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May 6, 2014

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Mr. Glenn von Gonten
New Mexico Energy, Minerals & Natural Resources
Department - Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Annual Groundwater Monitoring Report (October and December 2013 Events)
K-51 Pipeline Release Site
Off County Road 537
NE ¼ Section 34 & NW ¼, Sec 35, T26N, R6W
Rio Arriba County, New Mexico**

Dear Mr. Von Gonten:

Enterprise Field Services, LLC (Enterprise) is submitting two (2) copies and (1) electronic CD of the enclosed report entitled: *Annual Groundwater Monitoring Report (October and December 2013 Events)* for the K-51 release site. This report documents the results of the October and December 2013 groundwater monitoring events conducted at the release site. Remedial actions are being conducted at the site in response to a natural gas condensate release occurring on April 13, 2010.

During this monitoring event, dissolved-phase benzene concentrations exceeding applicable Water Quality Control Commission (WQCC) Groundwater Quality Standards were present at two monitor well locations (MW-1 and MW-19). No measurable accumulation of phase-separated hydrocarbon (PSH) was present at any monitoring location.

Groundwater constituent concentrations at this site are degrading naturally, with the exception of dissolved phase benzene concentration in monitor well MW-19. Enterprise has inspected the site to determine if an additional monitor well can be installed to delineate affected groundwater downgradient of monitor well MW-19. Site work is currently being performed to repair erosional areas over the pipeline at this location, and an access area to install an addition well will be constructed.

Enterprise will continue routine groundwater monitor events, and evaluate whether additional remedial actions are necessary to complete site closure. If you have any questions concerning the enclosed report, please do not hesitate to contact me at (713) 381-2286, or via email at: drsmith@eprod.com.

Sincerely,

David R. Smith, P.G.
Sr. Environmental Scientist

Gregory E. Miller, P.G.
Supervisor, Environmental

/dep
Enclosures (2)

cc: Brandon Powell - New Mexico Oil Conservation Division, Aztec, NM
Bill Liess - Bureau of Land Management, Farmington, NM

ec: Jim Griswold - New Mexico Oil Conservation Division, Santa Fe, NM
Sherrie Landon - Bureau of Land Management, Farmington, NM
Liz Scaggs - Apex TITAN Inc., (formerly Southwest Geoscience), Dallas, TX
Kyle Summers - Apex TITAN Inc. (formerly Southwest Geoscience), Farmington, NM

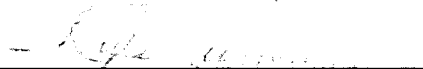
ANNUAL GROUNDWATER MONITORING REPORT
(October 2013 and December 2013 Events)

Property:

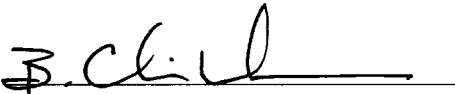
K-51 Pipeline Release (3R-206)
Sections 34 and 35, T26N, R6W
Rio Arriba County, New Mexico
SWG Project No. 0410G003
February 7, 2014

Prepared for:
Enterprise Field Services, LLC
P.O. Box 4324
Houston, Texas 77210-4324
Attention: Mr. David R. Smith, P.G.

PREPARED BY:



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ANNUAL GROUNDWATER MONITORING REPORT
(October 2013 and December 2013 Events)

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 (latitude 36.4465° North, longitude 107.4461° West), 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, tank, or pit may have been a historic source of petroleum hydrocarbon impact to groundwater (OCD reference 3R-206, El Paso Natural Gas, Final Pit Closure) 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

Quarterly groundwater sampling events were conducted during October and December of 2013 by Aaron Bryant and Joseph Doyle, SWG environmental professionals. Prior to October 2013, sampling events were reported to the OCD individually on a quarterly basis.

SWG's groundwater sampling program consisted of the following:

- Collection of one groundwater sample from each monitoring well utilizing low-flow sampling techniques.

Please note, due to the depth of groundwater at monitoring well MW-20, which exceeds the lift capability of the peristaltic pump, monitoring well MW-20 was purged and sampled utilizing a disposable bailer. In addition, due to insufficient groundwater recharge, monitoring well MW-18 was not sampled during these events. Monitoring well MW-18 is 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 October and December 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 HgCl₂ 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 events 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 per-event analysis, sample type, number of samples and EPA-approved methods are presented on the following table:

Analysis	Sample Type	No. of Samples	Method
<i>TPH GRO/DRO</i>	Groundwater	12	SW-846# 8015M
<i>BTEX</i>	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 the October and December 2013 monitoring events averages approximately 0.009 ft/ft across the Site.

Groundwater measurements collected during the most recent gauging events are presented with TOC elevations in Table 2, Appendix B. A groundwater gradient map depicting the most recent gauging data is included as Figures 4A and 4B (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 October 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. Groundwater Quality Exceedance Zone maps are provided as Figures 5A and 5B of Appendix A.

October 2013:

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-14, MW-16, MW-17, and MW-20 during the October 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 and MW-19 during the October 2013 sampling event exhibited benzene concentrations of 39 µg/L and 140 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-14, MW-16, MW-17, and MW-20 did not exhibit TPH GRO or TPH DRO concentrations above the laboratory RLs during the October 2013 sampling event.

The groundwater samples collected from monitoring wells MW-1, MW-4, and MW-19 exhibited TPH GRO concentrations ranging from 0.13 mg/L to 0.51 mg/L. The highest GRO concentration during the October 2013 sampling event was observed in the groundwater sample from monitoring well MW-19.

The groundwater sample collected from monitoring well MW-19 exhibited a TPH DRO concentration of 2.1 mg/L.

December 2013:

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-14, MW-16, MW-17, and MW-20 during the December 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 and MW-19 during the December 2013 sampling event exhibited benzene concentrations of 10 µg/L and 160 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-14, MW-16, MW-17, and MW-20 did not exhibit TPH GRO or TPH DRO concentrations above the laboratory RLS during the December 2013 sampling event.

The groundwater samples collected from monitoring wells MW-1, MW-4, and MW-19 exhibited TPH GRO concentrations ranging from 0.18 mg/L to 1.4 mg/L. The highest GRO concentration during the December 2013 sampling event was observed in the groundwater sample from monitoring well MW-19.

The groundwater sample collected from monitoring well MW-19 during the December 2013 sampling event exhibited a TPH DRO concentration of 4.2 mg/L.

6.0 FINDINGS

SWG conducted quarterly groundwater monitoring events at the K-51 Pipeline release site during October and December of 2013. 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 recharge (well silted in). An attempt will be made to redevelop monitoring well MW-18. Monitoring well MW-18 has not exhibited detectable concentrations of COCs in the past and is up/cross gradient to the COC plume. No recommendation will be made to replace this monitoring well if redevelopment attempts are unsuccessful.
- The groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, MW-11, MW-12, MW-13, MW-14, MW-16, MW-17, and MW-20 during the October and December 2013 sampling events 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 and MW-19 during the October and December 2013 sampling events exhibited benzene concentrations ranging from 10 µg/L to 160 µg/L, which exceed the WQCC *Groundwater Quality Standard* of 10 µg/L.
- COC concentrations at monitoring well MW-14 returned to pre-June 2013 “non-detect” levels, and COC concentrations at monitoring well MW-19 returned to the pre-June concentration levels.
- With the exception of monitoring well MW-19, sampling events at the site have exhibited steadily decreasing COC concentrations. In the source area

of the release, concentrations have decreased by two (2) orders of magnitude, and only monitoring wells MW-19 and MW-1 continue to exhibit COC concentrations above the WQCC *Groundwater Quality Standards*.

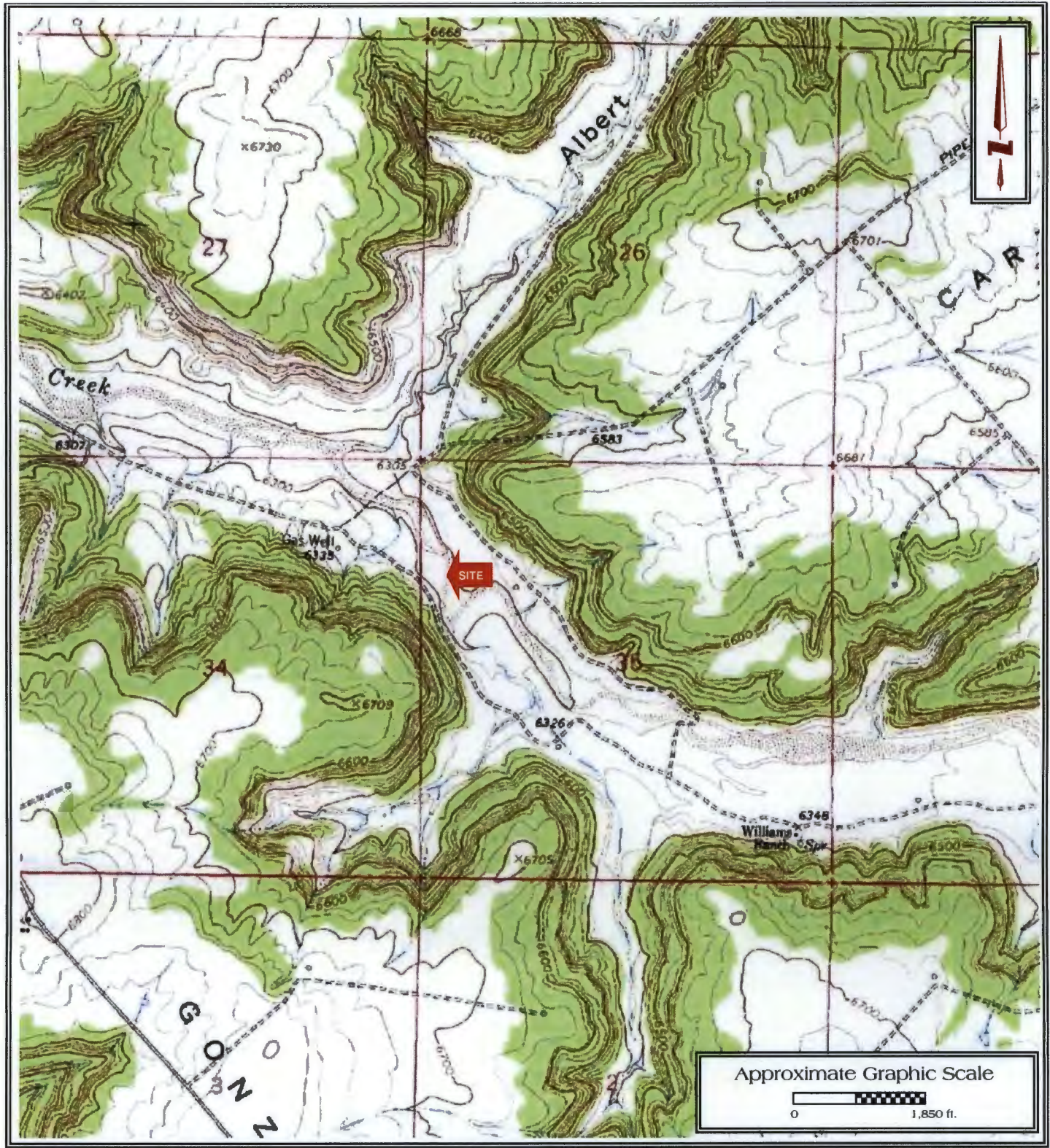
7.0 RECOMMENDATIONS

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;
- Install a monitoring well down-gradient of monitoring well MW-19.
- Additional in situ chemical oxidation was previously recommended in the *Supplemental Site Investigation & Corrective Action Work Plan* (SWG-April 23, 2012). However, due to the continual decrease in COC concentrations at the Site, SWG recommends evaluating groundwater conditions after the installation of the new down-gradient monitoring well prior to performing additional remediation activities.

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



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

Southwest
GEOSCIENCE

FIGURE 2
Site Vicinity Map
2012 Aerial Photograph

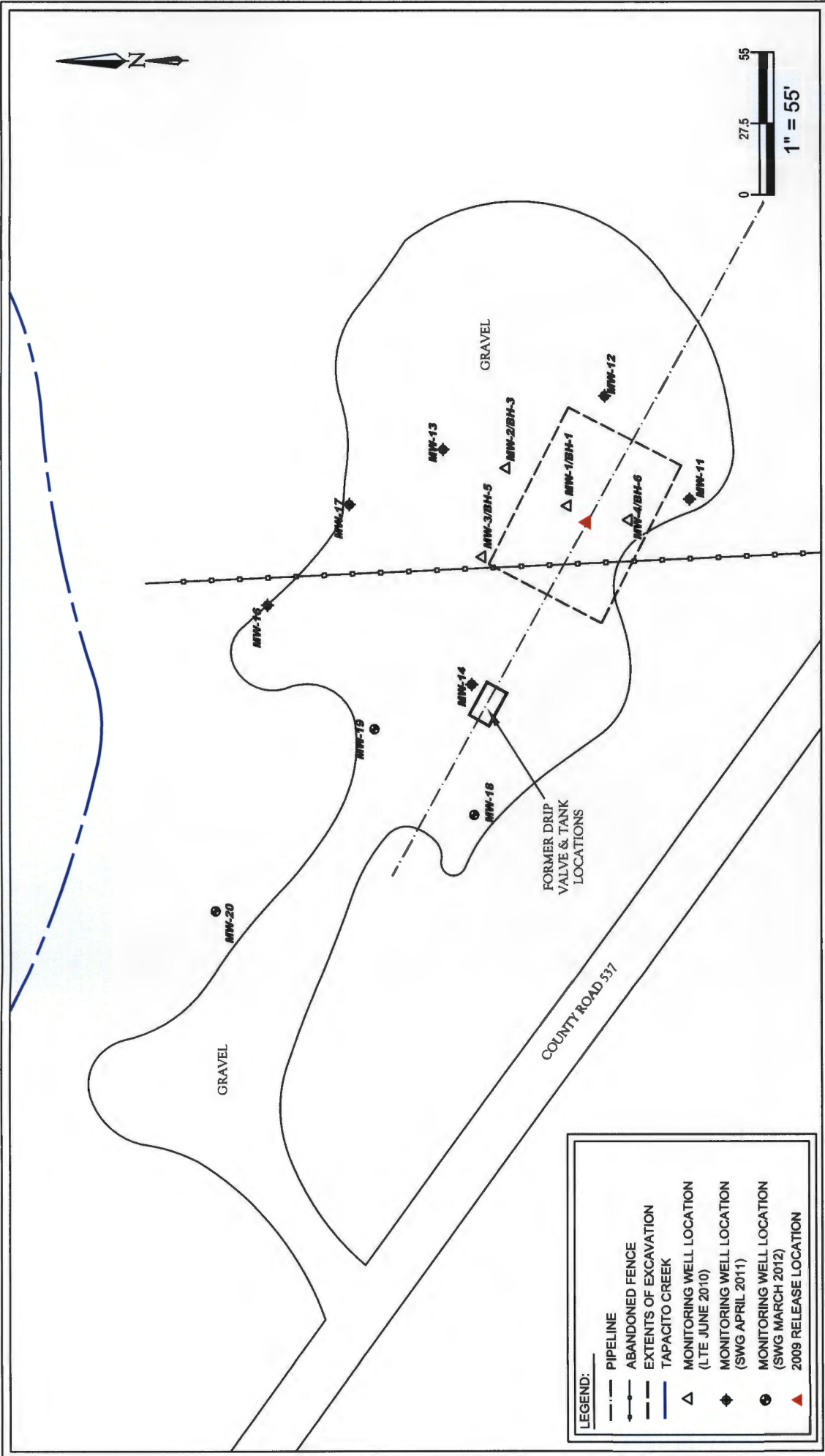


FIGURE 3
SITE MAP



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

SWG Project No. 0410003

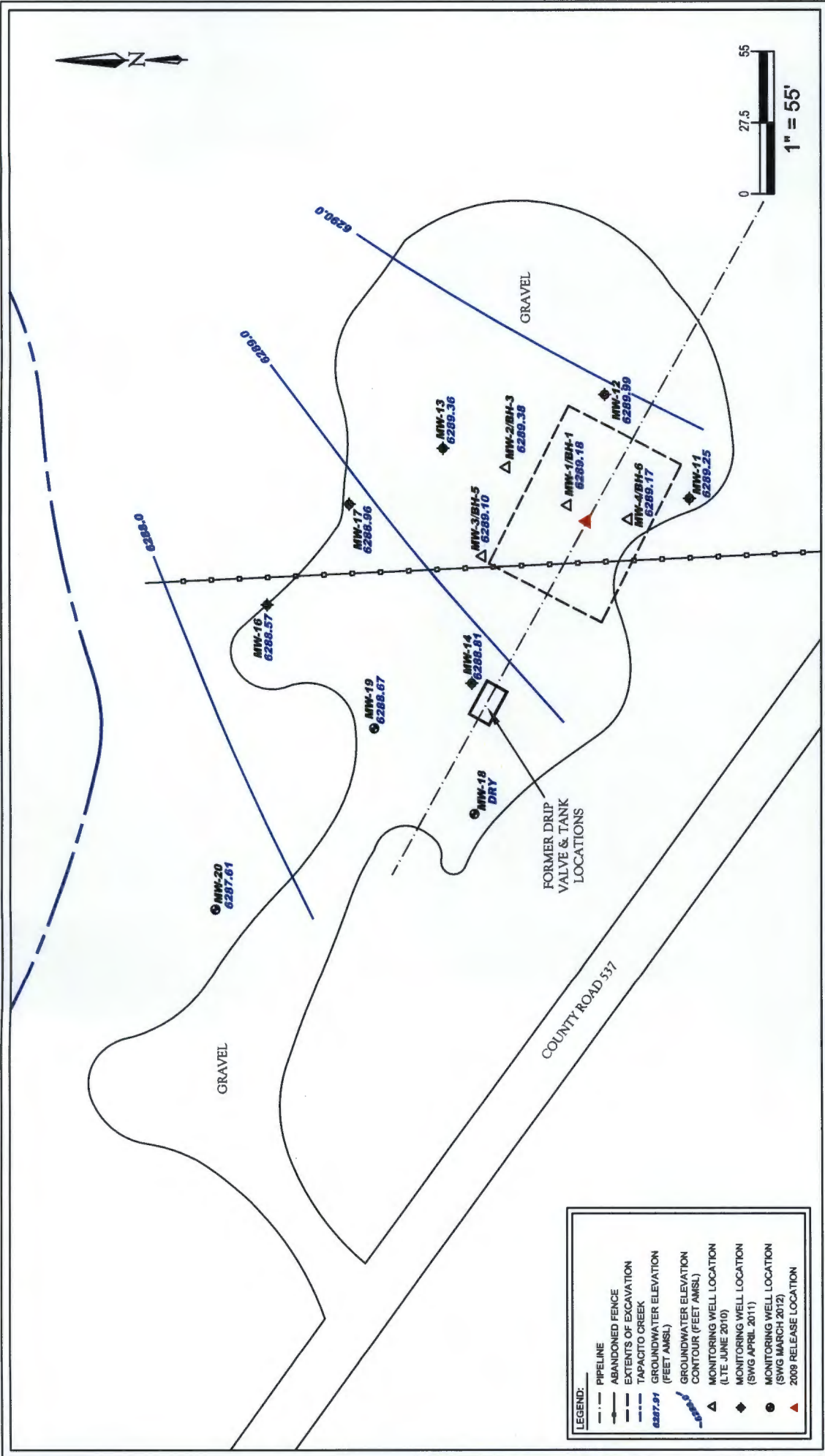
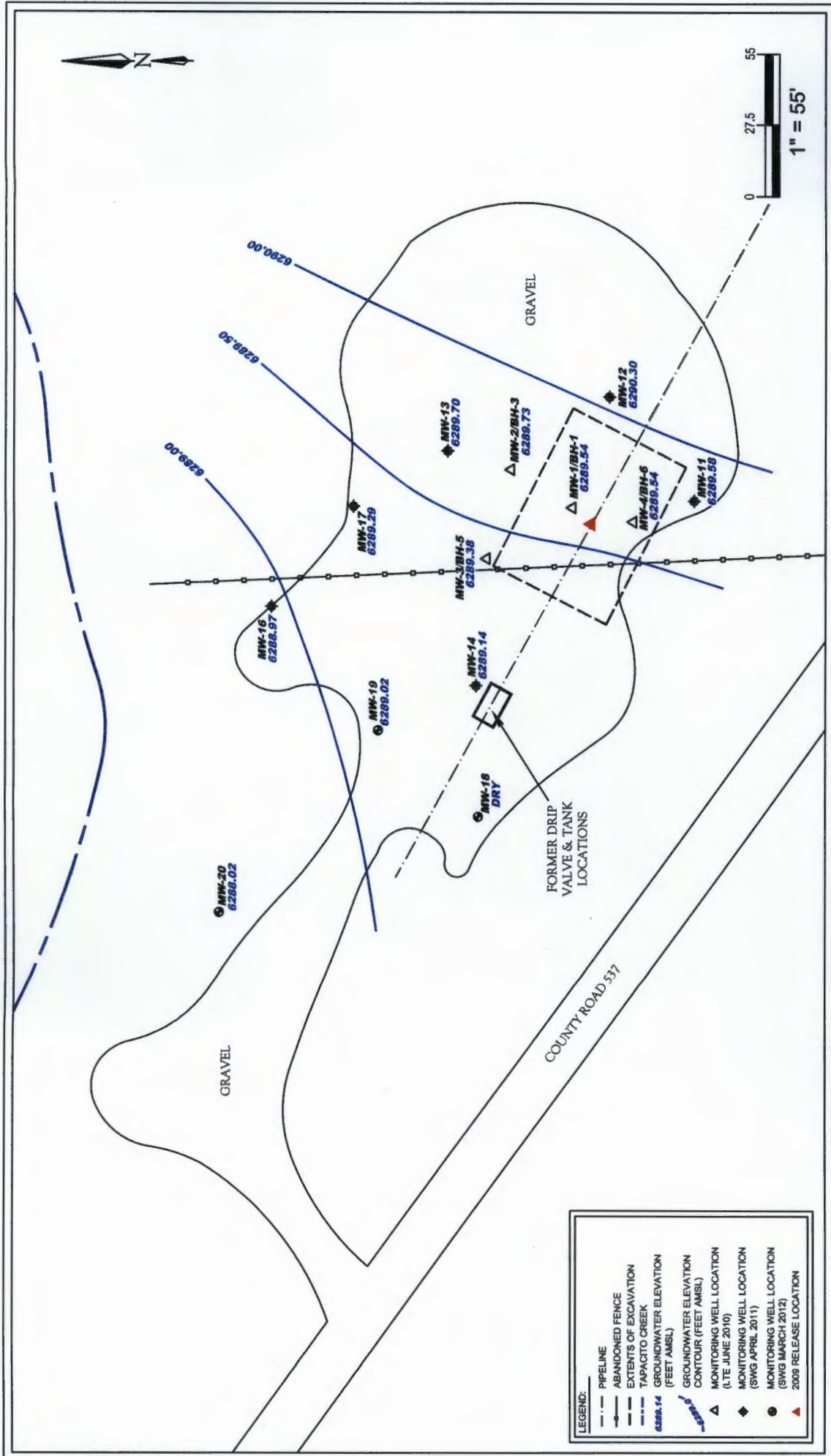


FIGURE 4A
GROUNDWATER
GRADIENT MAP
OCTOBER 2013



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

SWG Project No. 0410003



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



FIGURE 4B
GROUNDWATER
GRADIENT MAP
 DECEMBER 2013

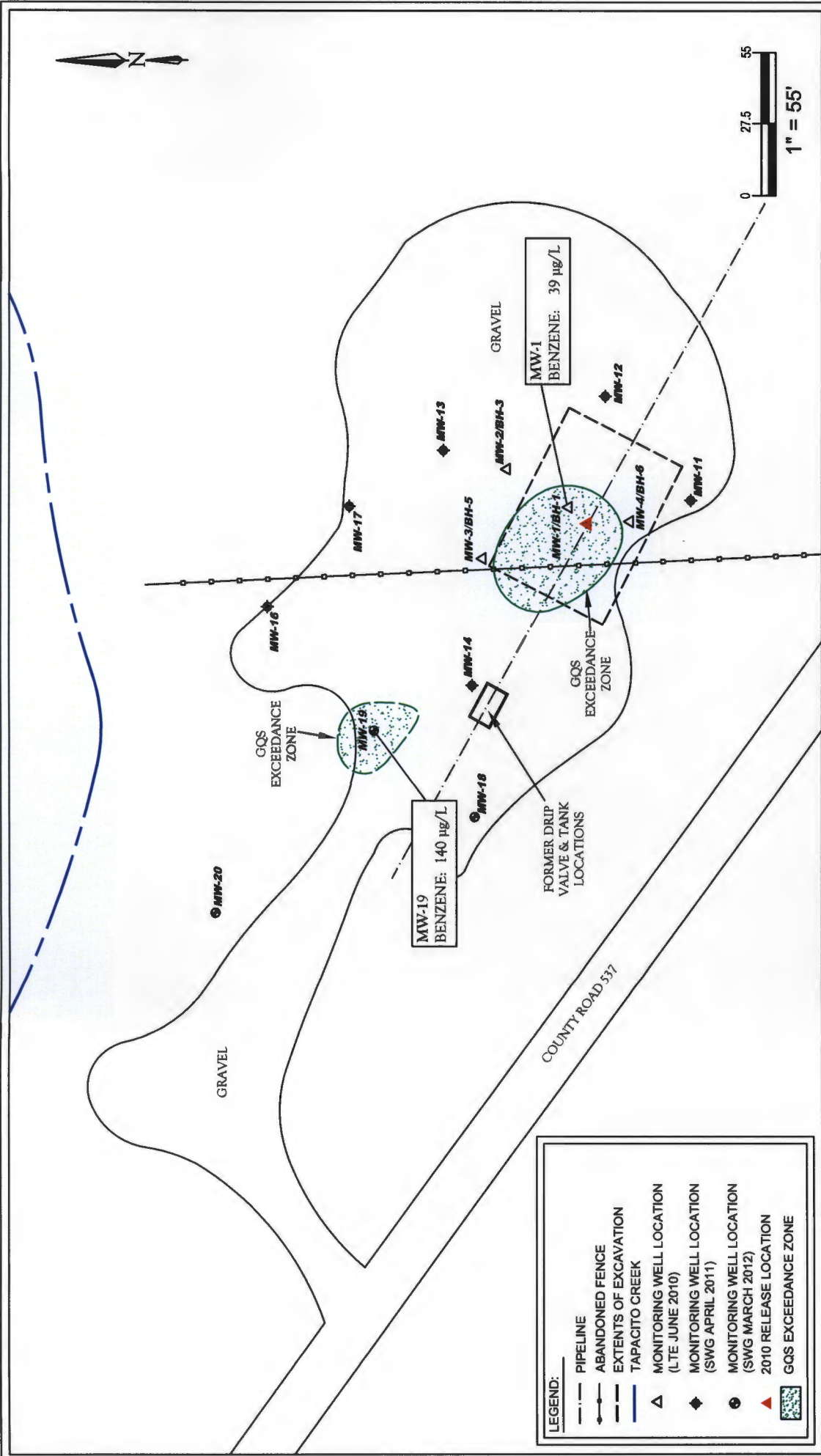


FIGURE 5A
GROUNDWATER QUALITY
STANDARD EXCEEDANCE ZONE
OCTOBER 2013



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

SWG Project No. 0410003

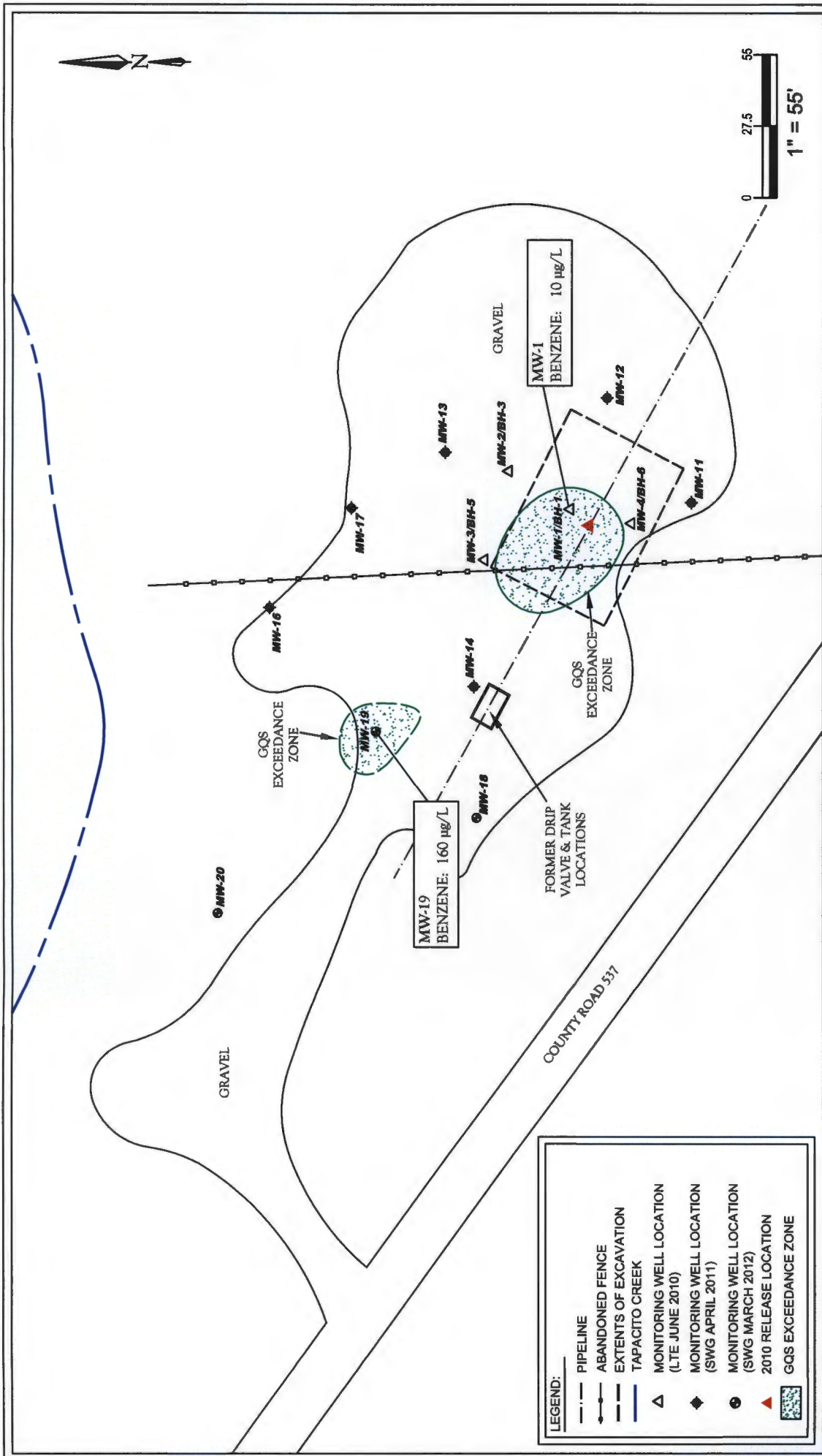


FIGURE 5B
GROUNDWATER QUALITY
STANDARD EXCEEDANCE ZONE
DECEMBER 2013



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

SWG Project No. 0410003

APPENDIX B

Tables

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 Commission Groundwater Quality Standards							
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
	10.22.13	39	<1.0	24	13	0.23	<1.0
	12.16.13	10	<1.0	14	11	0.18	<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
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

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 Commission 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
		10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
		12.13.13	<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	9.7	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	
	10.22.13	<1.0	<1.0	12	3.8	0.13	<1.0	
	12.13.13	<1.0	<1.0	16	6.2	0.4	<1.0	

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 Commission Groundwater Quality Standards							
		10	750	750	620	NE	NE
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
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	MW-12	4.21.11	1.9	<1.0	<1.0	<2.0	<0.050
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
10.21.13		<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
12.13.13		<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
	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
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.12.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

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 Commission Groundwater Quality Standards							
		10	750	750	620	NE	NE
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
	10.22.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.16.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	MW-16	4.21.11	4.4	<2.0	<2.0	<4.0	<0.10
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
10.21.13		<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
12.12.13		1	<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
	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
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.12.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0

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 Commission Groundwater Quality Standards							
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
	10.21.13	NS	NS	NS	NS	NS	NS
	12.12.13	NS	NS	NS	NS	NS	NS
	3.20.12	250	56	310	3,900	16	5.3
	6.19.12	NAPL	NAPL	NAPL	NAPL	NA	NA
MW-19	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
	10.22.13	140	<1.0	<1.0	<2.0	0.51	2.1
	12.16.13	160	<1.0	37	12	1.4	4.2
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
	10.22.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.16.13	<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

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
	10.22.13	ND	11.71	ND		6289.18
12.12.13	ND	11.35	ND		6289.54	
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
	10.21.13	ND	10.44	ND		6289.38
12.12.13	ND	10.09	ND		6289.73	
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
	10.21.13	ND	11.12	ND		6289.10
12.12.13	ND	10.84	ND		6289.38	
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
	10.22.13	ND	11.74	ND		6289.17
12.12.13	ND	11.37	ND		6289.54	
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
	10.21.13	ND	11.94	ND		6289.25
12.12.13	ND	11.61	ND		6289.58	

TABLE 2
K-51 Pipeline Release
GROUNDWATER ELEVATIONS

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
10.21.13	ND	9.09	ND		6289.99	
12.12.13	ND	8.78	ND		6290.30	
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
10.21.13	ND	8.91	ND		6289.36	
12.12.13	ND	8.57	ND		6289.70	
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
10.22.13	ND	12.39	ND		6288.81	
12.12.13	ND	12.06	ND		6289.14	
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
10.21.13	ND	11.32	ND		6288.57	
12.12.13	ND	10.92	ND		6288.97	
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
10.21.13	ND	9.61	ND		6288.96	
12.12.13	ND	9.28	ND		6289.29	

TABLE 2
K-51 Pipeline Release
GROUNDWATER ELEVATIONS

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
	10.22.13	ND	NG	ND		NG
	12.12.13	ND	NG	ND		NG
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
	10.22.13	ND	15.13	ND		6288.67
	12.12.13	ND	14.78	ND		6289.02
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
	10.22.13	ND	24.98	ND		6287.61
	12.12.13	ND	24.57	ND		6288.02

BTOC - below top of casing

AMSL - above mean sea level

TOC - top of casing

* - corrected for presence of phase-separated hydrocarbon using a site-specific density correction factor of 0.63

ND - Not Detected

NG - Not Gauged or Errant Gauge

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

November 01, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX (214) 350-2914

RE: K-51

OrderNo.: 1310C23

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 12 sample(s) on 10/24/2013 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1310C23

Date Reported: 11/1/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-16

Project: K-51

Collection Date: 10/21/2013 12:55:00 PM

Lab ID: 1310C23-001

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 1:49:37 AM	10038
Surr: DNOP	112	70.1-140		%REC	1	10/29/2013 1:49:37 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 12:46:40 PM	R14466
Surr: BFB	96.7	51.5-151		%REC	1	10/30/2013 12:46:40 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 12:46:40 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 12:46:40 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 12:46:40 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 12:46:40 PM	R14466
Surr: 4-Bromofluorobenzene	115	85-136		%REC	1	10/30/2013 12:46:40 PM	R14466

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
S	Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-17

Project: K-51

Collection Date: 10/21/2013 1:50:00 PM

Lab ID: 1310C23-002

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 2:11:43 AM	10038
Surr: DNOP	116	70.1-140		%REC	1	10/29/2013 2:11:43 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 2:12:18 PM	R14466
Surr: BFB	94.6	51.5-151		%REC	1	10/30/2013 2:12:18 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 2:12:18 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 2:12:18 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 2:12:18 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 2:12:18 PM	R14466
Surr: 4-Bromofluorobenzene	113	85-136		%REC	1	10/30/2013 2:12:18 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-13

Project: K-51

Collection Date: 10/21/2013 2:45:00 PM

Lab ID: 1310C23-003

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 2:33:42 AM	10038
Surr: DNOP	117	70.1-140		%REC	1	10/29/2013 2:33:42 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 3:38:15 PM	R14466
Surr: BFB	99.0	51.5-151		%REC	1	10/30/2013 3:38:15 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 3:38:15 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 3:38:15 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 3:38:15 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 3:38:15 PM	R14466
Surr: 4-Bromofluorobenzene	119	85-136		%REC	1	10/30/2013 3:38:15 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-12

Project: K-51

Collection Date: 10/21/2013 3:47:00 PM

Lab ID: 1310C23-004

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 2:55:47 AM	10038
Surr: DNOP	107	70.1-140		%REC	1	10/29/2013 2:55:47 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 4:06:52 PM	R14466
Surr: BFB	97.5	51.5-151		%REC	1	10/30/2013 4:06:52 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 4:06:52 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 4:06:52 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 4:06:52 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 4:06:52 PM	R14466
Surr: 4-Bromofluorobenzene	116	85-136		%REC	1	10/30/2013 4:06:52 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Analytical Report

Lab Order 1310C23

Date Reported: 11/1/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-11

Project: K-51

Collection Date: 10/21/2013 4:50:00 PM

Lab ID: 1310C23-005

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 3:17:44 AM	10038
Surr: DNOP	116	70.1-140		%REC	1	10/29/2013 3:17:44 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 4:35:32 PM	R14466
Surr: BFB	97.1	51.5-151		%REC	1	10/30/2013 4:35:32 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 4:35:32 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 4:35:32 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 4:35:32 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 4:35:32 PM	R14466
Surr: 4-Bromofluorobenzene	116	85-136		%REC	1	10/30/2013 4:35:32 PM	R14466

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
S	Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-2

Project: K-51

Collection Date: 10/21/2013 5:55:00 PM

Lab ID: 1310C23-006

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 3:39:59 AM	10038
Surr: DNOP	115	70.1-140		%REC	1	10/29/2013 3:39:59 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 5:04:05 PM	R14466
Surr: BFB	97.7	51.5-151		%REC	1	10/30/2013 5:04:05 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 5:04:05 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 5:04:05 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 5:04:05 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 5:04:05 PM	R14466
Surr: 4-Bromofluorobenzene	117	85-136		%REC	1	10/30/2013 5:04:05 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-3

Project: K-51

Collection Date: 10/21/2013 6:50:00 PM

Lab ID: 1310C23-007

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 4:01:54 AM	10038
Surr: DNOP	126	70.1-140		%REC	1	10/29/2013 4:01:54 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 5:32:39 PM	R14466
Surr: BFB	97.7	51.5-151		%REC	1	10/30/2013 5:32:39 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 5:32:39 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 5:32:39 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 5:32:39 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 5:32:39 PM	R14466
Surr: 4-Bromofluorobenzene	117	85-136		%REC	1	10/30/2013 5:32:39 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-4

Project: K-51

Collection Date: 10/22/2013 9:05:00 AM

Lab ID: 1310C23-008

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 4:45:52 AM	10038
Surr: DNOP	123	70.1-140		%REC	1	10/29/2013 4:45:52 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.13	0.050		mg/L	1	10/30/2013 6:01:10 PM	R14466
Surr: BFB	130	51.5-151		%REC	1	10/30/2013 6:01:10 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 6:01:10 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 6:01:10 PM	R14466
Ethylbenzene	12	1.0		µg/L	1	10/30/2013 6:01:10 PM	R14466
Xylenes, Total	3.8	2.0		µg/L	1	10/30/2013 6:01:10 PM	R14466
Surr: 4-Bromofluorobenzene	129	85-136		%REC	1	10/30/2013 6:01:10 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-1

Project: K-51

Collection Date: 10/22/2013 10:25:00 AM

Lab ID: 1310C23-009

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 5:08:01 AM	10038
Surr: DNOP	130	70.1-140		%REC	1	10/29/2013 5:08:01 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.23	0.050		mg/L	1	10/30/2013 6:58:20 PM	R14466
Surr: BFB	112	51.5-151		%REC	1	10/30/2013 6:58:20 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	39	1.0		µg/L	1	10/30/2013 6:58:20 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 6:58:20 PM	R14466
Ethylbenzene	24	1.0		µg/L	1	10/30/2013 6:58:20 PM	R14466
Xylenes, Total	13	2.0		µg/L	1	10/30/2013 6:58:20 PM	R14466
Surr: 4-Bromofluorobenzene	123	85-136		%REC	1	10/30/2013 6:58:20 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-14

Project: K-51

Collection Date: 10/22/2013 11:45:00 AM

Lab ID: 1310C23-010

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 5:29:56 AM	10038
Surr: DNOP	142	70.1-140	S	%REC	1	10/29/2013 5:29:56 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 7:26:53 PM	R14466
Surr: BFB	97.8	51.5-151		%REC	1	10/30/2013 7:26:53 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 7:26:53 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 7:26:53 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 7:26:53 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 7:26:53 PM	R14466
Surr: 4-Bromofluorobenzene	118	85-136		%REC	1	10/30/2013 7:26:53 PM	R14466

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
	S	Spike Recovery outside accepted recovery limits		

Analytical Report

Lab Order 1310C23

Date Reported: 11/1/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-19**Project:** K-51**Collection Date:** 10/22/2013 12:45:00 PM**Lab ID:** 1310C23-011**Matrix:** AQUEOUS**Received Date:** 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	2.1	1.0		mg/L	1	10/29/2013 3:11:00 PM	10038
Surr: DNOP	118	70.1-140		%REC	1	10/29/2013 3:11:00 PM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.51	0.050		mg/L	1	10/30/2013 9:49:34 PM	R14466
Surr: BFB	132	51.5-151		%REC	1	10/30/2013 9:49:34 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	140	5.0		µg/L	5	10/31/2013 2:34:53 PM	R14497
Toluene	ND	1.0		µg/L	1	10/30/2013 9:49:34 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 9:49:34 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 9:49:34 PM	R14466
Surr: 4-Bromofluorobenzene	125	85-136		%REC	1	10/30/2013 9:49:34 PM	R14466

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
S	Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-20

Project: K-51

Collection Date: 10/22/2013 1:55:00 PM

Lab ID: 1310C23-012

Matrix: AQUEOUS

Received Date: 10/24/2013 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/29/2013 6:13:57 AM	10038
Surr: DNOP	114	70.1-140		%REC	1	10/29/2013 6:13:57 AM	10038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/30/2013 10:46:33 PM	R14466
Surr: BFB	99.3	51.5-151		%REC	1	10/30/2013 10:46:33 PM	R14466
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	10/30/2013 10:46:33 PM	R14466
Toluene	ND	1.0		µg/L	1	10/30/2013 10:46:33 PM	R14466
Ethylbenzene	ND	1.0		µg/L	1	10/30/2013 10:46:33 PM	R14466
Xylenes, Total	ND	2.0		µg/L	1	10/30/2013 10:46:33 PM	R14466
Surr: 4-Bromofluorobenzene	119	85-136		%REC	1	10/30/2013 10:46:33 PM	R14466

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
	S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1310C23

01-Nov-13

Client: Southwest Geoscience

Project: K-51

Sample ID	MB-10038	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID:	10038	RunNo:	14373					
Prep Date:	10/28/2013	Analysis Date:	10/28/2013	SeqNo:	412960	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	1.2		1.000		118	70.1	140			

Sample ID	LCS-10038	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	LCSW	Batch ID:	10038	RunNo:	14373					
Prep Date:	10/28/2013	Analysis Date:	10/28/2013	SeqNo:	412961	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.0	1.0	5.000	0	99.1	73.3	145			
Surr: DNOP	0.55		0.5000		110	70.1	140			

Sample ID	LCSD-10038	SampType:	LCSD	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	LCSS02	Batch ID:	10038	RunNo:	14373					
Prep Date:	10/28/2013	Analysis Date:	10/28/2013	SeqNo:	412962	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	73.3	145	2.99	20	
Surr: DNOP	0.55		0.5000		111	70.1	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1310C23

01-Nov-13

Client: Southwest Geoscience

Project: K-51

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415629	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		96.5	51.5	151			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415630	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	105	80	120			
Surr: BFB	21		20.00		104	51.5	151			

Sample ID	1310C23-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-16	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415632	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	67.7	128			
Surr: BFB	21		20.00		106	51.5	151			

Sample ID	1310C23-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-16	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415633	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	102	67.7	128	2.60	20	
Surr: BFB	21		20.00		106	51.5	151	0	0	

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R14497	RunNo:	14497					
Prep Date:		Analysis Date:	10/31/2013	SeqNo:	416401	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: BFB	19		20.00		92.8	51.5	151			
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Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R14497	RunNo:	14497					
Prep Date:		Analysis Date:	10/31/2013	SeqNo:	416402	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: BFB	20		20.00		101	51.5	151			
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Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1310C23

01-Nov-13

Client: Southwest Geoscience

Project: K-51

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415656	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	23		20.00		115	85	136			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415657	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.4	80	120			
Toluene	20	1.0	20.00	0	101	80	120			
Ethylbenzene	20	1.0	20.00	0	101	80	120			
Xylenes, Total	61	2.0	60.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		122	85	136			

Sample ID	1310C23-002AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-17	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415660	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	15	1.0	20.00	0	74.7	73.4	119			
Toluene	16	1.0	20.00	0	78.3	80	120			S
Ethylbenzene	16	1.0	20.00	0	78.5	80	120			S
Xylenes, Total	48	2.0	60.00	0	80.1	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		121	85	136			

Sample ID	1310C23-002AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-17	Batch ID:	R14466	RunNo:	14466					
Prep Date:		Analysis Date:	10/30/2013	SeqNo:	415661	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	14	1.0	20.00	0	69.5	73.4	119	7.23	20	S
Toluene	15	1.0	20.00	0	73.5	80	120	6.39	20	S
Ethylbenzene	15	1.0	20.00	0	74.7	80	120	4.96	20	S
Xylenes, Total	45	2.0	60.00	0	75.2	80	120	6.31	20	S
Surr: 4-Bromofluorobenzene	24		20.00		119	85	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1310C23

01-Nov-13

Client: Southwest Geoscience

Project: K-51

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R14497	RunNo:	14497					
Prep Date:		Analysis Date:	10/31/2013	SeqNo:	416431	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Benzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		102	85	136			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R14497	RunNo:	14497					
Prep Date:		Analysis Date:	10/31/2013	SeqNo:	416432	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Benzene	18	1.0	20.00	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	85	136			

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 |
| S Spike Recovery outside accepted recovery limits | |



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87105
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Southwest Geoscience

Work Order Number: 1310C23

RcptNo: 1

Received by/date: AT 10/24/13

Logged By: Lindsay Mangin 10/24/2013 10:10:00 AM *[Signature]*

Completed By: Lindsay Mangin 10/25/2013 8:34:33 AM *[Signature]*

Reviewed By: TC 10/25/13

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? Yes No
(Note discrepancies on chain of custody)
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? Yes No
(If no, notify customer for authorization.)

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	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location ^{5th} 606 Rio Grande A
Aztec, NM 87410

Project Manager K. Summers

Laboratory: Hall Laboratory
Address: Albuquerque, NM

Contact:
Phone:
PO/ISO #: 0410003

Sampler's Signature

Joseph Deyle

Project Name: K-51 No/Type of Containers

Matrix Date Time Identifying Marks of Sample(s) VOA A/G 250 ml P/O

Matrix	Date	Time	Identifying Marks of Sample(s)	VOA	A/G 1 L	250 ml	P/O
W	10/21/13	1255	X MW-16	5			
W	10/21/13	1350	X MW-17	5			
W	10/21/13	1445	X MW-13	5			
W	10/21/13	1547	X MW-12	5			
W	10/21/13	1650	X MW-11	5			
W	10/21/13	1755	X MW-2	5			
W	10/21/13	1850	X MW-3	5			
W	10/22/13	0905	X MW-4	5			
W	10/22/13	1025	X MW-1	5			
W	10/22/13	1145	X MW-14	5			

Turn around time Normal 25% Rush 50% Rush 100% Rush

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
<i>Joseph Deyle</i>	10/22/13	1420	<i>[Signature]</i>	10/22/13	1420
<i>[Signature]</i>	10/23/13	5:05 AM	<i>[Signature]</i>	10/23/13	05:00
<i>[Signature]</i>	10/24/13	12:40	<i>Christina Wagner</i>	10/23/13	12:40
<i>Christina Wagner</i>	10/24/13	6:40	<i>[Signature]</i>	10/24/13	10:10

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

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°): 10

1 2 3 4 5

Page 1 of 2

Lab Sample ID (Lab Use Only)

1310023-001
-002
-003
-004
-005
-006
-007
-008
-009
-010

NOTES:

TPH BUIS 60/mo
BTEX BUIS

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE Environmental & Hydrogeologic Consultants		Laboratory: <u>Hall Laboratories</u> Address: <u>Albuquerque, NM</u>		ANALYSIS REQUESTED <u>BTX @021</u> <u>TPH @015 (GRO/PC)</u>		Lab use only Due Date: _____ Temp. of coolers when received (C°): 1 2 3 4 5 Page <u>2</u> of <u>2</u>	
Office Location <u>606 Rio Grande Ave. Aztec, NM 87410</u>		Contact: _____ Phone: _____ PO/ISO #: <u>CH10003</u>		No/Type of Containers VOA A/G 1 L. 250 ml P/O		Lab Sample ID (Lab Use Only) <u>B10023-011</u> <u>-012</u>	
Project Manager <u>K. Summers</u> Sampler's Name <u>Joseph Dwyer</u>		Project Name <u>K-51</u> Identifying Marks of Sample(s)		Date Time Received by: (Signature)		Date Time Received by: (Signature)	
Matrix	Date	Time	Identifying Marks of Sample(s)	Received by: (Signature)	Date	Time	Received by: (Signature)
W	10/22/13	1245	X MW-19	[Signature]	10/23/13	1420	[Signature]
W	10/22/13	1335	X MW-20	[Signature]	10/23/13	0600	[Signature]
SD							
Turn around time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush							
Relinquished by (Signature)				Date: _____ Time: _____			
Relinquished by (Signature)				Date: _____ Time: _____			
Relinquished by (Signature)				Date: _____ Time: _____			
Relinquished by (Signature)				Date: _____ Time: _____			
Relinquished by (Signature)				Date: _____ Time: _____			
Relinquished by (Signature)				Date: _____ Time: _____			

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



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

December 19, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX (214) 350-2914

RE: K-51

OrderNo.: 1312645

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/16/2013 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1312645

Date Reported: 12/19/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-2

Project: K-51

Collection Date: 12/13/2013 11:45:00 AM

Lab ID: 1312645-001

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 12:09:42 AM	10842
Surr: DNOP	109	70.1-140		%REC	1	12/19/2013 12:09:42 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 2:17:39 PM	R15587
Surr: BFB	84.5	80.4-118		%REC	1	12/18/2013 2:17:39 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 2:17:39 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 2:17:39 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 2:17:39 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 2:17:39 PM	R15587
Surr: 4-Bromofluorobenzene	93.4	85-136		%REC	1	12/18/2013 2:17:39 PM	R15587

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
	S Spike Recovery outside accepted recovery limits	

Analytical Report

Lab Order 1312645

Date Reported: 12/19/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-3**Project:** K-51**Collection Date:** 12/13/2013 10:50:00 AM**Lab ID:** 1312645-002**Matrix:** AQUEOUS**Received Date:** 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 12:31:29 AM	10842
Surr: DNOP	106	70.1-140		%REC	1	12/19/2013 12:31:29 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 2:47:52 PM	R15587
Surr: BFB	84.3	80.4-118		%REC	1	12/18/2013 2:47:52 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 2:47:52 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 2:47:52 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 2:47:52 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 2:47:52 PM	R15587
Surr: 4-Bromofluorobenzene	94.3	85-136		%REC	1	12/18/2013 2:47:52 PM	R15587

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
	S	Spike Recovery outside accepted recovery limits		

Analytical Report

Lab Order 1312645

Date Reported: 12/19/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-4

Project: K-51

Collection Date: 12/13/2013 1:40:00 PM

Lab ID: 1312645-003

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 12:53:05 AM	10842
Surr: DNOP	102	70.1-140		%REC	1	12/19/2013 12:53:05 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.42	0.050		mg/L	1	12/18/2013 3:18:04 PM	R15587
Surr: BFB	156	80.4-118	S	%REC	1	12/18/2013 3:18:04 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 3:18:04 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 3:18:04 PM	R15587
Ethylbenzene	16	1.0		µg/L	1	12/18/2013 3:18:04 PM	R15587
Xylenes, Total	6.2	2.0		µg/L	1	12/18/2013 3:18:04 PM	R15587
Surr: 4-Bromofluorobenzene	136	85-136	S	%REC	1	12/18/2013 3:18:04 PM	R15587

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-11

Project: K-51

Collection Date: 12/13/2013 3:00:00 PM

Lab ID: 1312645-004

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 1:15:00 AM	10842
Surr: DNOP	104	70.1-140		%REC	1	12/19/2013 1:15:00 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 3:48:14 PM	R15587
Surr: BFB	84.1	80.4-118		%REC	1	12/18/2013 3:48:14 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 3:48:14 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 3:48:14 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 3:48:14 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 3:48:14 PM	R15587
Surr: 4-Bromofluorobenzene	96.2	85-136		%REC	1	12/18/2013 3:48:14 PM	R15587

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
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-12

Project: K-51

Collection Date: 12/13/2013 12:45:00 PM

Lab ID: 1312645-005

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 1:37:00 AM	10842
Surr: DNOP	111	70.1-140		%REC	1	12/19/2013 1:37:00 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 5:18:38 PM	R15587
Surr: BFB	84.4	80.4-118		%REC	1	12/18/2013 5:18:38 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 5:18:38 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 5:18:38 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 5:18:38 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 5:18:38 PM	R15587
Surr: 4-Bromofluorobenzene	97.8	85-136		%REC	1	12/18/2013 5:18:38 PM	R15587

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
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-13

Project: K-51

Collection Date: 12/12/2013 3:55:00 PM

Lab ID: 1312645-006

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 2:01:01 AM	10842
Surr: DNOP	102	70.1-140		%REC	1	12/19/2013 2:01:01 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 6:49:23 PM	R15587
Surr: BFB	85.4	80.4-118		%REC	1	12/18/2013 6:49:23 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 6:49:23 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 6:49:23 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 6:49:23 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 6:49:23 PM	R15587
Surr: 4-Bromofluorobenzene	101	85-136		%REC	1	12/18/2013 6:49:23 PM	R15587

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
	S	Spike Recovery outside accepted recovery limits		

Analytical Report

Lab Order 1312645

Date Reported: 12/19/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-16

Project: K-51

Collection Date: 12/12/2013 2:05:00 PM

Lab ID: 1312645-007

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 2:22:42 AM	10842
Surr: DNOP	122	70.1-140		%REC	1	12/19/2013 2:22:42 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 10:20:24 PM	R15587
Surr: BFB	82.7	80.4-118		%REC	1	12/18/2013 10:20:24 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	1.0	1.0		µg/L	1	12/18/2013 10:20:24 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 10:20:24 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 10:20:24 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 10:20:24 PM	R15587
Surr: 4-Bromofluorobenzene	92.2	85-136		%REC	1	12/18/2013 10:20:24 PM	R15587

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-17

Project: K-51

Collection Date: 12/12/2013 3:05:00 PM

Lab ID: 1312645-008

Matrix: AQUEOUS

Received Date: 12/16/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/19/2013 2:44:44 AM	10842
Surr: DNOP	116	70.1-140		%REC	1	12/19/2013 2:44:44 AM	10842
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/18/2013 10:50:26 PM	R15587
Surr: BFB	86.2	80.4-118		%REC	1	12/18/2013 10:50:26 PM	R15587
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/18/2013 10:50:26 PM	R15587
Toluene	ND	1.0		µg/L	1	12/18/2013 10:50:26 PM	R15587
Ethylbenzene	ND	1.0		µg/L	1	12/18/2013 10:50:26 PM	R15587
Xylenes, Total	ND	2.0		µg/L	1	12/18/2013 10:50:26 PM	R15587
Surr: 4-Bromofluorobenzene	95.4	85-136		%REC	1	12/18/2013 10:50:26 PM	R15587

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
	S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312645

19-Dec-13

Client: Southwest Geoscience

Project: K-51

Sample ID	MB-10842	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID:	10842	RunNo:	15573					
Prep Date:	12/17/2013	Analysis Date:	12/18/2013	SeqNo:	448704	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	0.91		1.000		90.5	70.1	140			

Sample ID	LCS-10842	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	LCSW	Batch ID:	10842	RunNo:	15573					
Prep Date:	12/17/2013	Analysis Date:	12/18/2013	SeqNo:	448809	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.6	1.0	5.000	0	113	73.3	145			
Surr: DNOP	0.52		0.5000		105	70.1	140			

Sample ID	LCSD-10842	SampType:	LCSD	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	LCSS02	Batch ID:	10842	RunNo:	15573					
Prep Date:	12/17/2013	Analysis Date:	12/18/2013	SeqNo:	448863	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	73.3	145	0.556	20	
Surr: DNOP	0.53		0.5000		106	70.1	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312645
19-Dec-13

Client: Southwest Geoscience
Project: K-51

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449162	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	16		20.00		81.2	80.4	118			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449163	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	99.3	80	120			
Surr: BFB	18		20.00		89.7	80.4	118			

Sample ID	1312645-004AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-11	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449170	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	67.7	128			
Surr: BFB	17		20.00		86.9	80.4	118			

Sample ID	1312645-004AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-11	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449171	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	67.7	128	0.149	20	
Surr: BFB	18		20.00		90.0	80.4	118	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312645

19-Dec-13

Client: Southwest Geoscience

Project: K-51

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449180	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		93.6	85	136			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449181	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	103	80	120			
Xylenes, Total	63	2.0	60.00	0	105	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		101	85	136			

Sample ID	1312645-005AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-12	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449190	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0.3040	87.4	73.4	119			
Toluene	18	1.0	20.00	0.4540	85.7	80	120			
Ethylbenzene	17	1.0	20.00	0.3360	85.7	80	120			
Xylenes, Total	53	2.0	60.00	0.8440	87.6	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		100	85	136			

Sample ID	1312645-005AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-12	Batch ID:	R15587	RunNo:	15587					
Prep Date:		Analysis Date:	12/18/2013	SeqNo:	449191	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0.3040	90.7	73.4	119	3.60	20	
Toluene	18	1.0	20.00	0.4540	89.5	80	120	4.21	20	
Ethylbenzene	18	1.0	20.00	0.3360	89.0	80	120	3.66	20	
Xylenes, Total	55	2.0	60.00	0.8440	91.0	80	120	3.74	20	
Surr: 4-Bromofluorobenzene	21		20.00		104	85	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Southwest Geoscience

Work Order Number: 1312645

RcptNo: 1

Received by/date: [Signature] 12/18/13

Logged By: Lindsey Mangin 12/16/2013 10:00:00 AM [Signature]

Completed By: Lindsey Mangin 12/16/2013 11:18:20 AM [Signature]

Reviewed By: mg 12/18/13

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? 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? 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	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

**Southwest
GEOSCIENCE**
Environmental & Hydrogeologic Consultants

Office Location AZTEC, NM

Project Manager Kyle Summers

Sampler's Name
AARON BRYANT

Proj. No. 04106003
Project Name K-51

Laboratory: HALL

Address: ABO

Contact: Freeman

Phone: _____

PO/ISO #: 04106003

Sampler's Signature
[Signature]

No/Type of Containers

Matrix	Date	Time	C o m p	G r a b	Identifying Marks of Sample(s)	100 ml	250 ml	500 ml	1 L	250 ml	P/O
W	12/13/13	1145	✓	✓	MW-2	*	2				X
W	12/13/13	1050	✓	✓	MW-3	*	3				X
W	12/13/13	1340	✓	✓	MW-4	*	4				X
W	12/13/13	1500	✓	✓	MW-11	*	5				X
W	12/13/13	1245	✓	✓	MW-12	*	4				X
W	12/13/13	1555	✓	✓	MW-13	*	4				X
W	12/13/13	1405	✓	✓	MW-16	*	4				X
W	12/13/13	1505	✓	✓	MW-17	*	3				X

NFS AB

ANALYSIS
REQUESTED

BTEX 8021
TPH 8015
DRA/GRO

Lab Sample ID (Lab Use Only)

1312645-001
-002
-003
-004
-005
-006
-007
-008

Lab use only
Due Date:

Temp. of coolers
when received (C°): 1.0

1 2 3 4 5

Page 1 of 1

NOTES:

*Sample had broken vials
12/18/13

Turn around time	Normal	25% Rush	50% Rush	100% Rush
Relinquished by (Signature)	<u>[Signature]</u>			
Date:	12/13/13			
Time:	0900			
Relinquished by (Signature)	<u>[Signature]</u>			
Date:	12/14/13			
Time:	1500			
Relinquished by (Signature)	<u>[Signature]</u>			
Date:	12/13/13			
Time:	1000			

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



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

December 23, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX: (214) 350-2914

RE: K-51

OrderNo.: 1312936

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/17/2013 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 qualifiers 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1312936

Date Reported: 12/23/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-1**Project:** K-51**Collection Date:** 12/16/2013 10:55:00 AM**Lab ID:** 1312936-001**Matrix:** AQUEOUS**Received Date:** 12/17/2013 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	12/23/2013 9:45:48 AM	10914
Surr: DNOP	126	70.1-140		%REC	1	12/23/2013 9:45:48 AM	10914
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.18	0.050		mg/L	1	12/20/2013 4:04:21 PM	R15650
Surr: BFB	97.0	80.4-118		%REC	1	12/20/2013 4:04:21 PM	R15650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	23	1.0		µg/L	1	12/20/2013 4:04:21 PM	R15650
Toluene	ND	1.0		µg/L	1	12/20/2013 4:04:21 PM	R15650
Ethylbenzene	14	1.0		µg/L	1	12/20/2013 4:04:21 PM	R15650
Xylenes, Total	11	2.0		µg/L	1	12/20/2013 4:04:21 PM	R15650
Surr: 4-Bromofluorobenzene	105	85-136		%REC	1	12/20/2013 4:04:21 PM	R15650

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1312936

Date Reported: 12/23/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-20

Project: K-51

Collection Date: 12/16/2013 12:30:00 PM

Lab ID: 1312936-002

Matrix: AQUEOUS

Received Date: 12/17/2013 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	12/23/2013 10:07:41 AM	10914
Surr: DNOP	126	70.1-140		%REC	1	12/23/2013 10:07:41 AM	10914
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/20/2013 4:34:38 PM	R15650
Surr: BFB	89.5	80.4-118		%REC	1	12/20/2013 4:34:38 PM	R15650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/20/2013 4:34:38 PM	R15650
Toluene	ND	1.0		µg/L	1	12/20/2013 4:34:38 PM	R15650
Ethylbenzene	ND	1.0		µg/L	1	12/20/2013 4:34:38 PM	R15650
Xylenes, Total	ND	2.0		µg/L	1	12/20/2013 4:34:38 PM	R15650
Surr: 4-Bromofluorobenzene	106	85-136		%REC	1	12/20/2013 4:34:38 PM	R15650

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
	S Spike Recovery outside accepted recovery limits	

Analytical Report

Lab Order 1312936

Date Reported: 12/23/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-14

Project: K-51

Collection Date: 12/16/2013 10:05:00 AM

Lab ID: 1312936-003

Matrix: AQUEOUS

Received Date: 12/17/2013 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	12/23/2013 10:29:25 AM	10914
Surr: DNOP	119	70.1-140		%REC	1	12/23/2013 10:29:25 AM	10914
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	12/20/2013 5:04:44 PM	R15650
Surr: BFB	87.5	80.4-118		%REC	1	12/20/2013 5:04:44 PM	R15650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/20/2013 5:04:44 PM	R15650
Toluene	ND	1.0		µg/L	1	12/20/2013 5:04:44 PM	R15650
Ethylbenzene	ND	1.0		µg/L	1	12/20/2013 5:04:44 PM	R15650
Xylenes, Total	ND	2.0		µg/L	1	12/20/2013 5:04:44 PM	R15650
Surr: 4-Bromofluorobenzene	102	85-136		%REC	1	12/20/2013 5:04:44 PM	R15650

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
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1312936
 Date Reported: 12/23/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-19

Project: K-51

Collection Date: 12/16/2013 11:55:00 AM

Lab ID: 1312936-004

Matrix: AQUEOUS

Received Date: 12/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	4.2	1.0		mg/L	1	12/23/2013 10:51:22 AM	10914
Surr: DNOP	130	70.1-140		%REC	1	12/23/2013 10:51:22 AM	10914
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	1.4	0.050		mg/L	1	12/20/2013 5:35:01 PM	R15650
Surr: BFB	285	80.4-118	S	%REC	1	12/20/2013 5:35:01 PM	R15650
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	160	5.0		µg/L	5	12/21/2013 1:26:23 PM	R15667
Toluene	ND	1.0		µg/L	1	12/20/2013 5:35:01 PM	R15650
Ethylbenzene	37	1.0		µg/L	1	12/20/2013 5:35:01 PM	R15650
Xylenes, Total	12	2.0		µg/L	1	12/20/2013 5:35:01 PM	R15650
Surr: 4-Bromofluorobenzene	132	85-136		%REC	1	12/20/2013 5:35:01 PM	R15650

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
	S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312936

23-Dec-13

Client: Southwest Geoscience

Project: K-51

Sample ID: MB-10914	SampType: MBLK	TestCode: EPA Method 8015D: Diesel Range								
Client ID: PBW	Batch ID: 10914	RunNo: 15679								
Prep Date: 12/20/2013	Analysis Date: 12/23/2013	SeqNo: 452255	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	1.2		1.000		120	70.1	140			

Sample ID: LCS-10914	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range								
Client ID: LCSW	Batch ID: 10914	RunNo: 15679								
Prep Date: 12/20/2013	Analysis Date: 12/23/2013	SeqNo: 452256	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.5	1.0	5.000	0	130	73.3	145			
Surr: DNOP	0.66		0.5000		132	70.1	140			

Sample ID: LCSD-10914	SampType: LCSD	TestCode: EPA Method 8015D: Diesel Range								
Client ID: LCSS02	Batch ID: 10914	RunNo: 15679								
Prep Date: 12/20/2013	Analysis Date: 12/23/2013	SeqNo: 452257	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.7	1.0	5.000	0	134	73.3	145	3.33	20	
Surr: DNOP	0.66		0.5000		132	70.1	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1312936
 23-Dec-13

Client: Southwest Geoscience
Project: K-51

Sample ID: B25	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBW	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451471			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	16		20.00		80.7	80.4	118			

Sample ID: 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSW	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451472			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	80	120			
Surr: BFB	19		20.00		92.5	80.4	118			

Sample ID: 1312936-001AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: MW-1	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451474			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.74	0.050	0.5000	0.1790	112	67.7	128			
Surr: BFB	21		20.00		104	80.4	118			

Sample ID: 1312936-001AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: MW-1	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451475			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.72	0.050	0.5000	0.1790	108	67.7	128	2.85	20	
Surr: BFB	23		20.00		117	80.4	118	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312936

23-Dec-13

Client: Southwest Geoscience

Project: K-51

Sample ID: B25	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBW	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451492	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	18		20.00		89.6	85	136			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSW	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451493	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	80	120			
Toluene	21	1.0	20.00	0	107	80	120			
Ethylbenzene	22	1.0	20.00	0	108	80	120			
Xylenes, Total	66	2.0	60.00	0	110	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		92.6	85	136			

Sample ID: 1312936-002AMS	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: MW-20	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451496	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0.2820	108	73.4	119			
Toluene	22	1.0	20.00	0	109	80	120			
Ethylbenzene	22	1.0	20.00	0	109	80	120			
Xylenes, Total	66	2.0	60.00	0	111	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		109	85	136			

Sample ID: 1312936-002AMSD	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: MW-20	Batch ID: R15650	RunNo: 15650								
Prep Date:	Analysis Date: 12/20/2013	SeqNo: 451497	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0.2820	107	73.4	119	0.973	20	
Toluene	22	1.0	20.00	0	108	80	120	1.29	20	
Ethylbenzene	22	1.0	20.00	0	108	80	120	1.30	20	
Xylenes, Total	66	2.0	60.00	0	110	80	120	1.10	20	
Surr: 4-Bromofluorobenzene	22		20.00		110	85	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1312936
23-Dec-13

Client: Southwest Geoscience
Project: K-51

Sample ID: 5ML RB	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBW	Batch ID: R15667	RunNo: 15667								
Prep Date:	Analysis Date: 12/21/2013	SeqNo: 451694			Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		100	85	136			

Sample ID: 100NG BTEX LCS	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSW	Batch ID: R15667	RunNo: 15667								
Prep Date:	Analysis Date: 12/21/2013	SeqNo: 451695			Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	85	136			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Southwest Geoscience

Work Order Number: 1312936

RcptNo: 1

Received by/date: MB 12/17/13

Logged By: Anne Thorne 12/17/2013 10:00:00 AM *Anne Thorne*

Completed By: Anne Thorne 12/20/2013 *Anne Thorne*

Reviewed By: *[Signature]* 12/20/13

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	2.6	Good	Yes			

CHAIN OF CUSTODY RECORD

Lab use only
Due Date: _____
Temp. of coolers when received (C°): 2.6°

1 2 3 4 5
Page 1 of 1

ANALYSIS REQUESTED
BTEX 8621 TOH 8015 D&G/CR6

Laboratory: HALL
Address: ABQ
Contact: FREEMAN
Phone: _____
PO/SO #: 041061003

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants
Office Location AZTEC, NM
Project Manager KYLE SHERMAN
Sampler's Name AARON BRYANT

Matrix	Date	Time	Project Name			No/Type of Containers				Lab Sample ID (Lab Use Only)	
			C o m p	G a b	Identifying Marks of Sample(s)	5 gal	1 gal	VOA 1L	AVG 250 ml		P/O
W	12/16/13	1055	X		MW-1			5			1312936-001
W	12/16/13	1230	X		MW-20			5			-002
W	12/16/13	1005	X		MW-14			5			-003
W	12/16/13	1155	X		MW-19			5			-004
<u>AFS</u>											
<u>AB</u>											

Turn around time	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> 25% Rush	<input type="checkbox"/> 50% Rush	<input type="checkbox"/> 100% Rush	NOTES:		
Relinquished by (Signature)	<u>[Signature]</u>	Date: <u>12/16/13</u>	Time: <u>4:20</u>	Received by (Signature)	<u>Christine Cole</u>	Date: <u>12/16/13</u>	Time: <u>11:20</u>
Relinquished by (Signature)	<u>[Signature]</u>	Date: <u>12/16/13</u>	Time: <u>1750</u>	Received by (Signature)	<u>[Signature]</u>	Date: <u>12/17/13</u>	Time: <u>1000</u>
Relinquished by (Signature)	<u>[Signature]</u>	Date: _____	Time: _____	Received by (Signature)	_____	Date: _____	Time: _____
Relinquished by (Signature)	<u>[Signature]</u>	Date: _____	Time: _____	Received by (Signature)	_____	Date: _____	Time: _____

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