico topographic quadrangle (USGS 1963), is included as Figure 1, and a general site plan is presented as Figure 2.

604 W. Piñon St.
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970-403-3084

1.2 Release History

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.

January 9, 2008 - 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.

April and May 2008 - AES conducted a site investigation, 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. The locations of the monitoring wells are presented on Figure 2.

March 21 and 22, 2011 - AES installed five remediation wells, MPE-1 through MPE-5, in and around the area of the release, primarily in the area of MW-9.

April 14, 2011 - AES installed two additional MPE wells, MPE-6 and MPE-7, at the site. The locations of the remediation wells are presented on Figure 2. Installation details were presented in the Periodic Progress Report submitted to NMOCD and dated August 10, 2011.

1.3 Groundwater Monitoring and Sampling, 2008 to 2015

Monitor wells MW-1 through MW-7 were monitored and sampled from 2008 to 2011 and had dissolved phase concentrations which remained below laboratory detection limits or applicable standards for benzene, toluene, ethylbenzene, and xylene (BTEX) for eight consecutive quarters. Well MW-8 was monitored and sampled from 2008 to 2013 and had dissolved phase BTEX concentrations which remained below laboratory detection limits for nine consecutive quarters. Cumulative groundwater measurement and water quality data are presented in Table 1, and a summary of groundwater analytical results is presented in Table 2.

Groundwater monitoring and measurement of non-aqueous phase liquid (NAPL) were conducted on a periodic basis throughout 2014 and 2015. MW-9 and MPE-1 through MPE-6 continue to have measurable NAPL thicknesses. MPE-7, which is hydraulically down-gradient, has not had any measurable NAPL since April of 2014.

2.0 Groundwater Monitoring and Gauging

AES conducted groundwater monitoring and NAPL measurement at the former BMG Highway 537 Truck Receiving Station on June 17, 2016, October 20, 2016, and January 26, 2017. Depth to groundwater measurements are presented in Table 1, and previous groundwater analytical results are presented in Table 2. Groundwater elevation contours for each event are presented on Figures 2A, 2B, and 2C, and NAPL thickness contours are included on Figures 3A, 3B, and 3C. Depth to Groundwater Measurement Forms are included as an attachment.

2.1 June 2016

2.1.1 Groundwater Measurements

On June 17, 2016, groundwater measurements were conducted for MW-1, MW-3, MW-4, and MW-6 through MW-9. Groundwater measurements were not recorded for MW-2 and MW-5 as the wells were dry. Depth to groundwater was measured with a Keck water level (with accuracy to 0.01 foot). Groundwater elevations ranged from 7048.66 feet above mean sea level (AMSL) in MW-1 to 7049.86 feet AMSL in MW-6. Groundwater gradient was calculated to be 0.004 ft/ft in a southwest direction, which is consistent with historical site data.

2.1.2 NAPL Measurements

NAPL has been observed in MW-9 since the January 2010 sampling event, and in June 2016 the measured thickness was recorded at 0.01 feet. NAPL was also observed in six of the MPE wells (MPE 1-6), with thicknesses ranging from 0.12 feet in MPE-2 to 2.38 feet in MPE-4. NAPL was not observed in MPE-7 during the June 2016 gauging event.

2.2 October 2016

2.2.1 Groundwater Measurements

On October 20, 2016, groundwater measurements were conducted for MW-1, MW-3, MW-4, and MW-6 through MW-9. Groundwater measurements for MW-2 and MW-5 were not recorded as they were dry. Depth to groundwater and NAPL thickness was measured with a Keck water level (with accuracy to 0.01 foot). Groundwater elevations ranged from 7048.37 feet AMSL in MW-1 to 7049.64 feet AMSL in MW-6. Groundwater gradient was calculated to be 0.004 ft/ft in a southwest direction.

2.2.2 NAPL Measurements

In October 2016, NAPL thickness for MW-9 was 0.27 feet. NAPL has been observed in MW-9 since January of 2010. NAPL was also observed in six of the MPE wells (MPE 1-6), with thicknesses ranging from 0.12 feet in MPE-2 to 2.38 feet in MPE-4. NAPL was not observed in MPE-7 during the October 2016 gauging event.

2.3 January 2017

Groundwater and NAPL monitoring was conducted on January 27, 2017, to fulfill the December 2016 periodic monitoring commitment (due to weather and scheduling constraints).

2.3.1 Groundwater Measurements

On January 27, 2017, groundwater measurements were conducted for MW-1, MW-3, MW-4, and MW-6 through MW-9. Measurements were not recorded for MW-2 and MW-5, as the wells were dry. Depth to groundwater was measured with a Keck water level (with accuracy to 0.01 foot). Groundwater elevations ranged from 7048.45 feet AMSL in MW-1 to 7049.66 feet AMSL in MW-7. Groundwater gradient was calculated to be 0.004 ft/ft in a southwest direction.

2.3.2 NAPL Measurements

In January 2017, NAPL thickness for MW-9 was 0.50 feet. NAPL was also observed in six of the MPE wells (MPE 1-6), with thicknesses ranging from 0.25 feet in MPE-2 to 2.52 feet in MPE-4. NAPL was not observed in MPE-7 during the January 2017 gauging event.

3.0 Conclusions and Recommendations

AES conducted groundwater monitoring and NAPL measurement at the former BMG Highway 537 Truck Receiving Station on June 17, 2016, October 20, 2016, and January 26, 2017. Groundwater samples were not collected from monitor wells MW-1 through MW-8 because these wells have had at least eight consecutive events of concentrations below laboratory detection limits or below applicable New Mexico Water Quality Control Commission (WQCC) standards.

Based on site gauging in 2016, there has not been appreciable change in NAPL thicknesses in MPE wells or distribution across the site since 2015. However, note that throughout 2016, measured NAPL thickness in MPE-3 reverted to 2012-13 levels, exceeding 2 feet in measurable thickness (RSI MPE units ran periodically in 2014 and 2015). The MPE wells (designed for multi-phase extraction), have continued to exhibit up to 2.5 feet of measurable NAPL, except for MPE-7, which did not have any measurable thickness of NAPL. Monitor well MW-9 also continues to exhibit NAPL which has fluctuated up to 0.5 feet. AES and BMG are currently evaluating further mitigation measures to remove NAPL from the subsurface.

Seven monitor wells (MW-1, 2, 3, 4, 6, 7, and 8) have now had eight or more consecutive quarters with contaminant concentrations below laboratory detection limits or below New Mexico WQCC standards. MW-5 has been dry since installation in 2008. It is recommended that six of the wells be plugged and abandoned:

- Upgradient wells: MW-1, MW 4, MW-5, MW-6, and MW-8.
- Downgradient, but south of a southwest-trending wash: MW-3.

Two wells, MW-7 (upgradient) and MW-2 (downgradient), will be left open to measure depth to groundwater and to assist in calculating hydraulic gradient. AES proposes to plug and abandon these wells in conjunction with monitor wells to be plugged and abandoned at the nearby BMG Highway 537 2009 release locations.

6.0 Scheduled Site Activities

The following site activities have been tentatively scheduled in 2017:

- Plug and abandon six monitor wells (MW-1, MW-3, MW-4, MW-5, MW-6, and MW-8) - Tentatively scheduled for May or June 2017;
- Periodic gauging events scheduled throughout 2017; and
- Continued periodic hand bailing of select MPE wells;

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

Respectfully Submitted,



David W. Johnson
Geologist



Elizabeth McNally, P.E.

Tables

Table 1. Summary of Groundwater Measurement and Water Quality Data

Table 2. Summary of Groundwater Analytical Results

Figures

Figure 1. Topographic Site Location Map

Figure 2A. Site Plan with Groundwater Elevation Contours, June 2016

Figure 2B. Site Plan with Groundwater Elevation Contours, October 2016

Figure 2C. Site Plan with Groundwater Elevation Contours, January 2017

Figure 3A. NAPL Thickness, June 2016

Figure 3B. NAPL Thickness, October 2016

Figure 3C. NAPL Thickness, January 2017

Field Forms

Field groundwater and NAPL gauging forms.

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Tables

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-1	04-Dec-12	7082.57		33.54		7049.03	NM	NM	NM	NM	NM
MW-1	26-Mar-13	7082.57		33.31		7049.26	NM	NM	NM	NM	NM
MW-1	26-Jun-13	7082.57		33.53		7049.04	NM	NM	NM	NM	NM
MW-1	25-Sep-13	7082.57		33.44		7049.13	NM	NM	NM	NM	NM
MW-1	14-Jan-14	7082.57		33.51		7049.06	NM	NM	NM	NM	NM
MW-1	04-Apr-14	7082.57		33.50		7049.07	NM	NM	NM	NM	NM
MW-1	10-Sep-14	7082.57		33.75		7048.82	NM	NM	NM	NM	NM
MW-1	03-Dec-14	7082.57		33.83		7048.74	NM	NM	NM	NM	NM
MW-1	27-Mar-15	7082.57		33.64		7048.93	NM	NM	NM	NM	NM
MW-1	08-Dec-15	7082.57		33.84		7048.73	NM	NM	NM	NM	NM
MW-1	17-Jun-16	7082.57		33.91		7048.66	NM	NM	NM	NM	NM
MW-1	20-Oct-16	7082.57		34.20		7048.37	NM	NM	NM	NM	NM

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MW-1	27-Jan-17	7082.57		34.12		7048.45	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
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-2	04-Dec-12	7079.94		31.44		7048.50	NM	NM	NM	NM	NM
MW-2	26-Mar-13	7079.94		31.00		7048.94	NM	NM	NM	NM	NM
MW-2	26-Jun-13	7079.94		31.34		7048.60	NM	NM	NM	NM	NM
MW-2	25-Sep-13	7079.94		30.98		7048.96	NM	NM	NM	NM	NM
MW-2	14-Jan-14	7079.94		31.28		7048.66	NM	NM	NM	NM	NM
MW-2	04-Apr-14	7079.94		31.15		7048.79	NM	NM	NM	NM	NM
MW-2	10-Sep-14	7079.94		Dry		NA	NM - WELL DRY				
MW-2	03-Dec-14	7079.94		Dry		NA	NM - WELL DRY				
MW-2	27-Mar-15	7079.94		Dry		NA	NM - WELL DRY				

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MW-2	08-Dec-15	7079.94		Dry		NA	NM - WELL DRY				
MW-2	17-Jun-16	7079.94		Dry		NA	NM - WELL DRY				
MW-2	20-Oct-16	7079.94		Dry		NA	NM - WELL DRY				
MW-2	27-Jan-17	7079.94		Dry		NA	NM - WELL DRY				
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-3	04-Dec-12	7081.10		31.73		7049.37	NM	NM	NM	NM	NM
MW-3	26-Mar-13	7081.10		31.53		7049.57	NM	NM	NM	NM	NM
MW-3	26-Jun-13	7081.10		31.75		7049.35	NM	NM	NM	NM	NM
MW-3	25-Sep-13	7081.10		31.68		7049.42	NM	NM	NM	NM	NM
MW-3	14-Jan-14	7081.10		31.77		7049.33	NM	NM	NM	NM	NM
MW-3	04-Apr-14	7081.10		31.66		7049.44	NM	NM	NM	NM	NM

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MW-3	10-Sep-14	7081.10		32.19		7048.91	NM	NM	NM	NM	NM
MW-3	03-Dec-14	7081.10		32.18		7048.92	NM	NM	NM	NM	NM
MW-3	27-Mar-15	7081.10		31.78		7049.32	NM	NM	NM	NM	NM
MW-3	08-Dec-15	7081.10		32.12		7048.98	NM	NM	NM	NM	NM
MW-3	17-Jun-16	7081.10		32.21		7048.89	NM	NM	NM	NM	NM
MW-3	20-Oct-16	7081.10		32.47		7048.63	NM	NM	NM	NM	NM
MW-3	27-Jan-17	7081.10		32.36		7048.74	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
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-4	04-Dec-12	7084.79		34.83		7049.96	NM	NM	NM	NM	NM
MW-4	26-Mar-13	7084.79		34.82		7049.97	NM	NM	NM	NM	NM
MW-4	26-Jun-13	7084.79		35.85		7048.94	NM	NM	NM	NM	NM
MW-4	25-Sep-13	7084.79		34.83		7049.96	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-4	14-Jan-14	7084.79		34.85		7049.94	NM	NM	NM	NM	NM
MW-4	04-Apr-14	7084.79		34.84		7049.95	NM	NM	NM	NM	NM
MW-4	10-Sep-14	7084.79		35.14		7049.65	NM	NM	NM	NM	NM
MW-4	03-Dec-14	7084.79		35.21		7049.58	NM	NM	NM	NM	NM
MW-4	27-Mar-15	7084.79		35.04		7049.75	NM	NM	NM	NM	NM
MW-4	08-Dec-15	7084.79		35.28		7049.51	NM	NM	NM	NM	NM
MW-4	17-Jun-16	7084.79		35.31		7049.48	NM	NM	NM	NM	NM
MW-4	20-Oct-16	7084.79		35.54		7049.25	NM	NM	NM	NM	NM
MW-4	27-Jan-17	7084.79		35.52		7049.27	NM	NM	NM	NM	NM
MW-5	05-May-08	7087.98		Dry		NA					NM - WELL DRY
MW-5	24-Sep-08	7087.98		Dry		NA					NM - WELL DRY
MW-5	02-Jan-09	7087.98		Dry		NA					NM - WELL DRY
MW-5	07-Apr-09	7087.98		Dry		NA					NM - WELL DRY
MW-5	07-Jul-09	7087.98		Dry		NA					NM - WELL DRY
MW-5	12-Oct-09	7087.98		Dry		NA					NM - WELL DRY
MW-5	12-Jan-10	7087.98		Dry		NA					NM - WELL DRY
MW-5	13-Oct-10	7087.98		Dry		NA					NM - WELL DRY
MW-5	20-Jan-11	7087.98		Dry		NA					NM - WELL DRY
MW-5	09-May-11	7087.98		Dry		NA					NM - WELL DRY
MW-5	15-Aug-11	7087.98		Dry		NA					NM - WELL DRY
MW-5	21-Nov-11	7087.98		Dry		NA					NM - WELL DRY
MW-5	21-Feb-12	7087.98		Dry		NA					NM - WELL DRY
MW-5	24-May-12	7087.98		Dry		NA					NM - WELL DRY
MW-5	18-Sep-12	7087.98		Dry		NA					NM - WELL DRY
MW-5	04-Dec-12	7087.98		Dry		NA					NM - WELL DRY
MW-5	26-Mar-13	7087.98		Dry		NA					NM - WELL DRY

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-5	26-Jun-13	7087.98		Dry		NA					NM - WELL DRY
MW-5	25-Sep-13	7087.98		Dry		NA					NM - WELL DRY
MW-5	14-Jan-14	7087.98		Dry		NA					NM - WELL DRY
MW-5	04-Apr-14	7087.98		Dry		NA					NM - WELL DRY
MW-5	10-Sep-14	7088.98		Dry		NA					NM - WELL DRY
MW-5	03-Dec-14	7088.98		Dry		NA					NM - WELL DRY
MW-5	27-Mar-15	7088.98		Dry		NA					NM - WELL DRY
MW-5	08-Dec-15	7088.98		Dry		NA					NM - WELL DRY
MW-5	17-Jun-16	7088.98		Dry		NA					NM - WELL DRY
MW-5	20-Oct-16	7088.98		Dry		NA					NM - WELL DRY
MW-5	27-Jan-17	7088.98		Dry		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
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

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-6	04-Dec-12	7088.43		38.04		7050.39	NM	NM	NM	NM	NM
MW-6	26-Mar-13	7088.43		37.94		7050.49	NM	NM	NM	NM	NM
MW-6	26-Jun-13	7088.43		38.09		7050.34	NM	NM	NM	NM	NM
MW-6	25-Sep-13	7088.43		38.11		7050.32	NM	NM	NM	NM	NM
MW-6	14-Jan-14	7088.43		38.14		7050.29	NM	NM	NM	NM	NM
MW-6	04-Apr-14	7088.43		38.14		7050.29	NM	NM	NM	NM	NM
MW-6	10-Sep-14	7088.43		38.37		7050.06	NM	NM	NM	NM	NM
MW-6	03-Dec-14	7088.43		38.55		7049.88	NM	NM	NM	NM	NM
MW-6	27-Mar-15	7088.43		38.28		7050.15	NM	NM	NM	NM	NM
MW-6	08-Dec-15	7088.43		38.55		7049.88	NM	NM	NM	NM	NM
MW-6	17-Jun-16	7088.43		38.57		7049.86	NM	NM	NM	NM	NM
MW-6	20-Oct-16	7088.43		38.79		7049.64	NM	NM	NM	NM	NM
MW-6	27-Jan-17	7088.43		38.81		7049.62	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

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-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-7	04-Dec-12	7090.15		39.74		7050.41	NM	NM	NM	NM	NM
MW-7	26-Mar-13	7090.15		39.61		7050.54	NM	NM	NM	NM	NM
MW-7	26-Jun-13	7090.15		39.80		7050.35	NM	NM	NM	NM	NM
MW-7	25-Sep-13	7090.15		39.81		7050.34	NM	NM	NM	NM	NM
MW-7	14-Jan-14	7090.15		39.85		7050.30	NM	NM	NM	NM	NM
MW-7	04-Apr-14	7090.15		39.89		7050.26	NM	NM	NM	NM	NM
MW-7	10-Sep-14	7090.15		40.07		7050.08	NM	NM	NM	NM	NM
MW-7	03-Dec-14	7090.15		40.24		7049.91	NM	NM	NM	NM	NM
MW-7	27-Mar-15	7090.15		39.94		7050.21	NM	NM	NM	NM	NM
MW-7	08-Dec-15	7090.15		40.27		7049.88	NM	NM	NM	NM	NM
MW-7	17-Jun-16	7090.15		40.30		7049.85	NM	NM	NM	NM	NM
MW-7	20-Oct-16	7090.15		40.51		7049.64	NM	NM	NM	NM	NM
MW-7	27-Jan-17	7090.15		40.49		7049.66	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

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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-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-8	04-Dec-12	7085.20		35.81		7049.39	7.43	0.315	4.92	8.50	-91.2
MW-8	26-Mar-13	7085.20		35.65		7049.55	6.98	0.737	6.02	13.26	-66.2
MW-8	26-Jun-13	7085.20		35.83		7049.37	6.90	1.467	9.32	18.87	-22.9
MW-8	25-Sep-13	7085.20		35.74		7049.46	NM	NM	NM	NM	NM
MW-8	14-Jan-14	7085.20		35.87		7049.33	NM	NM	NM	NM	NM
MW-8	04-Apr-14	7085.20		35.79		7049.41	NM	NM	NM	NM	NM
MW-8	10-Sep-14	7085.20		36.04		7049.16	NM	NM	NM	NM	NM
MW-8	03-Dec-14	7085.20		36.15		7049.05	NM	NM	NM	NM	NM
MW-8	27-Mar-15	7085.20		35.94		7049.26	NM	NM	NM	NM	NM
MW-8	08-Dec-15	7085.20		36.19		7049.01	NM	NM	NM	NM	NM
MW-8	17-Jun-16	7085.20		36.28		7048.92	NM	NM	NM	NM	NM
MW-8	20-Oct-16	7085.20		36.54		7048.66	NM	NM	NM	NM	NM
MW-8	27-Jan-17	7085.20		36.49		7048.71	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
MW-9	12-Jan-10	7083.64	32.43	34.80	2.37	7050.68	NM - 2.37 feet NAPL				
MW-9	13-Oct-10	7083.64	32.63	35.29	2.66	7050.42	NM - 2.66 feet NAPL				

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MW-9	20-Jan-11	7083.64	32.71	35.21	2.50	7050.38					NM - 2.50 feet NAPL
MW-9	09-May-11	7083.64	32.43	34.96	2.53	7050.65					NM - 2.53 feet NAPL
MW-9	15-Aug-11	7083.64	33.11	35.33	2.22	7050.04					NM - 2.22 feet NAPL
MW-9	07-Oct-11	7083.64	33.14	35.23	2.09	7050.04					NM - 2.09 feet NAPL
MW-9	21-Nov-11	7083.64	33.25	35.37	2.12	7049.92					NM - 2.12 feet NAPL
MW-9	21-Feb-12	7083.64	33.14	35.06	1.92	7050.07					NM - 1.92 feet NAPL
MW-9	24-May-12	7083.64	33.15	35.19	2.04	7050.04					NM - 2.04 feet NAPL
MW-9	18-Sep-12	7083.64	33.47	35.26	1.79	7049.77					NM - 1.79 feet NAPL
MW-9	04-Dec-12	7083.64	33.68	35.64	1.96	7049.52					NM - 1.96 feet NAPL
MW-9	26-Mar-13	7083.64	33.53	35.22	1.69	7049.73					NM - 1.69 feet NAPL
MW-9	26-Jun-13	7083.64	33.70	35.27	1.57	7049.59					NM - 1.57 feet NAPL
MW-9	25-Sep-13	7083.64	32.96	36.46	3.50	7049.90					NM - 3.50 feet NAPL
MW-9	14-Jan-14	7083.64	33.95	34.31	0.36	7049.61					NM - 0.36 feet NAPL
MW-9	04-Apr-14	7083.64	33.94	34.01	0.07	7049.68					NM - 0.07 feet NAPL
MW-9	10-Sep-14	7083.64	34.15	34.27	0.12	7049.46					NM - 0.12 feet NAPL
MW-9	03-Dec-14	7083.64	34.25	34.31	0.06	7049.38					NM - 0.06 feet NAPL
MW-9	27-Mar-15	7083.64	33.96	34.03	0.07	7049.66					NM - 0.07 feet NAPL
MW-9	08-Dec-15	7083.64	34.30	34.36	0.06	7049.33					NM - 0.01 feet NAPL
MW-9	17-Jun-16	7083.64	34.50	34.51	0.01	7049.14					NM - 0.01 feet NAPL
MW-9	20-Oct-16	7083.64	34.63	34.90	0.27	7048.95					NM - 0.27 feet NAPL
MW-9	27-Jan-17	7083.64	34.62	35.12	0.50	7048.91					NM - 0.50 feet NAPL
MPE-1	09-May-11	TBS	33.87	36.87	3.00	NA					NM - 3.00 feet NAPL
MPE-1	15-Aug-11	TBS	34.68	36.47	1.79	NA					NM - 1.79 feet NAPL
MPE-1	07-Oct-11	TBS	34.87	35.81	0.94	NA					NM - 0.94 feet NAPL
MPE-1	21-Nov-11	TBS	34.60	36.85	2.25	NA					NM - 2.25 feet NAPL
MPE-1	21-Feb-12	TBS	34.57	37.03	2.46	NA					NM - 2.46 feet NAPL
MPE-1	24-May-12	TBS	34.56	37.13	2.57	NA					NM - 2.57 feet NAPL

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Rio Arriba County, New Mexico

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MPE-1	18-Sep-12	TBS	34.91	37.42	2.51	NA					NM - 2.51 feet NAPL
MPE-1	04-Dec-12	TBS	35.06	37.54	2.48	NA					NM - 2.48 feet NAPL
MPE-1	26-Mar-13	TBS	34.91	37.33	2.42	NA					NM - 2.42 feet NAPL
MPE-1	26-Jun-13	TBS	35.09	37.57	2.48	NA					NM - 2.48 feet NAPL
MPE-1	25-Sep-13	TBS	35.07	38.13	3.06	NA					NM - 3.06 feet NAPL
MPE-1	14-Jan-14	TBS	35.12	37.44	2.32	NA					NM - 2.32 feet NAPL
MPE-1	04-Apr-14	TBS	35.10	37.40	2.30	NA					NM - 2.30 feet NAPL
MPE-1	10-Sep-14	TBS	35.36	37.70	2.34	NA					NM - 2.34 feet NAPL
MPE-1	03-Dec-14	TBS	35.44	37.77	2.33	NA					NM - 2.33 feet NAPL
MPE-1	09-Oct-15	TBS	35.48	37.37	1.89	NA					NM - 1.89 feet NAPL
MPE-1	27-Mar-15	TBS	35.22	37.29	2.07	NA					NM - 2.07 feet NAPL
MPE-1	09-Oct-15	TBS	35.48	37.37	1.89	NA					NM - 1.89 feet NAPL
MPE-1	08-Dec-15	TBS	35.58	37.60	2.02	NA					NM - 2.02 feet NAPL
MPE-1	17-Jun-16	TBS	35.62	37.72	2.10	NA					NM - 2.10 feet NAPL
MPE-1	20-Oct-16	TBS	35.84	38.05	2.21	NA					NM - 2.21 feet NAPL
MPE-1	27-Jan-17	TBS	35.80	37.88	2.08	NA					NM - 2.08 feet NAPL
MPE-2	09-May-11	TBS	32.50	33.73	1.23	NA					NM - 1.23 feet NAPL
MPE-2	15-Aug-11	TBS	33.28	33.69	0.41	NA					NM - 0.41 feet NAPL
MPE-2	07-Oct-11	TBS	33.33	33.34	0.01	NA					NM - 0.01 feet NAPL
MPE-2	21-Nov-11	TBS	33.28	33.41	0.13	NA					NM - 0.13 feet NAPL
MPE-2	21-Feb-12	TBS	33.24	33.66	0.42	NA					NM - 0.42 feet NAPL
MPE-2	24-May-12	TBS	33.21	33.91	0.70	NA					NM - 0.70 feet NAPL
MPE-2	18-Sep-12	TBS	33.50	34.44	0.94	NA					NM - 0.94 feet NAPL
MPE-2	04-Dec-12	TBS	33.68	34.68	1.00	NA					NM - 1.00 feet NAPL
MPE-2	26-Mar-13	TBS	33.50	34.82	1.32	NA					NM - 1.32 feet NAPL
MPE-2	26-Jun-13	TBS	33.66	34.88	1.22	NA					NM - 1.22 feet NAPL

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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-2	25-Sep-13	TBS	33.75	33.96	0.21	NA					NM - 0.21 feet NAPL
MPE-2	14-Jan-14	TBS	33.80	34.13	0.33	NA					NM - 0.33 feet NAPL
MPE-2	04-Apr-14	TBS	33.74	34.03	0.29	NA					NM - 0.29 feet NAPL
MPE-2	10-Sep-14	TBS	34.03	34.44	0.41	NA					NM - 0.41 feet NAPL
MPE-2	03-Dec-14	TBS	34.10	34.55	0.45	NA					NM - 0.45 feet NAPL
MPE-2	09-Oct-15	TBS	34.07	34.43	0.36	NA					NM - 0.36 feet NAPL
MPE-2	27-Mar-15	TBS	33.85	34.20	0.35	NA					NM - 0.35 feet NAPL
MPE-2	09-Oct-15	TBS	34.07	34.43	0.36	NA					NM - 0.36 feet NAPL
MPE-2	08-Dec-15	TBS	34.20	34.38	0.18	NA					NM - 0.18 feet NAPL
MPE-2	17-Jun-16	TBS	34.31	34.43	0.12	NA					NM - 0.12 feet NAPL
MPE-2	20-Oct-16	TBS	34.52	34.77	0.25	NA					NM - 0.75 feet NAPL
MPE-2	27-Jan-17	TBS	34.48	34.73	0.25	NA					NM - 0.25 feet NAPL
MPE-3	09-May-11	TBS	32.43	34.65	2.22	NA					NM - 2.22 feet NAPL
MPE-3	15-Aug-11	TBS	33.25	34.51	1.26	NA					NM - 1.26 feet NAPL
MPE-3	07-Oct-11	TBS	33.40	33.74	0.34	NA					NM - 0.34 feet NAPL
MPE-3	21-Nov-11	TBS	33.28	34.13	0.85	NA					NM - 0.85 feet NAPL
MPE-3	21-Feb-12	TBS	33.18	34.83	1.65	NA					NM - 1.65 feet NAPL
MPE-3	24-May-12	TBS	33.15	34.89	1.74	NA					NM - 1.74 feet NAPL
MPE-3	18-Sep-12	TBS	33.45	37.10	3.65	NA					NM - 3.65 feet NAPL
MPE-3	04-Dec-12	TBS	33.64	35.75	2.11	NA					NM - 2.11 feet NAPL
MPE-3	26-Mar-13	TBS	33.49	35.31	1.82	NA					NM - 1.82 feet NAPL
MPE-3	26-Jun-13	TBS	33.66	35.80	2.14	NA					NM - 2.14 feet NAPL
MPE-3	25-Sep-13	TBS	33.76	34.30	0.54	NA					NM - 0.54 feet NAPL
MPE-3	14-Jan-14	TBS	33.86	34.32	0.46	NA					NM - 0.46 feet NAPL
MPE-3	04-Apr-14	TBS	33.83	34.18	0.35	NA					NM - 0.35 feet NAPL
MPE-3	10-Sep-14	TBS	34.15	34.55	0.40	NA					NM - 0.40 feet NAPL

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	03-Dec-14	TBS	34.20	34.57	0.37	NA		NM - 0.37 feet NAPL			
MPE-3	09-Oct-15	TBS	34.10	34.47	0.37	NA		NM - 0.37 feet NAPL			
MPE-3	27-Mar-15	TBS	33.96	34.20	0.24	NA		NM - 0.24 feet NAPL			
MPE-3	09-Oct-15	TBS	34.10	34.47	0.37	NA		NM - 0.37 feet NAPL			
MPE-3	08-Dec-15	TBS	34.28	34.56	0.28	NA		NM - 0.28 feet NAPL			
MPE-3	17-Jun-16	TBS	34.18	36.01	1.83	NA		NM - 1.83 feet NAPL			
MPE-3	20-Oct-16	TBS	34.35	36.53	2.18	NA		NM - 2.18 feet NAPL			
MPE-3	27-Jan-17	TBS	34.29	36.48	2.19	NA		NM - 2.19 feet NAPL			
MPE-4	09-May-11	TBS	33.45	35.74	2.29	NA		NM - 2.29 feet NAPL			
MPE-4	15-Aug-11	TBS	34.26	35.85	1.59	NA		NM - 1.59 feet NAPL			
MPE-4	07-Oct-11	TBS	34.46	34.67	0.21	NA		NM - 0.21 feet NAPL			
MPE-4	21-Nov-11	TBS	34.20	35.92	1.72	NA		NM - 1.72 feet NAPL			
MPE-4	21-Feb-12	TBS	34.16	36.17	2.01	NA		NM - 2.01 feet NAPL			
MPE-4	24-May-12	TBS	34.16	36.08	1.92	NA		NM - 1.92 feet NAPL			
MPE-4	18-Sep-12	TBS	34.48	36.64	2.16	NA		NM - 2.16 feet NAPL			
MPE-4	04-Dec-12	TBS	34.63	37.03	2.40	NA		NM - 2.40 feet NAPL			
MPE-4	26-Mar-13	TBS	34.47	36.58	2.11	NA		NM - 2.11 feet NAPL			
MPE-4	26-Jun-13	TBS	34.63	37.06	2.43	NA		NM - 2.43 feet NAPL			
MPE-4	25-Sep-13	TBS	34.61	36.60	1.99	NA		NM - 1.99 feet NAPL			
MPE-4	14-Jan-14	TBS	34.62	37.00	2.38	NA		NM - 2.38 feet NAPL			
MPE-4	04-Apr-14	TBS	34.59	36.91	2.32	NA		NM - 2.32 feet NAPL			
MPE-4	10-Sep-14	TBS	34.89	37.22	2.33	NA		NM - 2.33 feet NAPL			
MPE-4	03-Dec-14	TBS	34.95	37.30	2.35	NA		NM - 2.35 feet NAPL			
MPE-4	09-Oct-15	TBS	34.90	36.86	1.96	NA		NM - 1.96 feet NAPL			
MPE-4	27-Mar-15	TBS	34.73	36.82	2.09	NA		NM - 2.09 feet NAPL			
MPE-4	09-Oct-15	TBS	34.90	36.86	1.96	NA		NM - 1.96 feet NAPL			

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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-4	08-Dec-15	TBS	35.09	37.17	2.08	NA					NM - 2.08 feet NAPL
MPE-4	17-Jun-16	TBS	35.13	37.51	2.38	NA					NM - 2.38 feet NAPL
MPE-4	20-Oct-16	TBS	35.38	37.83	2.45	NA					NM - 2.45 feet NAPL
MPE-4	27-Jan-17	TBS	35.31	37.83	2.52	NA					NM - 2.52 feet NAPL
MPE-5	09-May-11	TBS	34.93	37.70	2.77	NA					NM - 2.77 feet NAPL
MPE-5	15-Aug-11	TBS	35.68	37.80	2.12	NA					NM - 2.12 feet NAPL
MPE-5	07-Oct-11	TBS	35.69	37.82	2.13	NA					NM - 2.13 feet NAPL
MPE-5	21-Nov-11	TBS	35.58	38.16	2.58	NA					NM - 2.58 feet NAPL
MPE-5	21-Feb-12	TBS	35.61	38.03	2.42	NA					NM - 2.42 feet NAPL
MPE-5	25-May-12	TBS	35.61	37.97	2.36	NA					NM - 2.36 feet NAPL
MPE-5	18-Sep-12	TBS	35.89	38.55	2.66	NA					NM - 2.66 feet NAPL
MPE-5	04-Dec-12	TBS	36.06	38.84	2.78	NA					NM - 2.78 feet NAPL
MPE-5	26-Mar-13	TBS	35.94	38.36	2.42	NA					NM - 2.42 feet NAPL
MPE-5	26-Jun-13	TBS	36.12	38.12	2.00	NA					NM - 2.00 feet NAPL
MPE-5	25-Sep-13	TBS	36.09	38.38	2.29	NA					NM - 2.29 feet NAPL
MPE-5	14-Jan-14	TBS	36.15	38.50	2.35	NA					NM - 2.35 feet NAPL
MPE-5	04-Apr-14	TBS	36.15	38.32	2.17	NA					NM - 2.17 feet NAPL
MPE-5	10-Sep-14	TBS	36.38	38.86	2.48	NA					NM - 2.48 feet NAPL
MPE-5	03-Dec-14	TBS	36.49	38.91	2.42	NA					NM - 2.42 feet NAPL
MPE-5	09-Oct-15	TBS	36.45	38.57	2.12	NA					NM - 2.12 feet NAPL
MPE-5	27-Mar-15	TBS	36.27	38.28	2.01	NA					NM - 2.01 feet NAPL
MPE-5	09-Oct-15	TBS	36.45	38.57	2.12	NA					NM - 2.12 feet NAPL
MPE-5	08-Dec-15	TBS	36.58	38.92	2.34	NA					NM - 2.34 feet NAPL
MPE-5	17-Jun-16	TBS	36.66	38.90	2.24	NA					NM - 2.24 feet NAPL
MPE-5	20-Oct-16	TBS	36.88	39.31	2.43	NA					NM - 2.43 feet NAPL
MPE-5	27-Jan-17	TBS	36.84	39.20	2.36	NA					NM - 2.36 feet NAPL

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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	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 NAPL				
MPE-6	07-Oct-11	TBS	33.67	34.05	0.38	NA	NM - 0.38 feet NAPL				
MPE-6	21-Nov-11	TBS	33.51	34.64	1.13	NA	NM - 1.13 feet NAPL				
MPE-6	21-Feb-12	TBS	33.46	35.02	1.56	NA	NM - 1.56 feet NAPL				
MPE-6	24-May-12	TBS	33.43	35.15	1.72	NA	NM - 1.72 feet NAPL				
MPE-6	18-Sep-12	TBS	34.03	36.11	2.08	NA	NM - 2.08 feet NAPL				
MPE-6	04-Dec-12	TBS	33.88	36.23	2.35	NA	NM - 2.35 feet NAPL				
MPE-6	26-Mar-13	TBS	34.71	35.85	1.14	NA	NM - 1.14 feet NAPL				
MPE-6	26-Jun-13	TBS	33.88	36.45	2.57	NA	NM - 2.57 feet NAPL				
MPE-6	25-Sep-13	TBS	35.80	36.80	1.00	NA	NM - 1.00 feet NAPL				
MPE-6	14-Jan-14	TBS	33.88	36.14	2.26	NA	NM - 2.26 feet NAPL				
MPE-6	04-Apr-14	TBS	33.82	36.10	2.28	NA	NM - 2.28 feet NAPL				
MPE-6	10-Sep-14	TBS	34.12	36.42	2.30	NA	NM - 2.30 feet NAPL				
MPE-6	03-Dec-14	TBS	34.20	36.50	2.30	NA	NM - 2.30 feet NAPL				
MPE-6	09-Oct-15	TBS	34.16	36.21	2.05	NA	NM - 2.05 feet NAPL				
MPE-6	27-Mar-15	TBS	33.97	35.95	1.98	NA	NM - 1.98 feet NAPL				
MPE-6	09-Oct-15	TBS	34.16	36.21	2.05	NA	NM - 2.05 feet NAPL				
MPE-6	08-Dec-15	TBS	34.63	36.68	2.05	NA	NM - 2.05 feet NAPL				
MPE-6	17-Jun-16	TBS	34.36	36.65	2.29	NA	NM - 2.29 feet NAPL				
MPE-6	20-Oct-16	TBS	34.62	36.80	2.18	NA	NM - 2.18 feet NAPL				
MPE-6	27-Jan-17	TBS	34.55	36.76	2.21	NA	NM - 2.21 feet NAPL				
MPE-7	09-May-11	TBS	30.87	30.88	0.01	NA	NM - 0.01 feet NAPL				
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

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-7	21-Nov-11	TBS	31.54	31.55	0.01	NA	NM - 0.01 feet NAPL				
MPE-7	21-Feb-12	TBS	31.54	31.55	0.01	NA	NM - 0.01 feet NAPL				
MPE-7	24-May-12	TBS	31.52	31.53	0.01	NA	NM - 0.01 feet NAPL				
MPE-7	18-Sep-12	TBS		32.18		NA	NM	NM	NM	NM	NM
MPE-7	04-Dec-12	TBS		32.09		NA	NM	NM	NM	NM	NM
MPE-7	26-Mar-13	TBS		31.87		NA	NM	NM	NM	NM	NM
MPE-7	26-Jun-13	TBS		32.09		NA	NM	NM	NM	NM	NM
MPE-7	25-Sep-13	TBS		31.99		NA	NM	NM	NM	NM	NM
MPE-7	14-Jan-14	TBS		NM		NA	NM	NM	NM	NM	NM
MPE-7	04-Apr-14	TBS	32.00	32.01	0.01	NA	NM - 0.01 feet NAPL				
MPE-7	10-Sep-14	TBS		32.34		NA	NM	NM	NM	NM	NM
MPE-7	03-Dec-14	TBS		32.41		NA	NM	NM	NM	NM	NM
MPE-7	09-Oct-15	TBS		32.29		NA	NM	NM	NM	NM	NM
MPE-7	27-Mar-15	TBS		32.14		NA	NM	NM	NM	NM	NM
MPE-7	09-Oct-15	TBS		32.29		NA	NM	NM	NM	NM	NM
MPE-7	08-Dec-15	TBS		32.47		NA	NM	NM	NM	NM	NM
MPE-7	17-Jun-16	TBS		32.56		NA	NM	NM	NM	NM	NM
MPE-7	20-Oct-16	TBS		32.79		NA	NM	NM	NM	NM	NM
MPE-7	27-Jan-17	TBS		32.76		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 LABORATORY ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	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 LABORATORY 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-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 LABORATORY ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

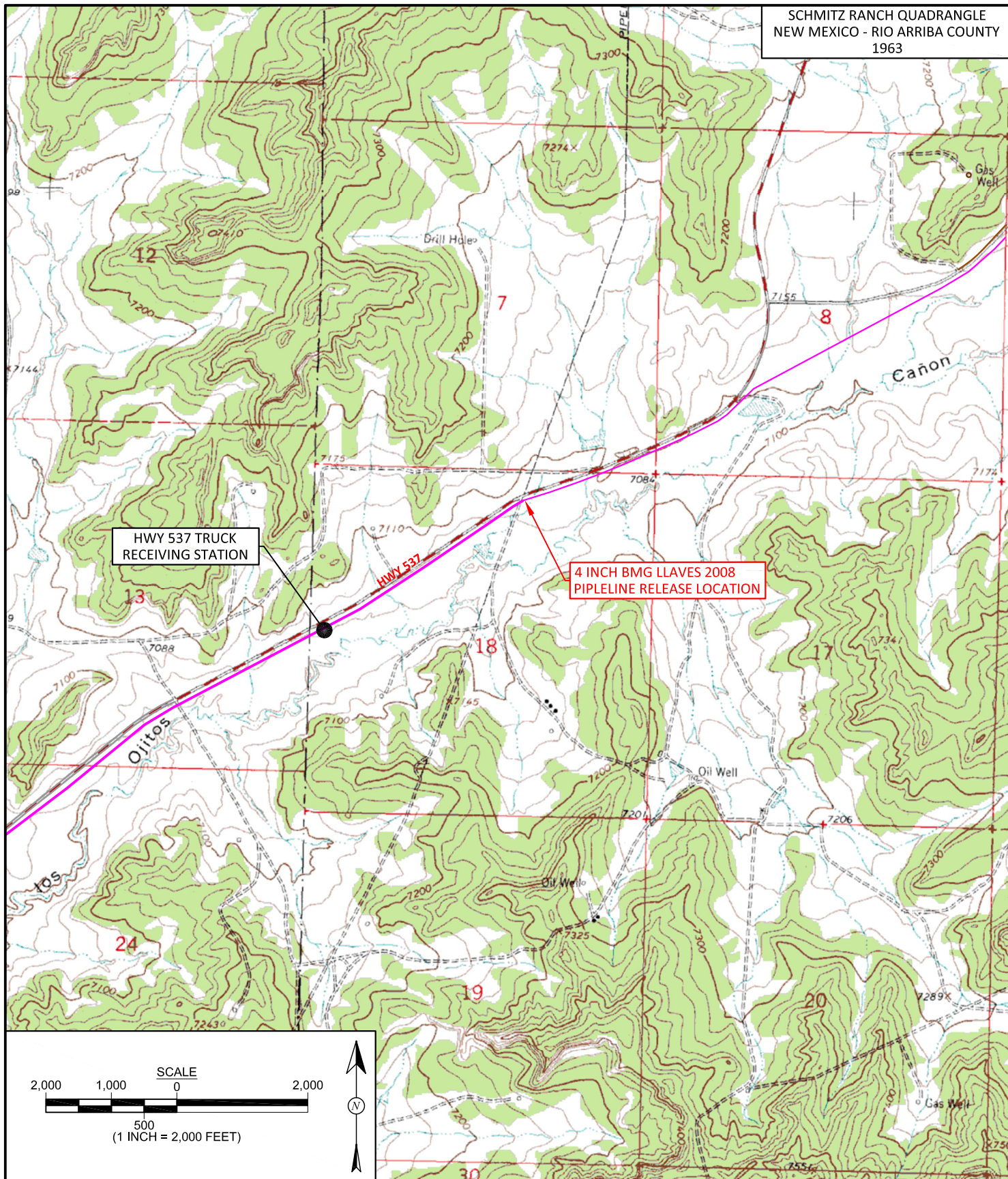
Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	GRO (mg/L)	DRO (mg/L)	MRO (mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B	8015B
New Mexico WQCC		10	750	750	620	NE	NE	NE
MW-7	20-Jan-11	<1.0	<1.0	<1.0	<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-8	04-Dec-12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	26-Mar-13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	26-Jun-13	<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 OR FREE PRODUCT						
MW-9	13-Oct-10	NS - 2.66 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	20-Jan-11	NS - 2.50 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	09-May-11	NS - 2.53 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	15-Aug-11	NS - 2.22 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	21-Nov-11	NS - 2.12 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	21-Feb-12	NS - 1.92 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	24-May-12	NS - 2.04 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	18-Sep-12	NS - 1.79 FEET OF CRUDE OIL OR FREE PRODUCT						

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

Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	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-9	04-Dec-12	NS - 1.96 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	26-Mar-13	NS - 1.69 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	26-Jun-13	NS - 1.57 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	25-Sep-13	NS - 3.50 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	14-Jan-14	NS - 0.36 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	04-Apr-14	NS - 0.07 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	10-Sep-14	NS - 0.12 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	03-Dec-14	NS - 0.06 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	27-Mar-15	NS - 0.07 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	08-Dec-15	NS - 0.05 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	17-Jun-16	NS - 0.01 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	20-Oct-16	NS - 0.27 FEET OF CRUDE OIL OR FREE PRODUCT						
MW-9	27-Jan-17	NS - 0.50 FEET OF CRUDE OIL OR FREE PRODUCT						

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

Figures



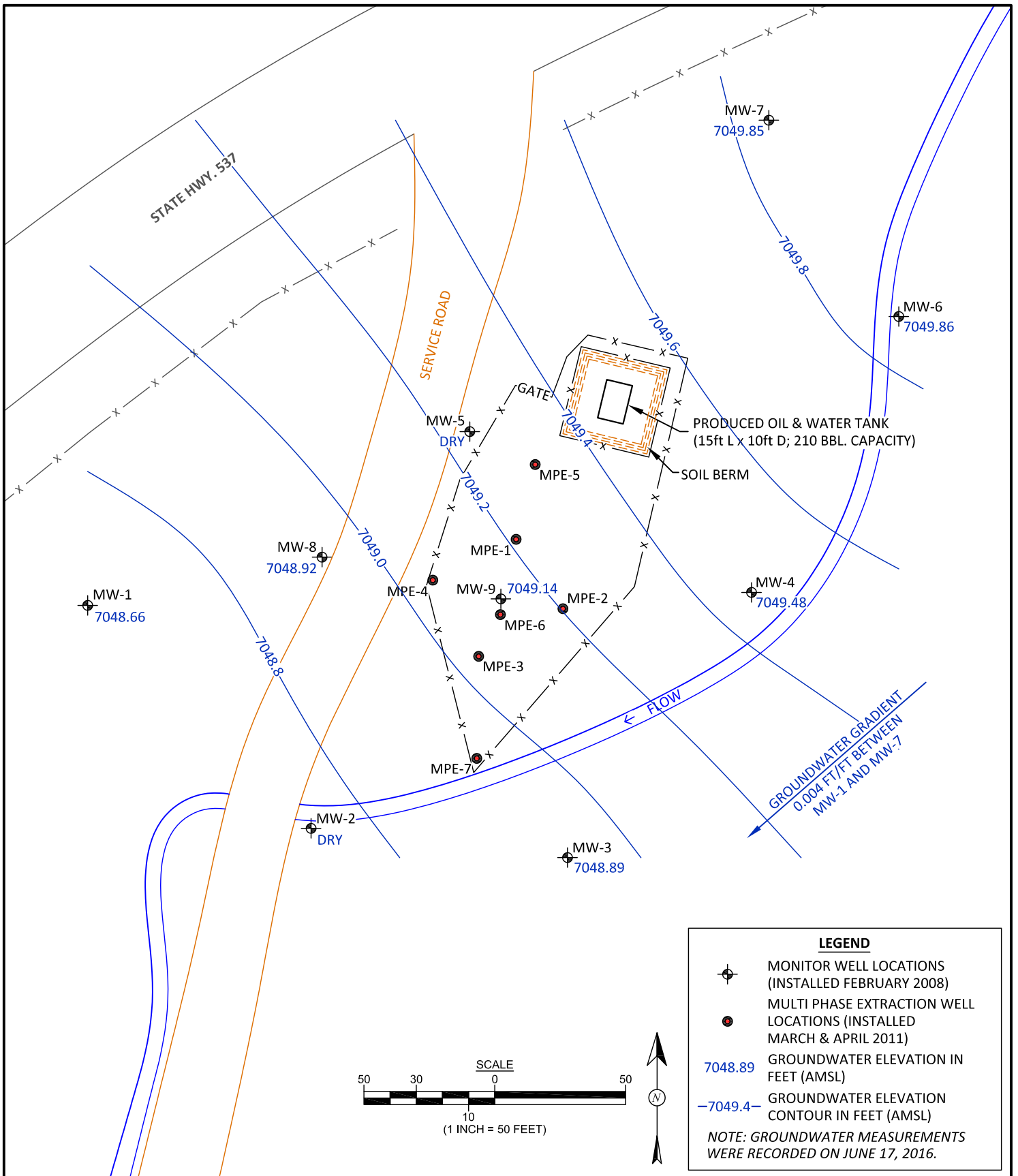
DRAWN BY: S. Glasses	DATE DRAWN: March 3, 2017
REVISIONS BY: S. Glasses	DATE REVISED: March 6, 2017
CHECKED BY: E. McNally	DATE CHECKED: March 6, 2017
APPROVED BY: E. McNally	DATE APPROVED: March 6, 2017

FIGURE 1

TOPOGRAPHIC SITE LOCATION MAP
 BMG HIGHWAY 537
 LLAVES 2008 PIPELINE OIL RELEASE
 NW¼ NE¼, SECTION 18, T25N, R3W
 RIO ARRIBA COUNTY, NEW MEXICO
 N36.40357, W107.18422



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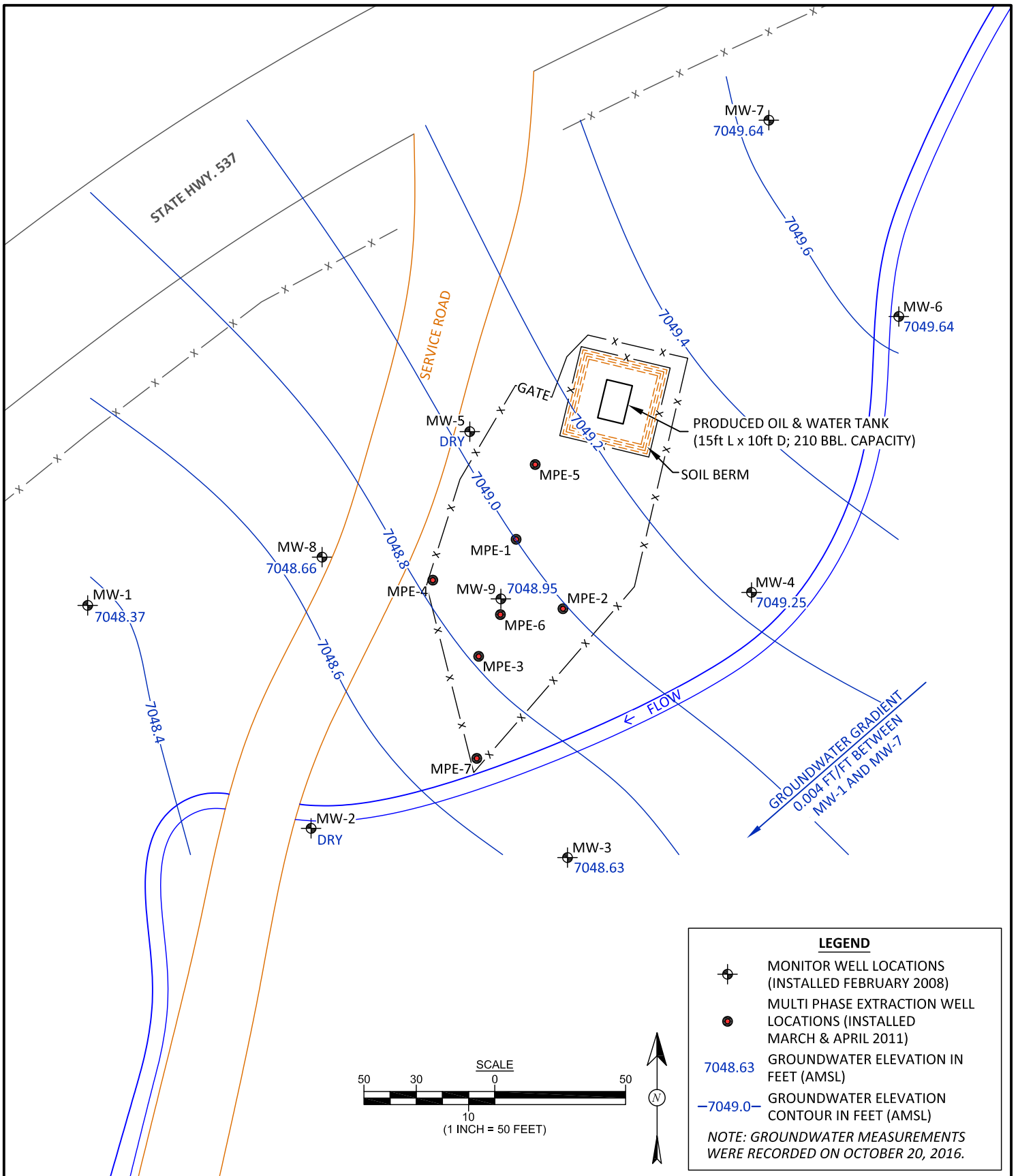
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FIGURE 2A

GROUNDWATER ELEVATION CONTOURS, JUNE 2016

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



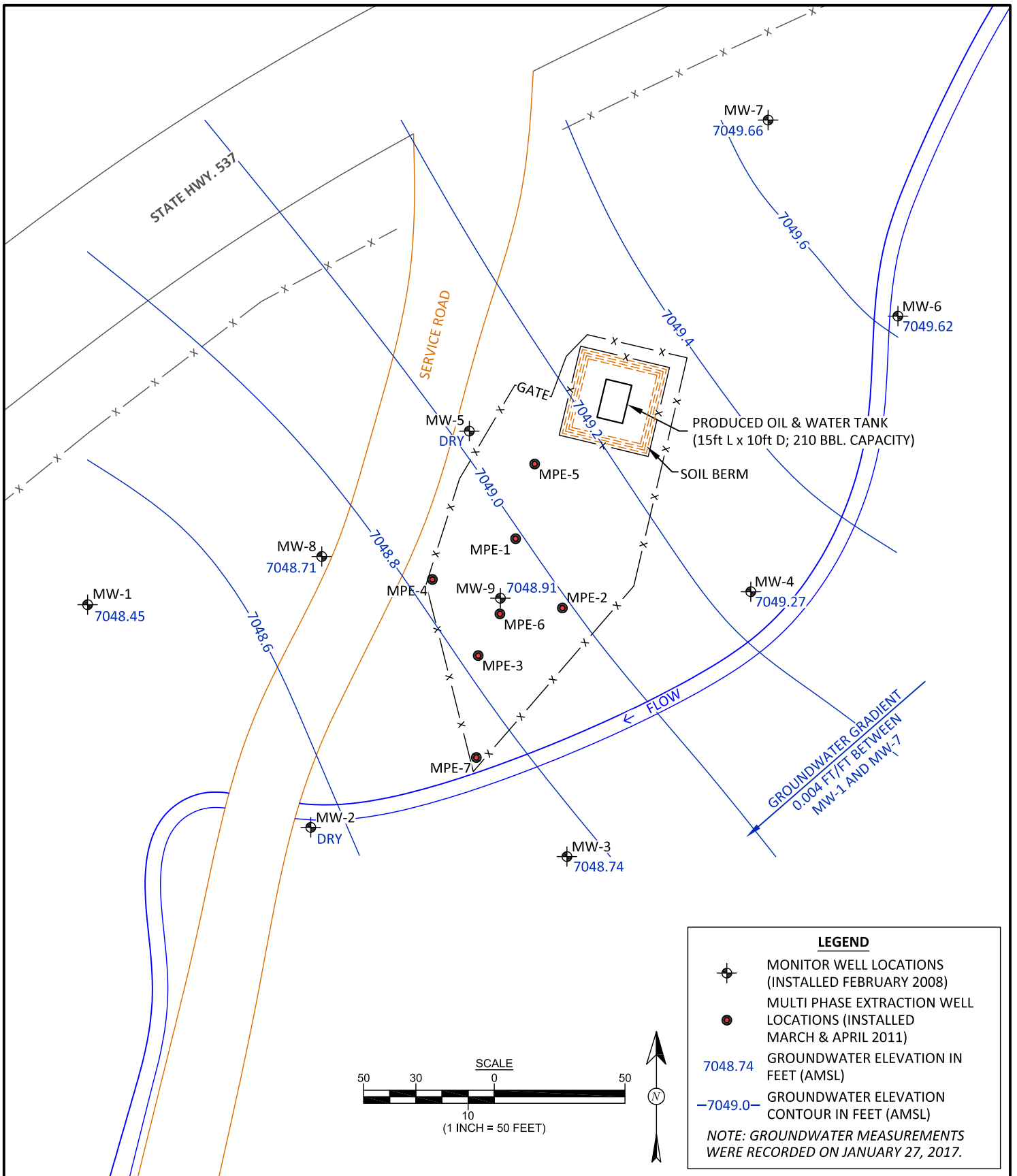
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REVISIONS BY: S. Glasses	DATE REVISED: March 6, 2017
CHECKED BY: E. McNally	DATE CHECKED: March 6, 2017
APPROVED BY: E. McNally	DATE APPROVED: March 6, 2017

FIGURE 2B

GROUNDWATER ELEVATION CONTOURS, OCTOBER 2016

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



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S. Glasses

DATE DRAWN:

March 3, 2017

REVISIONS BY:

S. Glasses

DATE REVISED:

March 6, 2017

CHECKED BY:

E. McNally

DATE CHECKED:

March 6, 2017

APPROVED BY:

E. McNally

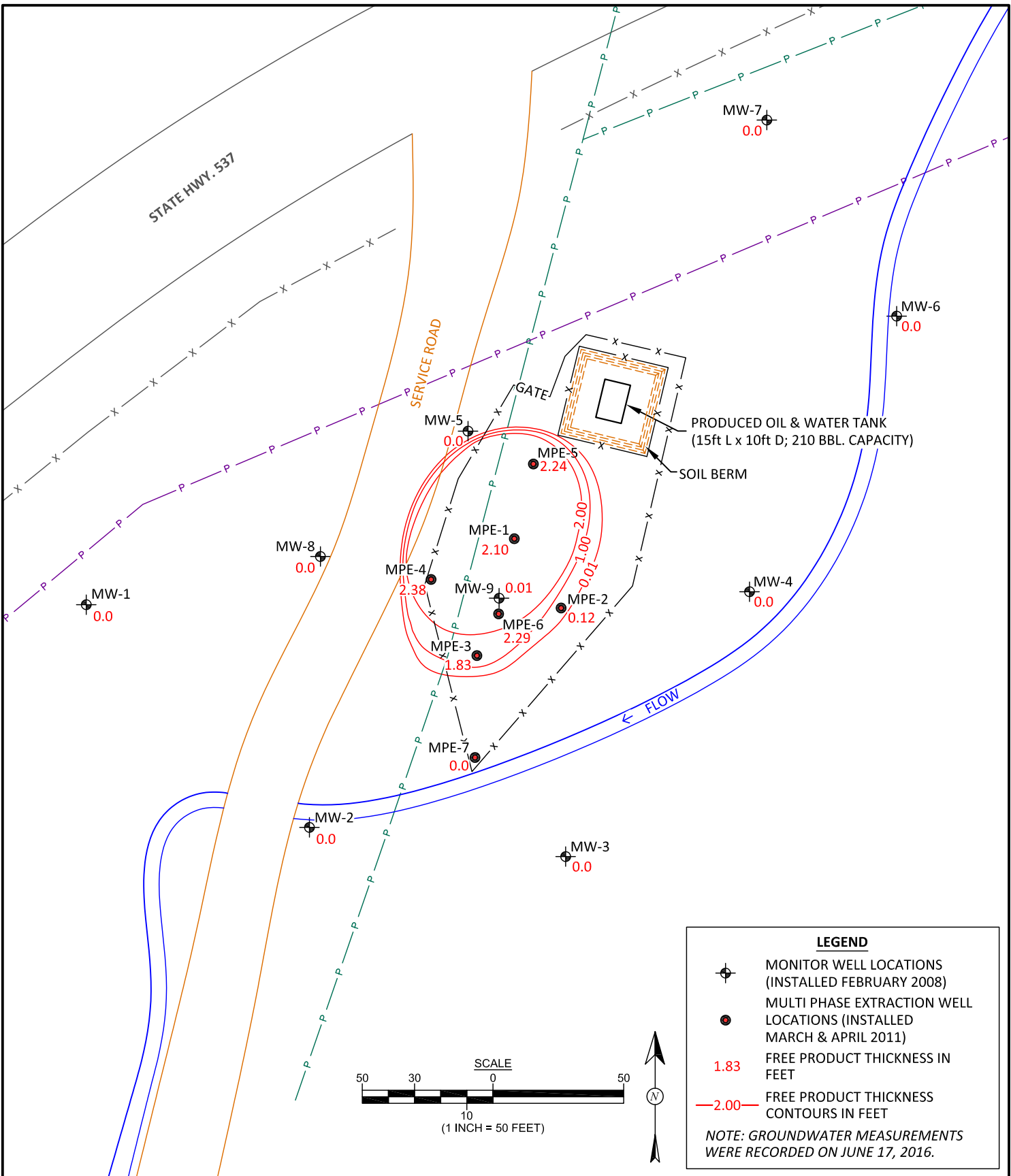
DATE APPROVED:

March 6, 2017

FIGURE 2C

**GROUNDWATER ELEVATION
CONTOURS, JANUARY 2017**

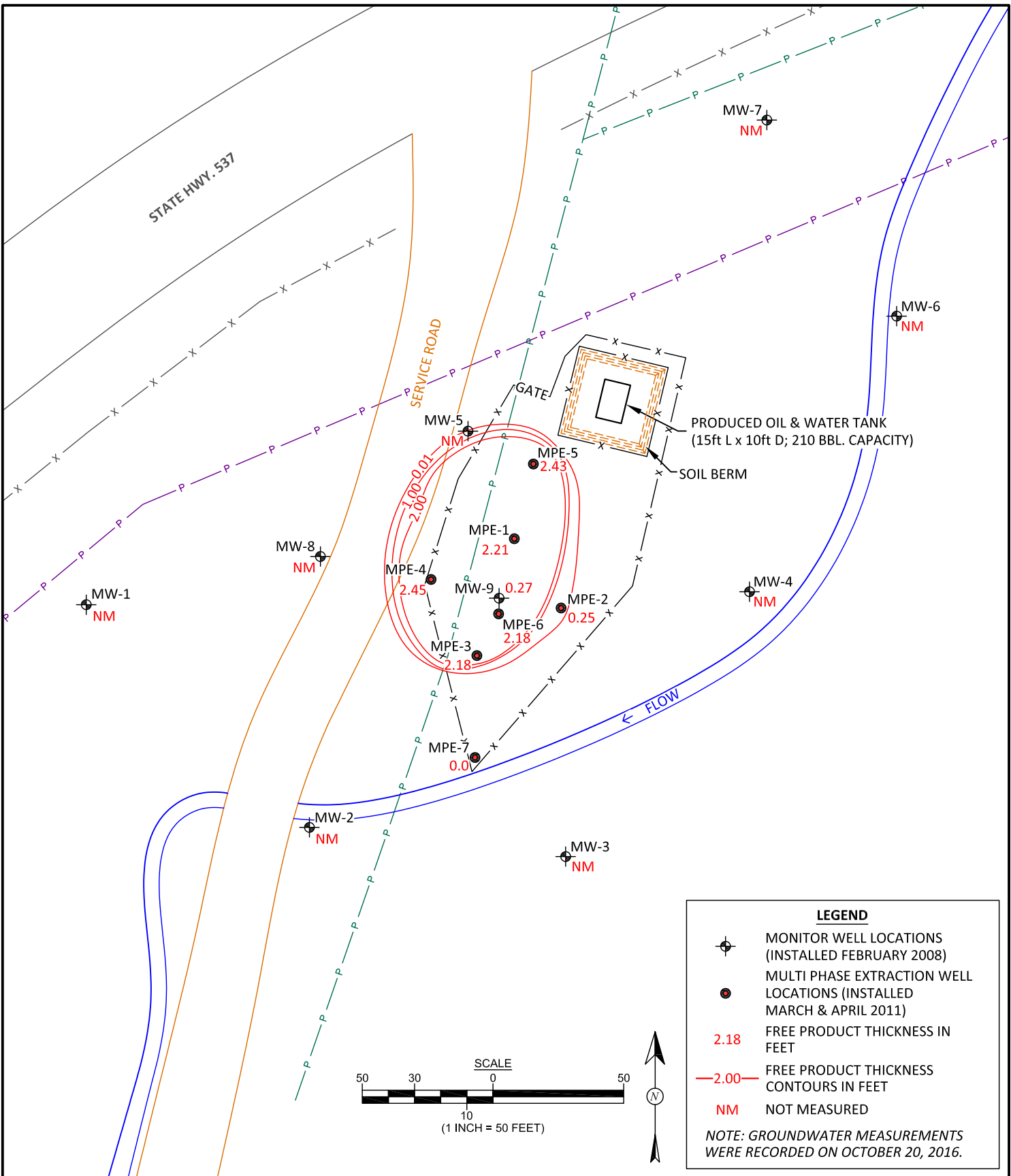
BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL RELEASE
NW¼ NE¼, SECTION 18, T25N, R3W
RIO ARriba COUNTY, NEW MEXICO
N36.40357, W107.18422



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REVISIONS BY: S. Glasses	DATE REVISED: March 6, 2017
CHECKED BY: E. McNally	DATE CHECKED: March 6, 2017
APPROVED BY: E. McNally	DATE APPROVED: March 6, 2017

FIGURE 3A
FREE PRODUCT THICKNESS CONTOURS, JUNE 2016
BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL RELEASE
NW¼ NE¼, SECTION 18, T25N, R3W
RIO ARRIBA COUNTY, NEW MEXICO
N36.40357, W107.18422



LEGEND

- MONITOR WELL LOCATIONS (INSTALLED FEBRUARY 2008)
- MULTI PHASE EXTRACTION WELL LOCATIONS (INSTALLED MARCH & APRIL 2011)
- 2.18 FREE PRODUCT THICKNESS IN FEET
- 2.00— FREE PRODUCT THICKNESS CONTOURS IN FEET
- NM NOT MEASURED

NOTE: GROUNDWATER MEASUREMENTS WERE RECORDED ON OCTOBER 20, 2016.

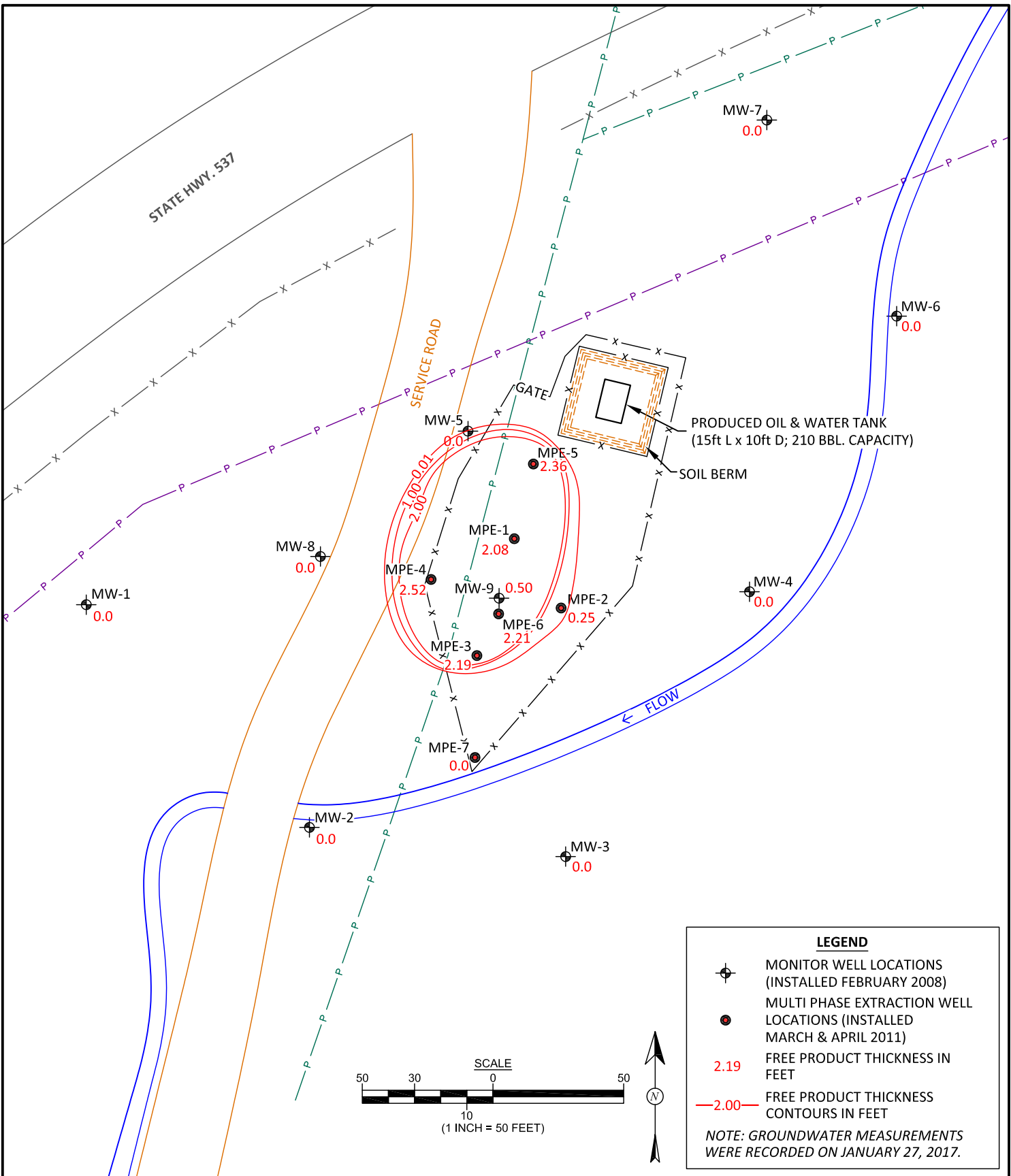


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REVISIONS BY: S. Glasses	DATE REVISED: March 6, 2017
CHECKED BY: E. McNally	DATE CHECKED: March 6, 2017
APPROVED BY: E. McNally	DATE APPROVED: March 6, 2017

FIGURE 3B

FREE PRODUCT THICKNESS CONTOURS, OCTOBER 2016
 BMG HIGHWAY 537
 LLAVES 2008 PIPELINE OIL RELEASE
 NW¼ NE¼, SECTION 18, T25N, R3W
 RIO ARRIBA COUNTY, NEW MEXICO
 N36.40357, W107.18422



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DRAWN BY: S. Glasses	DATE DRAWN: March 6, 2017
REVISIONS BY: S. Glasses	DATE REVISED: March 6, 2017
CHECKED BY: E. McNally	DATE CHECKED: March 6, 2017
APPROVED BY: E. McNally	DATE APPROVED: March 6, 2017

LEGEND

- MONITOR WELL LOCATIONS (INSTALLED FEBRUARY 2008)
- MULTI PHASE EXTRACTION WELL LOCATIONS (INSTALLED MARCH & APRIL 2011)
- 2.19 FREE PRODUCT THICKNESS IN FEET
- 2.00 FREE PRODUCT THICKNESS CONTOURS IN FEET

NOTE: GROUNDWATER MEASUREMENTS WERE RECORDED ON JANUARY 27, 2017.

FIGURE 3C

FREE PRODUCT THICKNESS CONTOURS, JANUARY 2017
 BMG HIGHWAY 537
 LLAVES 2008 PIPELINE OIL RELEASE
 NW¼ NE¼, SECTION 18, T25N, R3W
 RIO ARRIBA COUNTY, NEW MEXICO
 N36.40357, W107.18422

Field Forms

Free Product Recovery Form

Animas Environmental Services
 604 W. Pinon St, Farmington NM 87401
 Tel. (505) 564-2281 Fax (505) 324-2022

Site: BMG **Project No.:** _____
Location: HWY 537 2008 Release **Date:** 1-27-17
Project: Groundwater Monitoring **Arrival Time:** 1200
Sampling Technician: S. Glasses **Air Temp:** 17°F

Well ID	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	Free Product Thickness (ft.)	Recovered Volume of Product (gal)	Recovered Volume of Water (gal)	Method / Notes / Observations
MPE-1	1039	35.80	37.88	2.08	_____	_____	1. Take photo of well and initial setup.
	1205	_____	_____	_____	_____	_____	2. Measure depth to NAPL and water. ✓
	1207	_____	_____	_____	_____	_____	3. Record time each time a bucket/drum is filled. ✓
	1208	_____	_____	_____	_____	_____	4. Estimate volume of recovered product. ✓
	1210	_____	_____	_____	_____	_____	5. Estimate volume of recovered water. ✓
	1212	_____	_____	_____	_____	_____	
	1214	_____	_____	_____	_____	_____	
	1216	38.50	38.63	0.13	0.5	0	
	1351	38.03	38.30	0.27	_____	_____	

Purged Free Product and Water Storage, Transport, and Disposal Information:

Free Product Recovery Form

Animas Environmental Services
 604 W. Pinon St, Farmington NM 87401
 Tel. (505) 564-2281 Fax (505) 324-2022

Site: BMG Project No.: _____
 Location: HWY 537 2008 Release Date: 1-27-17
 Project: Groundwater Monitoring Arrival Time: 1223
 Sampling Technician: S. Gilasses Air Temp: 19°F

Well ID	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	Free Product Thickness (ft.)	Recovered Volume of Product (gal)	Recovered Volume of Water (gal)	Method / Notes / Observations
MPE-3	1053	34.29	36.48	2.19	_____	_____	1. Take photo of well and initial setup.
	1225	/	/	/	/	/	2. Measure depth to NAPL and water. ✓
	1227	/	/	/	/	/	3. Record time each time a bucket/drum is filled. ✓
	1228	/	/	/	/	/	4. Estimate volume of recovered product. ✓
	1230	/	/	/	/	/	5. Estimate volume of recovered water. ✓
	1231	/	/	/	/	/	
	1232	/	/	/	/	/	
	1233	/	/	/	/	/	
	1238	34.88	34.97	0.09	≈ 0.75	0	
	1354	34.53	34.99	0.46	_____	_____	

Purged Free Product and Water Storage, Transport, and Disposal Information:

Free Product Recovery Form

Animas Environmental Services
 604 W. Pinon St, Farmington NM 87401
 Tel. (505) 564-2281 Fax (505) 324-2022

Site: BMG **Project No.:** _____
Location: HWY 537 2008 Release **Date:** 1-27-17
Project: Groundwater Monitoring **Arrival Time:** 1246
Sampling Technician: _____ **Air Temp:** 20°F

Well ID	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	Free Product Thickness (ft.)	Recovered Volume of Product (gal)	Recovered Volume of Water (gal)	Method / Notes / Observations
MPE-4	1059	35.31	37.83	2.52	_____	_____	1. Take photo of well and initial setup.
	1247						2. Measure depth to NAPL and water.
	1248						3. Record time each time a bucket/drum is filled.
	1249						4. Estimate volume of recovered product.
	1250						5. Estimate volume of recovered water.
	1251						
	1252						
	1253						
	1255						
	1256	35.73	35.91	0.18	0.5	0	
	1400	35.102	35.94	0.32	_____	_____	

Purged Free Product and Water Storage, Transport, and Disposal Information:

Free Product Recovery Form

Animas Environmental Services
 604 W. Pinon St, Farmington NM 87401
 Tel. (505) 564-2281 Fax (505) 324-2022

Site: BMG Project No.: _____
 Location: HWY 537 2008 Release Date: 1-27-17
 Project: Groundwater Monitoring Arrival Time: 1302
 Sampling Technician: S. Glasses Air Temp: ~~24~~ 24 °F

Well ID	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	Free Product Thickness (ft.)	Recovered Volume of Product (gal)	Recovered Volume of Water (gal)	Method / Notes / Observations
MPE-5	1106	36.84	39.20	2.36	—	—	1. Take photo of well and initial setup.
	1305	/	/	/	/	/	2. Measure depth to NAPL and water. ✓
	1307	/	/	/	/	/	3. Record time each time a bucket/drum is filled. ✓
	1308	/	/	/	/	/	4. Estimate volume of recovered product. ✓
	1309	/	/	/	/	/	5. Estimate volume of recovered water. ✓
	1311	/	/	/	/	/	
	1313	/	/	/	/	/	
	1315	/	/	/	/	/	
	1316	36.23	36.39	0.16	0.5	0	
	1405	35.91	36.31	0.40	—	—	

Purged Free Product and Water Storage, Transport, and Disposal Information:

Free Product Recovery Form

Animas Environmental Services
 604 W. Pinon St, Farmington NM 87401
 Tel. (505) 564-2281 Fax (505) 324-2022

Site: BMG Project No.: _____
 Location: HWY 537 2008 Release Date: 1-27-17
 Project: Groundwater Monitoring Arrival Time: 1324
 Sampling Technician: _____ Air Temp: 24°F

Well ID	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	Free Product Thickness (ft.)	Recovered Volume of Product (gal)	Recovered Volume of Water (gal)	Method / Notes / Observations
MPE-6	1112	34.55	36.76	2.21	—	—	1. Take photo of well and initial setup.
	1326						2. Measure depth to NAPL and water.
	1327						3. Record time each time a bucket/drum is filled.
	1329						4. Estimate volume of recovered product.
	1330						5. Estimate volume of recovered water.
	1331						
	1333						
	1334						
	1335						
	1337						
	1338	33.98	34.10	0.12	6.5	0	
	1410	33.78	34.68	0.38	—	—	

Purged Free Product and Water Storage, Transport, and Disposal Information:

