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08 / 28 / 2013

QUARTERLY GROUNDWATER MONITORING REPORT
(June 2013 Event)

Property:

K-51 Pipeline Release
Sections 34 and 35, T26N, R6W
Rio Arriba County, New Mexico
SWG Project No. 0410003
August 28, 2013

Prepared for:
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QUARTERLY GROUNDWATER MONITORING REPORT
(June 2013 Event)

K-51 Pipeline Release
Sections 34 and 35, T26N, R6W
Rio Arriba County, New Mexico

SWG Project No. 0410G003

1.0 INTRODUCTION

1.1 Site Description & Background

The K-51 pipeline release site is located at the boundary of Sections 34 and 35, Township 26 North, Range 6 West, in Rio Arriba County, New Mexico, referred to hereinafter as the "Site" or "subject Site". The Site consists of silty/sandy canyon bottomland with native grasses, and is crossed by a natural gas pipeline operated by Enterprise Field Services, LLC (Enterprise).

On April 13, 2010, approximately 10 barrels of natural gas condensate were released from the Enterprise natural gas gathering pipeline at the Site, due to internal corrosion. Subsequent to the completion of excavation and off-site disposal of petroleum hydrocarbon affected soils, confirmation soil samples were collected from the excavation by Souder, Miller and Associates (SMA). In addition, one (1) groundwater sample was collected from the groundwater which recharged into the excavation. The excavation was then backfilled with unaffected soils.

In June 2010, eight (8) soil borings (BH-1 through BH-8) were advanced on-site by LT Environmental (LTE). Subsequent to advancement, four (4) of the soil borings were converted to groundwater monitoring wells (MW-1 through MW-4) (*Subsurface Investigation Report, dated August 9, 2010 – LTE*). Based on the results of soil and groundwater sampling activities, constituent of concern (COC) concentrations were identified in soil above the New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* (RALs) and in groundwater above the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards (GQSs).*

During April 2011, nine (9) soil borings (SB-9, SB-10, MW-11 through MW-14, SB-15, MW-16, and MW-17) were advanced by Southwest Geoscience (SWG) in and around the former K-51 release area to further evaluate the extent of dissolved phase COCs in groundwater. Additionally, fifteen (15) injection points were installed to allow In-Situ Chemical Oxidation (ISCO) of the COCs. ISCO activities were performed during May 2011 (*Supplemental Site Investigation and Corrective Action Report, dated October 5, 2011 - SWG*).

Based on the distribution of COCs in groundwater, a former drip valve may have been a historic source of petroleum hydrocarbon impact to groundwater in the vicinity of monitoring well MW-14. During March 2012, three (3) additional soil borings (MW-18,

MW-19 and MW-20) were advanced in and around the former drip valve area to further evaluate the extent COCs in groundwater as a result of the release (*Supplemental Site Investigation & Corrective Action Work Plan, dated April 23, 2012 – SWG*). Soil boring MW-18 was advanced to the west of the former drip valve, hydrogeologically cross-gradient, and soil borings MW-19 and MW-20 were advanced to the north and northwest of the drip valve, hydrogeologically down-gradient.

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

The Site location is depicted on Figure 1 of Appendix A which was reproduced from a portion of the United States Geological Survey (USGS) 7.5-minute series topographic map.

1.2 Scope of Work

The objective of the groundwater monitoring event was to further evaluate the concentrations of COCs in groundwater at the Site.

A Site Vicinity Map is included as Figure 2, and a Site Map, which indicates the approximate locations of the monitoring wells in relation to pertinent structures and general Site boundaries, is included as Figure 3 of Appendix A.

1.3 Standard of Care & Limitations

The findings and recommendations contained in this report represent SWG's professional opinions based upon information derived from on-Site activities and other services performed under this scope of work and were arrived at in accordance with currently acceptable professional standards. The findings were based upon analytical results provided by an independent laboratory. Evaluations of the geologic/hydrogeologic conditions at the Site for the purpose of this investigation are made from a limited number of available data points (i.e. soil borings and ground water samples) and site wide subsurface conditions may vary from these data points. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

This report is based upon a specific scope of work requested by Enterprise. The agreement between SWG and Enterprise outlines the scope of work, and only those tasks specifically authorized by that agreement or outlined in this report were performed. This report has been prepared for the intended use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and SWG.

2.0 SAMPLING PROGRAM

A quarterly groundwater sampling event was conducted on June 27th, 2013 by Aaron Bentley and Mahlia Abaya, SWG environmental professionals.

SWG's groundwater sampling program consisted of the following:

- Collection of one groundwater sample from each monitoring well utilizing low-flow sampling techniques. MW-20 was purged and sampled utilizing a disposable bailer because the depth to water at this location exceeds the lift capability of the peristaltic pump. MW-18 was not sampled during this event due to inadequate groundwater volume. This well appears to be almost completely silted in.

Prior to sample collection, SWG gauged the depth to fluids in each monitoring well using an interface probe capable of detecting light non-aqueous phase liquids (LNAPL). LNAPL was not identified at any monitoring well locations during the June 2013 gauging activities.

Prior to sample collection, each of the monitoring wells (with the exception of monitoring wells MW-18 and MW-20) was micro-purged utilizing low-flow sampling techniques. Low-flow refers to the velocity with which groundwater enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system, to the extent practical, taking into account established Site sampling objectives. Flow rates on the order of 0.1 to 0.5 L/min will be maintained during sampling activities, using dedicated sampling equipment.

The utilization of low-flow minimal drawdown techniques enables the isolation of the screened interval groundwater from the overlying stagnant casing water. The pump intake is placed within the screened interval such that the groundwater recovered is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The low-flow groundwater samples were collected from each monitoring well once produced groundwater was consistent in color, clarity, pH, DO, ORP, temperature and conductivity.

Monitoring well MW-20 was purged of three (3) casing volumes utilizing a disposable bailer, and sampled following groundwater recharge. Monitoring well MW-18 was not sampled due to inadequate groundwater generation (well silted in).

Groundwater samples were collected in laboratory prepared $HgCl_2$ preserved containers, sealed with custody tape and placed on ice in a cooler secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico.

3.0 LABORATORY ANALYTICAL PROGRAM

The groundwater samples collected from the monitoring wells during the groundwater sampling event were analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA method SW-846#8015M, and benzene, toluene, ethylbenzene and xylenes (BTEX) utilizing EPA method SW-846 #8021B.

A summary of the analysis, sample type, number of samples and EPA-approved methods are presented on the following table:

Analysis	Sample Type	No. of Samples	Method
TPH GRO/DRO	Groundwater	12	SW-846# 8015M
BTEX	Groundwater	12	SW-846# 8021B

Laboratory results are summarized in Table 1 included in Appendix B. The executed chain-of-custody form and laboratory data sheets are provided in Appendix C.

4.0 GROUNDWATER FLOW DIRECTION

The monitoring wells have been surveyed to determine top-of-casing (TOC) elevations. Prior to sample collection, SWG gauged the depth to fluids in each monitoring well. The groundwater flow direction at the Site is generally towards the west-northwest. The observed gradient during this monitoring event was approximately 0.01 ft/ft across the Site.

Groundwater measurements collected during the most recent gauging event in June 2013 are presented with TOC elevations in Table 2, Appendix B. A groundwater gradient map depicting the most recent gauging data is included as Figure 4 (Appendix A).

5.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to crude oil/condensate related releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the EMNRD/OCD rules, specifically NMAC 19.15.30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

5.1 Groundwater Samples

SWG compared BTEX concentrations or laboratory reporting limits (RLs) associated with the groundwater samples collected from monitoring wells during the June 2013 sampling event to the New Mexico WQCC *Groundwater Quality Standards*. The results

of the groundwater sample analyses are summarized in Table 1 of Appendix B. A Groundwater Quality Exceedance Zone map is provided as Figure 5 of Appendix A.

Benzene, Toluene, Ethylbenzene, and Xylenes

The groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-11, MW-12, MW-13, MW-16, MW-17, and MW-20 during the June 2013 sampling event did not exhibit benzene, toluene, ethylbenzene or xylenes concentrations above the respective WQCC *Groundwater Quality Standards*.

The groundwater samples collected from monitoring wells MW-1, MW-14, and MW-19 during the June 2013 sampling event exhibited benzene concentrations of 24 µg/L, 34 µg/L and 390 µg/L respectively, which exceed the WQCC *Groundwater Quality Standard* of 10 µg/L.

TPH GRO/DRO

The groundwater samples collected from monitoring wells MW-2, MW-3, MW-11, MW-12, MW-13, MW-16, MW-17, and MW-20 did not exhibit TPH GRO or TPH DRO concentrations above the laboratory RLs during the June 2013 sampling event.

The groundwater samples collected from monitoring wells MW-1, MW-4, MW-14, and MW-19 exhibited TPH GRO concentrations ranging from 0.22 mg/L to 2.7 mg/L. The highest GRO concentration during the June 2013 sampling event was observed in the groundwater sample from monitoring well MW-19.

The groundwater samples collected from monitoring wells MW-14 and MW-19 exhibited TPH DRO concentrations of 1.4 mg/L and 5.9 mg/L, respectively.

6.0 FINDINGS

During June 2013, SWG conducted a quarterly groundwater monitoring event at the K-51 Pipeline release site. The Site is located at the boundary of Sections 34 and 35, Township 26 North, Range 6 West, in Rio Arriba County, New Mexico. The Site consists of silty/sandy canyon bottomland with native grasses, and is crossed by a natural gas pipeline operated by Enterprise. The objective of the groundwater monitoring event was to further evaluate the concentrations of COCs in groundwater at the Site.

- During the completion of the sampling event, one (1) groundwater sample was collected from each monitoring well utilizing either low-flow sampling techniques or purge and sample (disposable bailer) sampling techniques. Monitoring well MW-18 was not sampled due to inadequate groundwater generation (well silted in).

- The groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-11, MW-12, MW-13, MW-16, MW-17, and MW-20 during the June 2013 sampling event did not exhibit benzene, toluene, ethylbenzene or xylenes concentrations above the respective WQCC *Groundwater Quality Standards*.

- The groundwater samples collected from monitoring wells MW-1, MW-14,

and MW-19 during the June 2013 sampling event exhibited benzene concentrations of 24 µg/L, 34 µg/L and 390 µg/L respectively, which exceed the WQCC *Groundwater Quality Standard* of 10 µg/L.

- COC concentrations increased at monitoring wells MW-14, and MW-19 when compared to the March 2013 event data. Due to terrain obstructions and safety considerations, additional delineation hydrogeologically downgradient of monitoring well MW-19 is not feasible.

7.0 RECOMMENDATIONS

Based on the results of groundwater monitoring activities, SWG has the following recommendations:

- Report the groundwater monitoring results to the OCD,
- Continue monitoring groundwater at the site.

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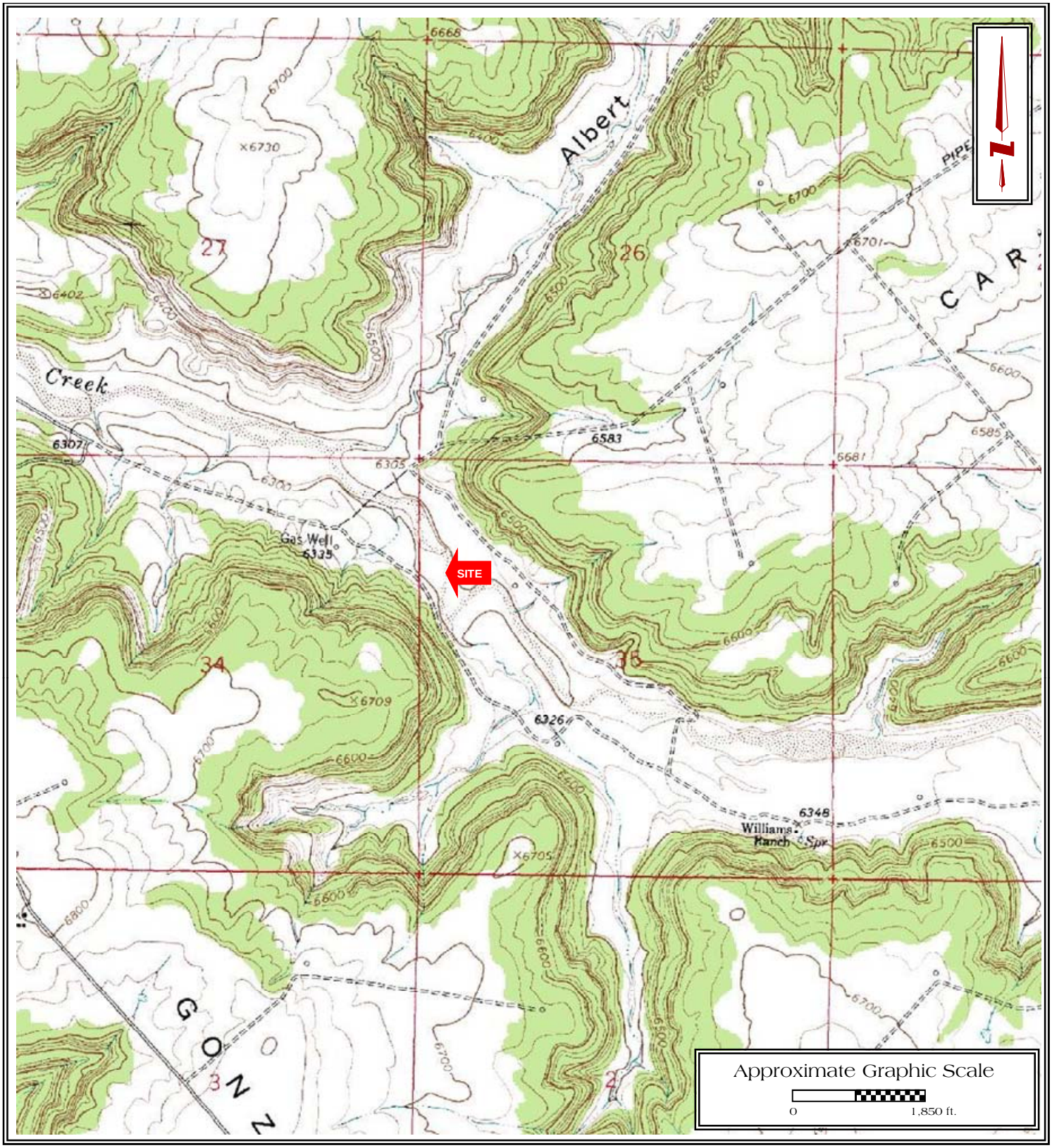
APPENDIX A

Figures



K-51 Pipeline Release

N36° 26' 47.77"; W107° 26' 46.04"

Off County Road 537

Rio Arriba, New Mexico

SWG Project No. 0410003

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FIGURE 1

Topographic Map

Gonzales Mesa, NM Quadrangle

Contour Interval - 10 Feet

K-51 Pipeline Release

N36° 26' 47.77"; W107° 26' 46.04"

Off County Road 537

Rio Arriba, New Mexico

SWG Project No. 0410003

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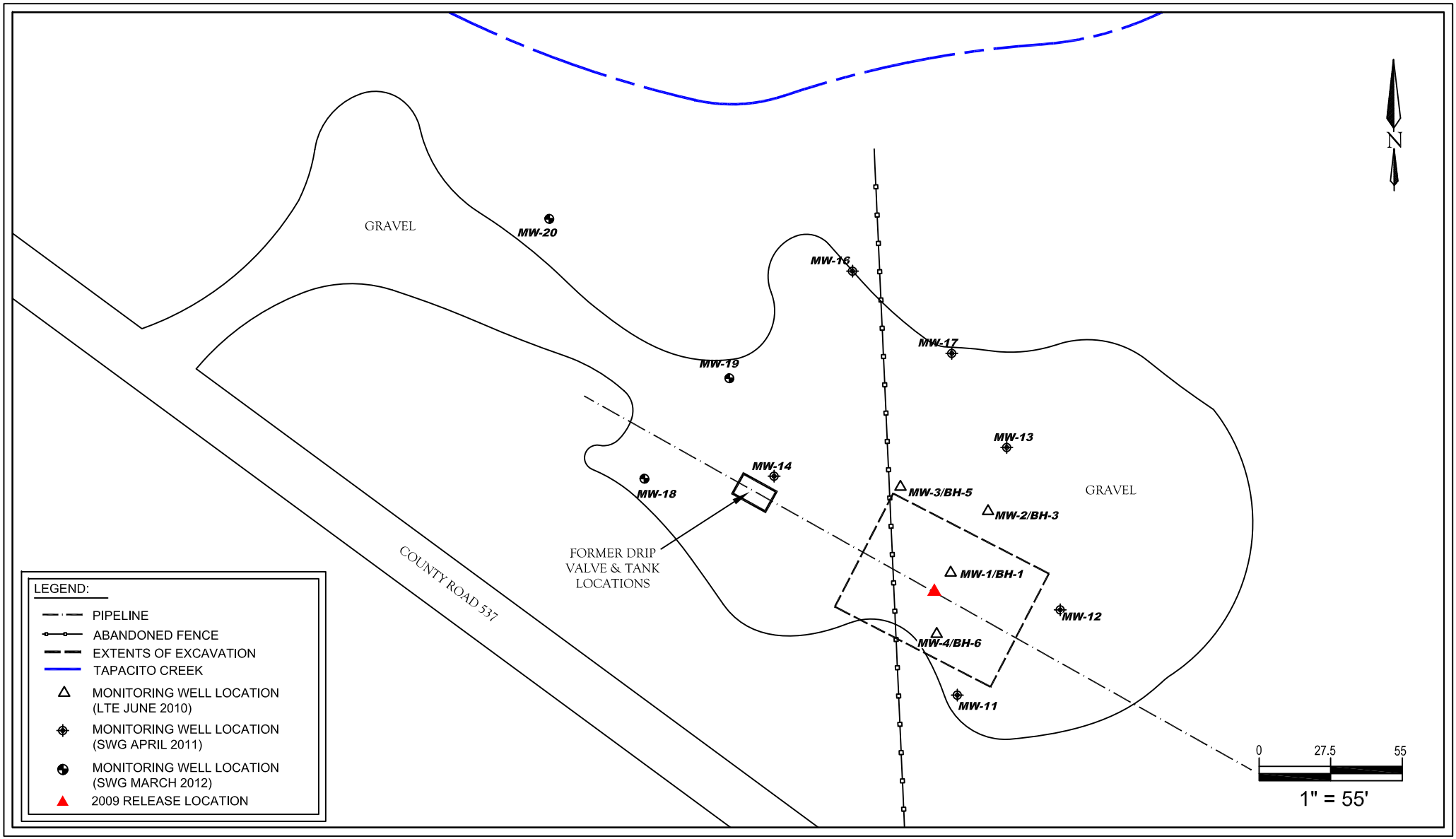
FIGURE 2

Site Vicinity Map

2012 Aerial Photograph



K-51 Pipeline Release
N36° 26' 47.77"; W107° 26' 46.04"
Off County Road 537
Rio Ariba County, New Mexico

SWG Project No. 0410003

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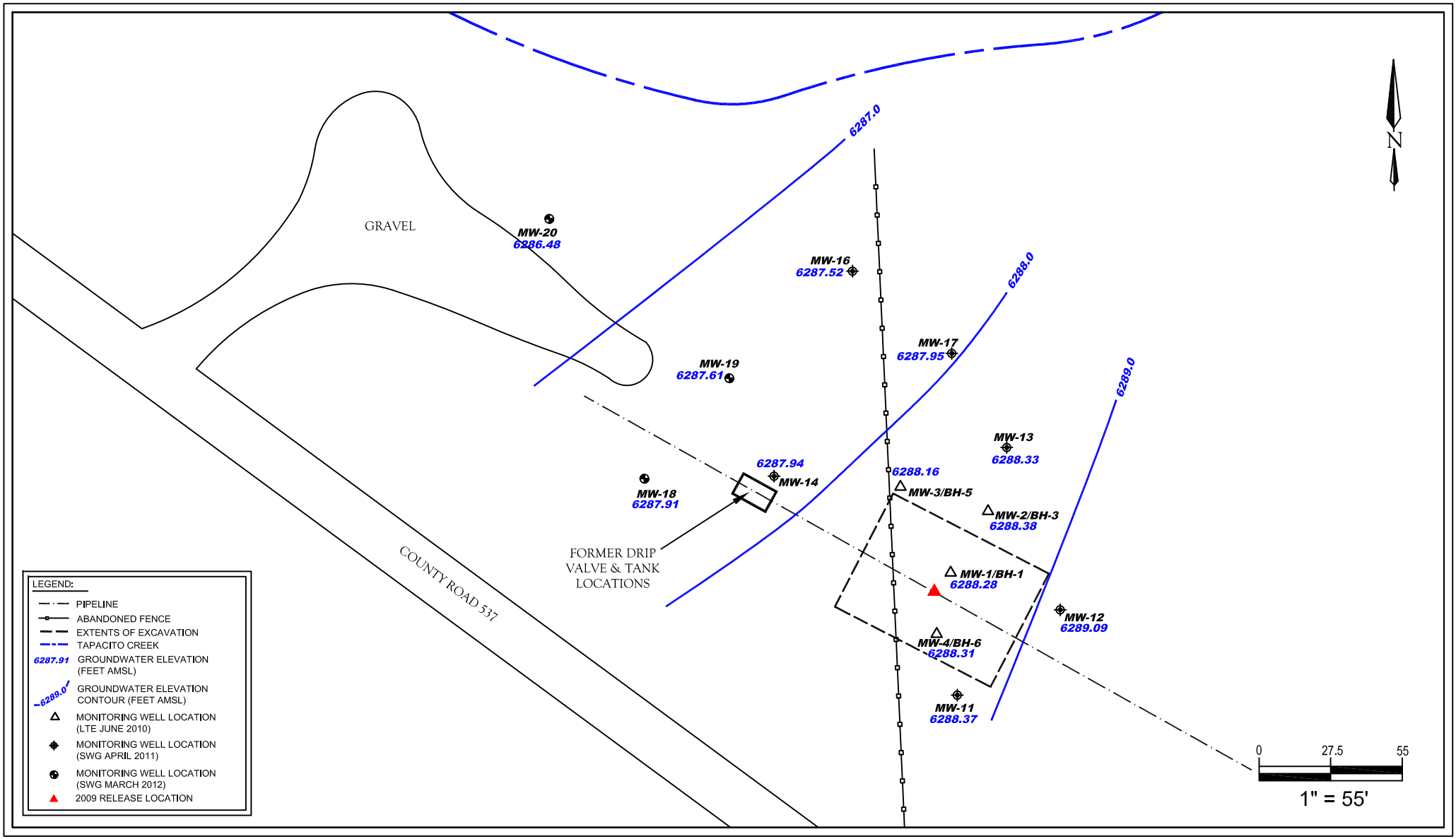
FIGURE 3

SITE MAP



K-51 Pipeline Release
N36° 26' 47.77"; W107° 26' 46.04"
Off County Road 537
Rio Ariba County, New Mexico

SWG Project No. 0410003

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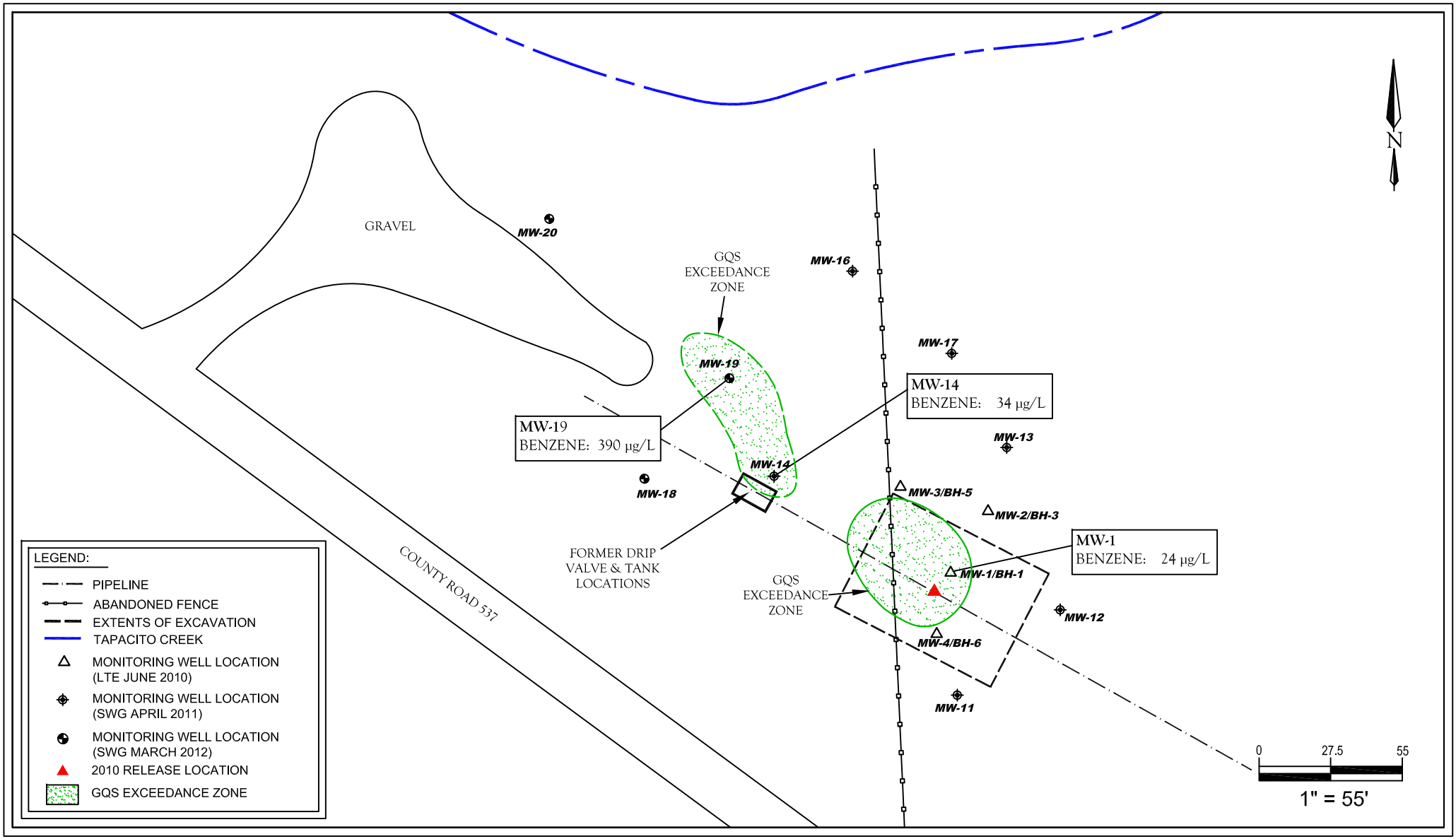
FIGURE 4

GROUNDWATER GRADIENT MAP

JUNE 2013



K-51 Pipeline Release
N36° 26' 47.77"; W107° 26' 46.04"
Off County Road 537
Rio Ariba County, New Mexico

SWG Project No. 0410003

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FIGURE 5

GROUNDWATER QUALITY
STANDARD EXCEEDANCE ZONE
JUNE 2013

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APPENDIX B

Tables

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TABLE 1
K-51 PIPELINE RELEASE
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10	750	750	620	NE	NE
SMA Sample - Open Excavation							
Excavation	4.21.10	**7,000**	**13,000**	540	**5,200**	NA	NA
Monitoring Wells							
MW-1	6.21.10	**8,400**	**1,300**	560	**4,200**	NA	NA
	9.24.10	**2,300**	28	200	520	8.4	<1.0
	4.21.11	**430**	<20	120	60	2.1	<1.0
	6.21.11	**820**	370	33	140	5.1	130
	9.22.11	**690**	**1,200**	120	**1,200**	8.9	30
	12.13.11	**260**	250	54	**650**	3.4	<1.0
	3.20.12	**280**	230	94	550	3.5	<1.0
	6.19.12	**300**	<5.0	81	96	1.7	<1.0
	9.20.12*	**45**	3.4	15	23	0.45	<1.0
	12.17.12	**34**	<1.0	11	16	0.19	<1.0
	3.25.13	**41**	<1.0	19	32	0.27	<1.0
	6.27.13	**24**	<1.0	<1.0	36	0.22	<1.0
MW-2	6.21.10	**200**	53	14	96	NA	NA
	9.24.10	2.3	<1.0	<1.0	<2.0	<0.050	<1.0
	4.21.11	3.3	<1.0	<1.0	<2.0	0.065	<1.0
	6.21.11	2.2	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

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TABLE 1
K-51 PIPELINE RELEASE
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10	750	750	620	NE	NE
MW-3	6.21.10	**640**	57	72	**1,000**	NA	NA
	9.24.10	**150**	<1.0	16	28	0.48	<1.0
	4.21.11	**52**	<1.0	17	10	0.25	<1.0
	6.21.11	**62**	14	13	160	0.67	<1.0
	9.22.11	3	<1.0	8.7	<2.0	0.066	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	1.3	<1.0	1.9	<2.0	<0.050	<1.0
	6.19.12	3.1	<1.0	1.4	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-4	6.21.10	**3,600**	**10,000**	600	**6,600**	NA	NA
	9.24.10	**870**	**870**	260	**1,600**	12	1
	4.21.11	**670**	<20	520	**790**	6.3	<1.0
	6.21.11	**17**	22	36	77	0.64	1.1
	9.22.11	**62**	140	220	**820**	3.8	1.2
	12.13.11	**84**	<20	430	490	2.6	<1.0
	3.20.12	**36**	<20	**1,100**	**1,400**	6.5	<1.0
	6.19.12	**37**	<5.0	250	350	2.2	<1.0
	9.19.12	9.4	1.4	74	97	0.84	<1.0
	12.17.12	<1.0	<1.0	6.2	9.7	0.12	<1.0
	3.25.13	3.2	<1.0	51	55	1.0	<1.0
	6.27.13	3.9	<1.0	61	60	1.3	<1.0
MW-11	4.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

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TABLE 1
K-51 PIPELINE RELEASE
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10	750	750	620	NE	NE
MW-12	4.21.11	1.9	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	4.6	<1.0	<1.0	<2.0	0.063	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	1.7	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-13	4.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12	NS	NS	NS	NS	NS	NS
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-14	4.21.11	**2,800**	<100	280	**720**	8.7	<1.0
	6.21.11	**470**	<10	37	210	1.9	<1.0
	9.22.11	**540**	<10	100	36	1.7	<1.0
	12.13.11	**220**	<10	110	<20	1.0	<1.0
	3.20.12	**660**	<5.0	240	15	2.9	<1.0
	6.19.12	**660**	<5.0	300	100	3.4	<1.0
	9.20.12*	7.3	<1.0	<1.0	<2.0	0.1	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	1.6	<2.0	<0.050	<1.0
	6.27.13	**34**	4.4	30	130	0.56	1.4

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TABLE 1
K-51 PIPELINE RELEASE
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10	750	750	620	NE	NE
MW-16	4.21.11	4.4	<2.0	<2.0	<4.0	<0.10	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	0.065	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	0.12	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	3.1	<1.0	2.1	14	0.19	<1.0
	3.25.13	<1.0	<1.0	<1.0	<1.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-17	4.21.11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	6.21.11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-18	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	3.25.13	NS	NS	NS	NS	NS	NS
	6.27.13	NS	NS	NS	NS	NS	NS
MW-19	3.20.12	250	56	310	3,900	16	5.3
	6.19.12	NAPL	NAPL	NAPL	NAPL	NA	NA
	9.19.12	NAPL	NAPL	NAPL	NAPL	NA	NA
	12.17.12	180	<5.0	5.4	23	2.2	2.6
	3.25.13	160	<5.0	17	<10	1.5	1.4
	6.27.13	390	<1.0	79	66	2.7	5.9

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TABLE 1
K-51 PIPELINE RELEASE
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10	750	750	620	NE	NE
MW-20	3.20.12	**35**	<1.0	1.1	3.3	0.14	<1.0
	6.19.12	3.4	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12*	4.7	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level

* = Monitoring well purged/sampled utilizing disposable bailer during this event

NA = Not Analyzed

NS = Not Sampled

NE = Not Established

NAPL = Non-aqueous phase liquid

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TABLE 2
K-51 Pipeline Release
GROUNDWATER ELEVATIONS

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	TOC Elevations (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-1	4.21.11	ND	11.80	ND	6300.89	6289.09
	6.21.11	ND	12.16	ND		6288.73
	9.22.11	ND	12.92	ND		6287.97
	12.13.11	ND	12.45	ND		6288.44
	3.20.12	ND	12.13	ND		6288.76
	6.19.12	ND	12.76	ND		6288.13
	9.19.12	ND	13.10	ND		6287.79
	12.17.12	ND	12.33	ND		6288.56
	3.15.13	ND	11.88	ND		6289.01
	6.27.13	ND	12.61	ND		6288.28
MW-2	4.21.11	ND	10.55	ND	6299.82	6289.27
	6.21.11	ND	11.87	ND		6287.95
	9.22.11	ND	11.86	ND		6287.96
	12.13.11	ND	11.38	ND		6288.44
	3.20.12	ND	10.95	ND		6288.87
	6.19.12	ND	11.64	ND		6288.18
	9.19.12	ND	12.10	ND		6287.72
	12.17.12	ND	11.23	ND		6288.59
	3.15.13	ND	10.65	ND		6289.17
	6.27.13	ND	11.44	ND		6288.38
MW-3	4.21.11	ND	11.30	ND	6300.22	6288.92
	6.21.11	ND	11.64	ND		6288.58
	9.22.11	ND	12.45	ND		6287.77
	12.13.11	ND	11.89	ND		6288.33
	3.20.12	ND	11.60	ND		6288.62
	6.19.12	ND	12.22	ND		6288.00
	9.19.12	ND	12.53	ND		6287.69
	12.17.12	ND	11.75	ND		6288.47
	3.15.13	ND	11.37	ND		6288.85
	6.27.13	ND	12.06	ND		6288.16
MW-4	4.21.11	ND	11.90	ND	6300.91	6289.01
	6.21.11	ND	12.18	ND		6288.73
	9.22.11	ND	12.90	ND		6288.01
	12.13.11	ND	12.41	ND		6288.50
	3.20.12	ND	12.45	ND		6288.46
	6.19.12	ND	12.72	ND		6288.19
	9.19.12	ND	13.09	ND		6287.82
	12.17.12	ND	12.33	ND		6288.58
	3.15.13	ND	11.85	ND		6289.06
	6.27.13	ND	12.60	ND		6288.31
MW-11	4.21.11	ND	11.98	ND	6301.19	6289.21
	6.21.11	ND	12.40	ND		6288.79
	9.22.11	ND	13.07	ND		6288.12
	12.13.11	ND	12.55	ND		6288.64
	3.20.12	ND	12.26	ND		6288.93
	6.19.12	ND	12.93	ND		6288.26
	9.19.12	ND	13.27	ND		6287.92
	12.17.12	ND	12.51	ND		6288.68
	3.15.13	ND	12.05	ND		6289.14
	6.27.13	ND	12.82	ND		6288.37
MW-12	4.21.11	ND	8.96	ND	6299.08	6290.12
	6.21.11	ND	9.42	ND		6289.66
	9.22.11	ND	10.82	ND		6288.26
	12.13.11	ND	10.13	ND		6288.95
	3.20.12	ND	9.41	ND		6289.67
	6.19.12	ND	10.09	ND		6288.99
	9.19.12	ND	11.03	ND		6288.05
	12.17.12	ND	10.21	ND		6288.87
	3.15.13	ND	9.26	ND		6289.82
	6.27.13	ND	9.99	ND		6289.09

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TABLE 2
K-51 Pipeline Release
GROUNDWATER ELEVATIONS

MW-13	4.21.11	ND	9.07	ND	6298.27	6289.20
	6.21.11	ND	9.51	ND		6288.76
	9.22.11	ND	10.15	ND		6288.12
	12.13.11	ND	9.59	ND		6288.68
	3.20.12	ND	9.35	ND		6288.92
	6.19.12	ND	10.09	ND		6288.18
	9.19.12	ND	10.29	ND		6287.98
	12.17.12	ND	9.47	ND		6288.80
	3.15.13	ND	9.11	ND		6289.16
	6.27.13	ND	9.94	ND		6288.33
MW-14	4.21.11	ND	12.54	ND	6301.20	6288.66
	6.21.11	ND	12.88	ND		6288.32
	9.22.11	ND	13.53	ND		6287.67
	12.13.11	ND	13.11	ND		6288.09
	3.20.12	ND	12.80	ND		6288.40
	6.19.12	ND	13.42	ND		6287.78
	9.19.12	ND	13.70	ND		6287.50
	12.17.12	ND	12.93	ND		6288.27
	3.15.13	ND	12.55	ND		6288.65
	6.27.13	ND	13.26	ND		6287.94
MW-16	4.21.11	ND	12.06	ND	6299.89	6287.83
	6.21.11	ND	12.26	ND		6287.63
	9.22.11	ND	12.57	ND		6287.32
	12.13.11	ND	12.28	ND		6287.61
	3.20.12	ND	12.24	ND		6287.65
	6.19.12	ND	12.71	ND		6287.18
	9.19.12	ND	12.80	ND		6287.09
	12.17.12	ND	11.90	ND		6287.99
	3.15.13	ND	11.80	ND		6288.09
	6.27.13	ND	12.37	ND		6287.52
MW-17	4.21.11	ND	9.90	ND	6298.57	6288.67
	6.21.11	ND	9.56	ND		6289.01
	9.22.11	ND	10.83	ND		6287.74
	12.13.11	ND	10.31	ND		6288.26
	3.20.12	ND	10.12	ND		6288.45
	6.19.12	ND	10.81	ND		6287.76
	9.19.12	ND	10.95	ND		6287.62
	12.17.12	ND	10.13	ND		6288.44
	3.15.13	ND	9.85	ND		6288.72
	6.27.13	ND	10.62	ND		6287.95
MW-18	3.20.12	ND	16.60	ND	6304.77	6288.17
	6.19.12	ND	17.42	ND		6287.35
	9.19.12	ND	17.45	ND		6287.32
	12.17.12	ND	16.73	ND		6288.04
	3.15.13	ND	NG	ND		NG
	6.27.13	ND	16.86	ND		6287.91
MW-19	3.20.12	ND	15.69	ND	6303.80	6288.11
	6.19.12	16.25	16.32	0.07		6287.52
	9.19.12	16.47	16.49	0.02		6287.32
	12.17.12	ND	15.91	ND		6287.89
	3.15.13	ND	15.38	ND		6288.42
	6.27.13	ND	16.19	ND		6287.61
MW-20	3.20.12	ND	25.82	ND	6312.59	6286.77
	6.19.12	ND	26.30	ND		6286.29
	9.19.12	ND	26.31	ND		6286.28
	12.17.12	ND	25.42	ND		6287.17
	3.15.13	ND	25.38	ND		6287.21
	6.27.13	ND	26.11	ND		6286.48

BTOC - below top of casing
AMSL - aboce mean sea level
TOC - top of casing
* - corrected for presence of phase-sepated hydrocarbon using a site-specific density correction factor of 0.63
ND - Not Detected
NG - Not Gauged or Errant Gauge

Southwest GEOSCIENCE

APPENDIX C

Laboratory Data Reports & Chain-of-Custody Documentation

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

July 05, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: K-51 OrderNo.: 1307020

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 13 sample(s) on 6/29/2013 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. In order to properly interpret your results it is imperative that you review this report in its entirety. 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. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. 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.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1307020**
Date Reported: **7/5/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-20
Project: K-51
Collection Date: 6/27/2013 8:45:00 AM
Lab ID: 1307020-001 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 2:40:12 PM	8197
Surr: DNOP	105	75.4-146		%REC	1	7/2/2013 2:40:12 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 1:53:10 AM	R11690
Surr: BFB	96.7	51.5-151		%REC	1	7/2/2013 1:53:10 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 1:53:10 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 1:53:10 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 1:53:10 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 1:53:10 AM	R11690
Surr: 4-Bromofluorobenzene	111	69.4-129		%REC	1	7/2/2013 1:53:10 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-16
Project: K-51
Collection Date: 6/27/2013 9:20:00 AM
Lab ID: 1307020-002 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 3:10:49 PM	8197
Surr: DNOP	105	75.4-146		%REC	1	7/2/2013 3:10:49 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 2:23:14 AM	R11690
Surr: BFB	92.9	51.5-151		%REC	1	7/2/2013 2:23:14 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 2:23:14 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 2:23:14 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 2:23:14 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 2:23:14 AM	R11690
Surr: 4-Bromofluorobenzene	108	69.4-129		%REC	1	7/2/2013 2:23:14 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-17
Project: K-51
Collection Date: 6/27/2013 9:50:00 AM
Lab ID: 1307020-003 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 3:40:54 PM	8197
Surr: DNOP	113	75.4-146		%REC	1	7/2/2013 3:40:54 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 2:53:20 AM	R11690
Surr: BFB	92.3	51.5-151		%REC	1	7/2/2013 2:53:20 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 2:53:20 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 2:53:20 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 2:53:20 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 2:53:20 AM	R11690
Surr: 4-Bromofluorobenzene	107	69.4-129		%REC	1	7/2/2013 2:53:20 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-13
Project: K-51
Collection Date: 6/27/2013 10:20:00 AM
Lab ID: 1307020-004 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 4:11:01 PM	8197
Surr: DNOP	116	75.4-146		%REC	1	7/2/2013 4:11:01 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 3:23:30 AM	R11690
Surr: BFB	92.3	51.5-151		%REC	1	7/2/2013 3:23:30 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 3:23:30 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 3:23:30 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 3:23:30 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 3:23:30 AM	R11690
Surr: 4-Bromofluorobenzene	107	69.4-129		%REC	1	7/2/2013 3:23:30 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-12
Project: K-51
Collection Date: 6/27/2013 10:50:00 AM
Lab ID: 1307020-005 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 5:11:17 PM	8197
Surr: DNOP	114	75.4-146		%REC	1	7/2/2013 5:11:17 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 3:53:54 AM	R11690
Surr: BFB	92.7	51.5-151		%REC	1	7/2/2013 3:53:54 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 3:53:54 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 3:53:54 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 3:53:54 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 3:53:54 AM	R11690
Surr: 4-Bromofluorobenzene	107	69.4-129		%REC	1	7/2/2013 3:53:54 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-11
Project: K-51
Collection Date: 6/27/2013 11:20:00 AM
Lab ID: 1307020-006
Matrix: AQUEOUS
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 5:41:25 PM	8197
Surr: DNOP	113	75.4-146		%REC	1	7/2/2013 5:41:25 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 4:24:17 AM	R11690
Surr: BFB	92.7	51.5-151		%REC	1	7/2/2013 4:24:17 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 4:24:17 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 4:24:17 AM	R11690
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 4:24:17 AM	R11690
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 4:24:17 AM	R11690
Surr: 4-Bromofluorobenzene	107	69.4-129		%REC	1	7/2/2013 4:24:17 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-4
Project: K-51
Collection Date: 6/27/2013 11:55:00 AM
Lab ID: 1307020-007
Matrix: AQUEOUS
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 6:11:33 PM	8197
Surr: DNOP	103	75.4-146		%REC	1	7/2/2013 6:11:33 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1.3	0.050		mg/L	1	7/2/2013 4:54:24 AM	R11690
Surr: BFB	295	51.5-151	S	%REC	1	7/2/2013 4:54:24 AM	R11690
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	3.9	1.0		µg/L	1	7/2/2013 4:54:24 AM	R11690
Toluene	ND	1.0		µg/L	1	7/2/2013 4:54:24 AM	R11690
Ethylbenzene	61	1.0		µg/L	1	7/2/2013 4:54:24 AM	R11690
Xylenes, Total	60	2.0		µg/L	1	7/2/2013 4:54:24 AM	R11690
Surr: 4-Bromofluorobenzene	206	69.4-129	S	%REC	1	7/2/2013 4:54:24 AM	R11690

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-1
Project: K-51
Collection Date: 6/27/2013 12:25:00 PM
Lab ID: 1307020-008 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 6:41:42 PM	8197
Surr: DNOP	102	75.4-146		%REC	1	7/2/2013 6:41:42 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.22	0.050		mg/L	1	7/2/2013 11:26:32 PM	R11718
Surr: BFB	94.7	51.5-151		%REC	1	7/2/2013 11:26:32 PM	R11718
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	24	1.0		µg/L	1	7/2/2013 11:26:32 PM	R11718
Toluene	ND	1.0		µg/L	1	7/2/2013 11:26:32 PM	R11718
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 11:26:32 PM	R11718
Xylenes, Total	36	2.0		µg/L	1	7/2/2013 11:26:32 PM	R11718
Surr: 4-Bromofluorobenzene	101	69.4-129		%REC	1	7/2/2013 11:26:32 PM	R11718

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-2
Project: K-51
Collection Date: 6/27/2013 1:10:00 PM
Lab ID: 1307020-009
Matrix: AQUEOUS
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 7:11:49 PM	8197
Surr: DNOP	110	75.4-146		%REC	1	7/2/2013 7:11:49 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/2/2013 11:55:07 PM	R11718
Surr: BFB	93.7	51.5-151		%REC	1	7/2/2013 11:55:07 PM	R11718
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/2/2013 11:55:07 PM	R11718
Toluene	ND	1.0		µg/L	1	7/2/2013 11:55:07 PM	R11718
Ethylbenzene	ND	1.0		µg/L	1	7/2/2013 11:55:07 PM	R11718
Xylenes, Total	ND	2.0		µg/L	1	7/2/2013 11:55:07 PM	R11718
Surr: 4-Bromofluorobenzene	99.6	69.4-129		%REC	1	7/2/2013 11:55:07 PM	R11718

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-3
Project: K-51
Collection Date: 6/27/2013 1:40:00 PM
Lab ID: 1307020-010 **Matrix:** AQUEOUS **Received Date:** 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/2/2013 7:41:57 PM	8197
Surr: DNOP	107	75.4-146		%REC	1	7/2/2013 7:41:57 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/3/2013 12:23:43 AM	R11718
Surr: BFB	94.6	51.5-151		%REC	1	7/3/2013 12:23:43 AM	R11718
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/3/2013 12:23:43 AM	R11718
Toluene	ND	1.0		µg/L	1	7/3/2013 12:23:43 AM	R11718
Ethylbenzene	ND	1.0		µg/L	1	7/3/2013 12:23:43 AM	R11718
Xylenes, Total	ND	2.0		µg/L	1	7/3/2013 12:23:43 AM	R11718
Surr: 4-Bromofluorobenzene	98.7	69.4-129		%REC	1	7/3/2013 12:23:43 AM	R11718

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-14
Project: K-51
Collection Date: 6/27/2013 2:15:00 PM
Lab ID: 1307020-011
Matrix: AQUEOUS
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	1.4	1.0		mg/L	1	7/2/2013 8:12:06 PM	8197
Surr: DNOP	88.5	75.4-146		%REC	1	7/2/2013 8:12:06 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.56	0.050		mg/L	1	7/3/2013 12:52:18 AM	R11718
Surr: BFB	153	51.5-151	S	%REC	1	7/3/2013 12:52:18 AM	R11718
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	34	1.0		µg/L	1	7/3/2013 12:52:18 AM	R11718
Toluene	4.4	1.0		µg/L	1	7/3/2013 12:52:18 AM	R11718
Ethylbenzene	30	1.0		µg/L	1	7/3/2013 12:52:18 AM	R11718
Xylenes, Total	130	2.0		µg/L	1	7/3/2013 12:52:18 AM	R11718
Surr: 4-Bromofluorobenzene	119	69.4-129		%REC	1	7/3/2013 12:52:18 AM	R11718

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: MW-19
Project: K-51
Collection Date: 6/27/2013 3:25:00 PM
Lab ID: 1307020-012
Matrix: AQUEOUS
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	5.9	1.0		mg/L	1	7/2/2013 8:42:09 PM	8197
Surr: DNOP	106	75.4-146		%REC	1	7/2/2013 8:42:09 PM	8197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	2.7	0.050		mg/L	1	7/3/2013 1:20:49 AM	R11718
Surr: BFB	375	51.5-151	S	%REC	1	7/3/2013 1:20:49 AM	R11718
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	390	10		µg/L	10	7/3/2013 2:08:47 PM	R11733
Toluene	ND	1.0		µg/L	1	7/3/2013 1:20:49 AM	R11718
Ethylbenzene	79	1.0		µg/L	1	7/3/2013 1:20:49 AM	R11718
Xylenes, Total	66	2.0		µg/L	1	7/3/2013 1:20:49 AM	R11718
Surr: 4-Bromofluorobenzene	142	69.4-129	S	%REC	1	7/3/2013 1:20:49 AM	R11718

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience
Client Sample ID: Trip Blank
Project: K-51
Collection Date:
Lab ID: 1307020-013
Matrix: TRIP BLANK
Received Date: 6/29/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/3/2013 2:37:28 PM	R11733
Surr: BFB	95.4	51.5-151		%REC	1	7/3/2013 2:37:28 PM	R11733
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/3/2013 2:37:28 PM	R11733
Toluene	ND	1.0		µg/L	1	7/3/2013 2:37:28 PM	R11733
Ethylbenzene	ND	1.0		µg/L	1	7/3/2013 2:37:28 PM	R11733
Xylenes, Total	ND	2.0		µg/L	1	7/3/2013 2:37:28 PM	R11733
Surr: 4-Bromofluorobenzene	98.2	69.4-129		%REC	1	7/3/2013 2:37:28 PM	R11733

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307020**

05-Jul-13

Client: Southwest Geoscience

Project: K-51

Sample ID **MB-8197**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW**	Batch ID: **8197**	RunNo: **11699**
Prep Date: **7/2/2013**	Analysis Date: **7/2/2013**	SeqNo: **332278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	1.0		1.000		104	75.4	146			

Sample ID **LCS-8197**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW**	Batch ID: **8197**	RunNo: **11699**
Prep Date: **7/2/2013**	Analysis Date: **7/2/2013**	SeqNo: **332279** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.0	1.0	5.000	0	121	89.1	151			
Surr: DNOP	0.55		0.5000		110	75.4	146			

Sample ID **LCSD-8197**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSS02**	Batch ID: **8197**	RunNo: **11699**
Prep Date: **7/2/2013**	Analysis Date: **7/2/2013**	SeqNo: **332280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.1	1.0	5.000	0	123	89.1	151	1.54	20	
Surr: DNOP	0.55		0.5000		110	75.4	146	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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307020**

05-Jul-13

Client: Southwest Geoscience

Project: K-51

Sample ID	**B9**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R11690**	RunNo:	**11690**					
Prep Date:		Analysis Date:	**7/1/2013**	SeqNo:	**331761**	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	19		20.00		92.8	51.5	151			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R11690**	RunNo:	**11690**					
Prep Date:		Analysis Date:	**7/1/2013**	SeqNo:	**331762**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.1	73.2	124			
Surr: BFB	20		20.00		101	51.5	151			

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R11718**	RunNo:	**11718**					
Prep Date:		Analysis Date:	**7/2/2013**	SeqNo:	**332806**	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	19		20.00		93.9	51.5	151			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R11718**	RunNo:	**11718**					
Prep Date:		Analysis Date:	**7/2/2013**	SeqNo:	**332807**	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	101	73.2	124			
Surr: BFB	20		20.00		101	51.5	151			

Sample ID	**1307020-008AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**MW-1**	Batch ID:	**R11718**	RunNo:	**11718**					
Prep Date:		Analysis Date:	**7/2/2013**	SeqNo:	**332820**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.73	0.050	0.5000	0.2208	101	65.2	137			
Surr: BFB	21		20.00		104	51.5	151			

Sample ID	**1307020-008AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**MW-1**	Batch ID:	**R11718**	RunNo:	**11718**					
Prep Date:		Analysis Date:	**7/2/2013**	SeqNo:	**332821**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.66	0.050	0.5000	0.2208	86.9	65.2	137	10.4	20	

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307020**

05-Jul-13

Client: Southwest Geoscience

Project: K-51

Sample ID	**1307020-008AMSD**	SampType: **MSD**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**MW-1**	Batch ID: **R11718**		RunNo: **11718**					
Prep Date:		Analysis Date: **7/2/2013**		SeqNo: **332821**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	20		20.00		102	51.5	151	0	0	

Sample ID	**5ML RB**	SampType: **MBLK**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID: **R11733**		RunNo: **11733**					
Prep Date:		Analysis Date: **7/3/2013**		SeqNo: **333590**		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	19		20.00		95.0	51.5	151			

Sample ID	**2.5UG GRO LCS**	SampType: **LCS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID: **R11733**		RunNo: **11733**					
Prep Date:		Analysis Date: **7/3/2013**		SeqNo: **333591**		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	89.2	73.2	124			
Surr: BFB	20		20.00		101	51.5	151			

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307020**

05-Jul-13

Client: Southwest Geoscience

Project: K-51

Sample ID **B9**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R11690**	RunNo: **11690**
Prep Date:	Analysis Date: **7/1/2013**	SeqNo: **331778** 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	22		20.00		110	69.4	129			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R11690**	RunNo: **11690**
Prep Date:	Analysis Date: **7/1/2013**	SeqNo: **331779** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	104	80	120			
Xylenes, Total	63	2.0	60.00	0	105	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		112	69.4	129			

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R11718**	RunNo: **11718**
Prep Date:	Analysis Date: **7/2/2013**	SeqNo: **332833** 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	19		20.00		97.5	69.4	129			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R11718**	RunNo: **11718**
Prep Date:	Analysis Date: **7/2/2013**	SeqNo: **332834** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	80	120			
Toluene	20	1.0	20.00	0	99.1	80	120			
Ethylbenzene	20	1.0	20.00	0	99.5	80	120			
Xylenes, Total	60	2.0	60.00	0	99.6	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		102	69.4	129			

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307020**

05-Jul-13

Client: Southwest Geoscience

Project: K-51

Sample ID	**1307020-009AMS**	SampType:	**MS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**MW-2**	Batch ID:	**R11718**		RunNo:	**11718**				
Prep Date:		Analysis Date:	**7/2/2013**		SeqNo:	**332848**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	80	120			
Toluene	20	1.0	20.00	0.1992	98.7	80	120			
Ethylbenzene	20	1.0	20.00	0	97.9	80	120			
Xylenes, Total	59	2.0	60.00	0	98.3	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		105	69.4	129			

Sample ID	**1307020-009AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**MW-2**	Batch ID:	**R11718**		RunNo:	**11718**				
Prep Date:		Analysis Date:	**7/2/2013**		SeqNo:	**332849**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.7	80	120	0.851	20	
Toluene	20	1.0	20.00	0.1992	97.8	80	120	0.910	20	
Ethylbenzene	19	1.0	20.00	0	97.2	80	120	0.692	20	
Xylenes, Total	59	2.0	60.00	0	98.1	80	120	0.198	20	
Surr: 4-Bromofluorobenzene	21		20.00		105	69.4	129	0	0	

Sample ID	**5ML RB**	SampType:	**MBLK**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**PBW**	Batch ID:	**R11733**		RunNo:	**11733**				
Prep Date:		Analysis Date:	**7/3/2013**		SeqNo:	**333612**	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	20		20.00		98.7	69.4	129			

Sample ID	**100NG BTEX LCS**	SampType:	**LCS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**LCSW**	Batch ID:	**R11733**		RunNo:	**11733**				
Prep Date:		Analysis Date:	**7/3/2013**		SeqNo:	**333613**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.8	80	120			
Toluene	20	1.0	20.00	0	97.8	80	120			
Ethylbenzene	20	1.0	20.00	0	97.8	80	120			
Xylenes, Total	59	2.0	60.00	0	98.8	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	69.4	129			

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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Southwest Geoscience A Work Order Number: 1307020 RcptNo: 1

Received by/date: AF 06/29/13

Logged By: **Michelle Garcia** 6/29/2013 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 7/1/2013 10:52:22 AM Michelle Garcia

Reviewed By: IG 07/01/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location: Aztec
Project Manager: K. Summers

Laboratory: Hall
Address:
Contact: Andy Freeman
Phone:
PO/SO #: 04109003

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.8°C
1 2 3 4 5
Page 1 of 2

Sampler's Name: Mahlia Abaya
Sampler's Signature:

Proj. No.: 04109003
Project Name: K-51

ANALYSIS REQUESTED: TPH GRO/DRO 8015; BTEX 8021

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	6/27/13	0845		X	MW-20			5				1307020-001
		0920			MW-16			5				-002
		0950			MW-17			5				-003
		1020			MW-13			5				-004
		1050			MW-12			5				-005
		1120			MW-11			5				-006
		1155			MW-4			5				-007
		1225			MW-1			5				-008
		1310			MW-2			5				-009
W	6/27/13	1340		X	MW-3			5				-010

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/28/13	0800	Christine Walters	6/28/13	851
Relinquished by (Signature) Christine Walters	6/28/13	1700		6/29/13	10:00
Relinquished by (Signature)			Received by: (Signature)		
Relinquished by (Signature)			Received by: (Signature)		

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location: Aztec
Project Manager: K. Summers

Laboratory: Hall
Address:
Contact: Andy Freeman
Phone:
PO/SO #: 04106003

Sampler's Name: Mahlia Abaya
Sampler's Signature:

Proj. No.: 04106003
Project Name: K-51

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.8
1 | 2 | 3 | 4 | 5
Page 2 of 2

ANALYSIS REQUESTED: TPH GRO/DRO 8015; BTEX 8021

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
W	6/27/13	1415		X	MW-14			5				1307020-011
W	6/27/13	1525		X	MW-19			5				-012
					Trip Blank							-013

NFE
6/27/13

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/28/13	0800 CST	Christen Waeta	6/28/13	0851
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Christen Waeta	6/28/13	1700		6/29/13	10:10
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other