

3R – 453

GWMR

12 / 12 / 2013



FED 2E#1/2012

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

RECEIVED

December 12, 2013

2013 DEC 16 P 3: 07

Return Receipt Requested
7010 0290 0002 7764 0494

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: Enterprise Field Services, LLC - Federal 2E#1 Release Site
Quarterly Groundwater Monitoring Report – August 2013 Monitoring Event
SW¼ NE¼, Section 2, T27N, R12W
San Juan County, New Mexico**

Dear Mr. von Gonten:

Enterprise Field Services, LLC (Enterprise) is submitting the enclosed report entitled: *Quarterly Groundwater Monitoring Event (August 2013 Monitoring Event)*, dated October 28, 2013. This report documents the results of August 2013 groundwater monitoring event conducted at the March 15, 2012 natural gas condensate release site referenced above. The release occurred on an Enterprise 4-inch diameter gathering line from the Energen Resources Corporation Federal 2E#1 gas well, and is located within the Navajo Agricultural Products Inc. (NAPI) Field 409A.

Following the March 2012 release, site investigations were conducted to determine the extent of affected soil and groundwater at the release site. During April 2013, Enterprise installed a total of eleven (11) soil borings at the release site. Eight (8) soil borings were converted to permanent monitor wells, and two (2) soil borings were converted to shallow piezometers. Although no soil impacts were identified in excess of applicable New Mexico Oil Conservation Division (OCD) *Remediation Action Levels*, groundwater impacts were noted at three monitoring locations at concentrations exceeding New Mexico Water Quality Control Commission (WQCC) standards. The results of this investigation were reported to the OCD in correspondence dated June 18, 2013. Delineation of the full extent of groundwater impacts could not be completed due to the NAPI crop planting schedule in Field 409A.

During the August 2013 monitoring event, measured benzene concentrations in groundwater increased in the central portion of the groundwater plume, and the extent of the plume to the northwest has not been fully defined. Shallow piezometers, which were installed to determine if affected groundwater accumulated within potential crop root zones, have remained dry.

Enterprise will continue to perform quarterly groundwater monitoring events at the release site, and will gauge the shallow piezometers monthly. Enterprise will complete delineation of the full extent of affected groundwater at the release site when site access is available. Remedial actions for affected groundwater at the release site will be determined when this delineation is completed.

Mr. Glenn von Gonten
Federal 2E#1 Release Site
December 12, 2013
Page Two

If you have any questions concerning the enclosed report or recommendations, 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

Enclosure – *Federal 2E#1 Release Site- Supplemental Environmental Site Investigation*

cc: Brandon Powell, New Mexico Oil Conservation Division, Aztec, NM
Tosie Lewis, Navajo Agricultural Products Inc., Farmington, NM
Steve Austin, Navajo EPA, Shiprock, NM

ec: Chris Mitchell – Southwest Geoscience, San Antonio, TX
Kyle Summers – Southwest Geoscience, Aztec, NM

QUARTERLY GROUNDWATER MONITORING REPORT
(August 2013 Monitoring Event)

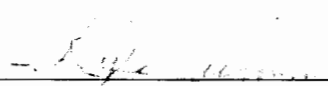
Property:

Federal 2E #1 Pipeline Release
SW ¼ NE ¼, Section 2, Township 27N, Range 12W
San Juan County, New Mexico

October 28, 2013

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

PREPARED BY:



Kyle Summers, C.P.G.
Senior Geologist/
Manager, Four Corners Office



B. Chris Mitchell, P.G.
Principal Geoscientist

Southwest

606 S. Rio Grande Avenue
Unit A, Downstairs West
Aztec, NM 87410
Ph: (505) 334-5200
Fax: (505) 334-5204

TABLE OF CONTENTS

| | |
|---|----|
| 1.0 EXECUTIVE SUMMARY | 1 |
| 2.0 INTRODUCTION | 4 |
| 2.1 Chronology of Events | 5 |
| 2.2 Scope of Work | 6 |
| 2.3 Standard of Care & Limitations | 6 |
| 3.0 SAMPLING PROGRAM | 6 |
| 4.0 LABORATORY ANALYTICAL PROGRAM | 7 |
| 5.0 GROUNDWATER FLOW DIRECTION | 7 |
| 6.0 SITE RANKING and PROPOSED CLEANUP GOALS | 8 |
| 7.0 DATA EVALUATION | 9 |
| 7.1 Quality Assurance / Quality Control | 9 |
| 7.1 Groundwater Samples | 9 |
| 8.0 FINDINGS | 10 |
| 9.0 RECOMMENDATIONS | 11 |

APPENDIX A - FIGURES

- Figure 1: Topographic Map
- Figure 2: Site Vicinity Map
- Figure 3: Site Map
- Figure 4: Groundwater Gradient Map (August 2013)
- Figure 5: Groundwater Quality Standard Exceedance Zone (August 2013)

APPENDIX B - TABLES

- Table 1: Groundwater Analytical Summary
- Table 2: Groundwater Elevations

APPENDIX C - LABORATORY ANALYTICAL DATA & CHAIN-OF-CUSTODY DOCUMENTATION

**QUARTERLY GROUNDWATER MONITORING REPORT
(August 2013 Monitoring Event)**

Federal 2E #1 Pipeline Release
SW ¼ NE ¼, Section 2, Township 27N, Range 12W
San Juan County, Navajo Nation, New Mexico

SWG Project No. 0413G002

1.0 EXECUTIVE SUMMARY

The Federal 2E #1 pipeline release site is located in the Navajo Agricultural Products Industry's (NAPI) Field 409A, off County Road (CR) 7010, in Section 2, Township 27N, Range 12W San Juan County, Navajo Nation, New Mexico, referred to hereinafter as the "Site" or "subject Site". The Site is an agricultural field irrigated by pivot irrigation. A 4-inch diameter Enterprise Field Services, LLC (Enterprise) natural gas pipeline transects the NAPI field from southwest to northeast, where it ties into the Federal 2E #1 gas well operated by Energen Resources Corporation. The general depth of the pipeline is considered to be between 6 feet to 10 feet below grade surface (bgs) beneath the cultivated field.

The objective of each Quarterly Groundwater Monitoring (QGM) event is to further evaluate the presence, magnitude, and extent of petroleum hydrocarbons in groundwater as a result of a March 2012 release from the Federal 2E #1 pipeline.

Specific details regarding the QGM event are further explained in the following sections and should be read to fully comprehend the extent of the investigation and results. In addition, historical and recent findings, as well as current recommendations are included in this executive summary for your convenience; however, the remaining text of the report and associated appendices should also be reviewed for a complete understanding of the QGM report.

On March 15, 2012, a natural gas condensate release was discovered by NAPI personnel. Enterprise was immediately notified, and the pipeline was isolated, removed from service and an estimated 120 cubic yards of petroleum hydrocarbon affected soils were excavated and disposed off-site. Additionally, a "pot hole" was excavated to a total depth of 23 feet bgs within the confines of the excavation. One (1) soil sample (S-1) was collected from the bottom of the pot hole and submitted for laboratory analysis of total petroleum hydrocarbons (TPH) gasoline range organics (GRO)/diesel range organics (DRO), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Based on the laboratory analysis, BTEX or TPH GRO/DRO concentrations were not identified above the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division's (OCD) Remediation Action Levels (RALs). Between March 2012 and January 2013, two (2) groundwater samples were collected from open boreholes at soil borings SB-2 and PMW-1 and analyzed for BTEX. Based on the laboratory analytical results, the groundwater samples exhibited benzene, toluene, and total xylenes concentrations which exceeded the New Mexico Water Quality Control Commission (WQCC) standards of 10 µg/L, 750 µg/L, and 620

µg/L, respectively.

Subsequent to consultation with the Navajo Nation Environmental Protection Agency (NNEPA), Southwest Geoscience (SWG) advanced eleven (11) soil borings (MW-1, MW-2, MW-3, PZ-4, PZ-5, MW-6, SB-7, and MW-8 through MW-11) at the Site during the completion of Supplemental Environmental Site Investigation (SESI) activities on April 11th through April 13th, 2013. Eight (8) of the soil borings MW-1, MW-2, MW-3, MW-6, MW-8, MW-9, MW-10 and MW-11) were converted to permanent groundwater monitoring wells and two (2) of the soil borings (P-4 and P-5) were converted to piezometers. The monitoring wells were subsequently sampled utilizing low-flow sampling techniques. Based on laboratory analyses, constituent of concern (COC) concentrations were not identified in soil above the *OCD Remediation Action Levels*. However, groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 330 µg/L, 230 µg/L, and 560 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.

During August 2013, Enterprise obtained permission from NAPI to perform a subsequent QGM event. Summarized results for the August QGM event are presented below:

- The two (2) piezometers, which were installed at total depths of 10 feet bgs near the pipeline in the vicinity of the release excavation, did not exhibit any fluid accumulations during the August 2013 sampling event.
- Groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 5,600 µg/L, 16 µg/L, and 480 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.
- The groundwater sample collected from monitoring well MW-2 exhibited a toluene concentration of 5,000 µg/L and a total Xylenes concentration of 4,100 µg/L, which exceed the New Mexico WQCC standards of 750 µg/L and 620 µg/L, respectively.

Based on the results of the August sampling event, petroleum hydrocarbon affected groundwater was identified in the vicinity of monitoring wells MW-2, MW-6, and MW-11 in exceedance of the New Mexico WQCC standard. Groundwater was encountered at the site at a minimum depth of approximately 14 feet bgs.

SWG has the following recommendations:

- Report the results of this investigation to the Navajo Nation Environmental Protection Agency, the Navajo Agricultural Products Industry, and the New Mexico OCD;
- As crop rotations allow, perform additional delineation activities to further define the extent of COCs in groundwater north/northwest of monitoring well MW-11;
- Perform quarterly groundwater monitoring of the existing monitoring well network to further evaluate the magnitude of COCs in groundwater;

- Gauge existing piezometers monthly to evaluate the accumulation of perched fluids, and sample the peizometers as part of the monitoring event if adequate fluids accumulate.
- Evaluate technologies for effective groundwater remediation at the Site.

2.0 INTRODUCTION

The Federal 2E #1 pipeline release site is located in the NAPI Field 409A, off CR 7010, in Section 2, Township 27N, Range 12W San Juan County, Navajo Nation, New Mexico.

The Site is an agricultural field irrigated by pivot irrigation. A 4-inch diameter Enterprise natural gas pipeline transects the NAPI field from southwest to northeast, where it ties in to the Federal 2E #1 (Energen Resources Corporation) meter. The general depth of the pipeline is considered to be between 6 feet to 10 feet bgs beneath the cultivated field.

On March 15, 2012, a natural gas condensate release was discovered by NAPI personnel. Enterprise was immediately notified, and the pipeline was isolated. Between March 21, 2012 and March 23, 2012, Enterprise contractors excavated petroleum hydrocarbon affected soils from the site of the release, culminating in a 16 foot by 16 foot excavation with a depth of approximately 12 feet bgs. Additionally, a "pot hole" was excavated to a total depth of 23 feet bgs within the confines of the excavation. One (1) soil sample (S-1) was collected from the bottom of the pot hole and submitted for laboratory analysis of TPH GRO/DRO and BTEX. Based on the laboratory analysis, BTEX or TPH GRO/DRO concentrations were not identified above the New Mexico EMNRD OCD RALS.

The release originated from two (2) corrosion holes identified in the pipeline, which were subsequently repaired. On March 26th and 27th, 2012, Enterprise contractors backfilled the excavation with material obtained from NAPI, and the pipeline was restored to service. Approximately 120 cubic yards of affected soil from the excavation was transported to the nearby Envirotech, Inc. landfarm near Angel Peak for treatment/disposal.

On March 30th and 31st, 2012, Animas Environmental, LLC (AES) advanced five (5) soil borings (SB-1 through SB-5) at the Site. Based on the laboratory analytical results, the soil samples collected from the soil borings did not exhibit TPH GRO/DRO or BTEX concentrations above the OCD RALS. Additionally, one (1) groundwater sample (SB-2W) was collected from an open borehole at soil boring SB-2 and analyzed for BTEX. Based on the laboratory analytical results, the groundwater sample (SB-2W) exhibited concentrations of benzene (1,500 µg/L), toluene (3,500 µg/L), and total xylenes (1,900 µg/L) which exceeded the New Mexico WQCC standards of 10 µg/L, 750 µg/L, and 620 µg/L, respectively.

On January 14th, 2013, AES collected one (1) groundwater sample from an open borehole within the former excavation footprint. The groundwater sample collected from soil boring PMW-1 was analyzed for BTEX. Based on the laboratory analytical results, groundwater sample (PMW-1) exhibited groundwater concentrations of benzene (19,000 µg/L), toluene (33,000 µg/L), ethylbenzene (1,300 µg/L) and total xylenes (10,000 µg/L) that exceeded the New Mexico WQCC standards of 10 µg/L, 750 µg/L, 750 µg/L, and 620 µg/L, respectively for these constituents.

Subsequent to consultation with the Navajo Nation Environmental Protection Agency (NNEPA), SWG advanced eleven (11) soil borings (MW-1, MW-2, MW-3, PZ-4, PZ-5, MW-6, SB-7, and MW-8 through MW-11) at the Site during the completion of SESI activities on April 11th through April 13th, 2013. Eight (8) of the soil borings MW-1, MW-2, MW-3, MW-6, MW-8, MW-9, MW-10 and MW-11) were converted to permanent groundwater monitoring

wells and two (2) of the soil borings (P-4 and P-5) were converted to piezometers. The monitoring wells were subsequently sampled utilizing low-flow sampling techniques. Based on laboratory analyses, Constituent of Concern (COC) concentrations were not identified in soil above the *OCD Remediation Action Levels*. However, groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 330 µg/L, 230 µg/L, and 560 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.

The Site location is depicted on Figure 1 of Appendix A which was reproduced from a portion of a United States Geological Survey (USGS) 7.5-minute series topographic map. A Site Vicinity Map of the subject Site and adjoining properties is included as Figure 2 of Appendix A. A Site map depicting the relative locations of monitoring wells, soil borings and piezometers is provided as Figure 3 of Appendix A.

2.1 Chronology of Events

Significant events and related activities associated with the Site, including the results of Site investigation activities and corrective action completed to date, are provided in the following table:

| | |
|---------------|--|
| March 2012 | The release was discovered by NAPI personnel and reported to Enterprise. The pipeline was isolated and the petroleum hydrocarbon affected soils in the vicinity of the release were excavated and disposed at the Envirotech, Inc. Landfarm near Angel Peak. The pipeline was repaired and returned to service and the excavation backfilled to grade. Soil borings were advanced in the vicinity of the release and the laboratory analysis of a groundwater sample collected from the bore hole of boring SB-2W exhibited concentrations of benzene, toluene, and total xylenes above the NM WQCC standards. AES prepared a letter report titled " <i>Initial Release Assessment and Abatement Report and Release Investigation Workplan</i> ", dated March 28, 2012 for submittal to NAPI management. |
| July 2012 | AES prepared a report titled " <i>Site Investigation Report Enterprise Products Company Federal 2E #1 Pipeline Release</i> ", dated July 2, 2012 – for submittal to NAPI management. |
| January 2013 | AES prepared a workplan titled " <i>Continued Site Investigation Workplan Enterprise Field Services, LLC Federal 2E #1 March 2012 Release</i> ", dated January 3, 2013 for submittal to the Navajo Environmental Protection Agency. A groundwater sample (PMW-1) was collected during an unsuccessful attempt to install monitoring wells at the site with a push-probe rig. The groundwater sample was collected from an open borehole in the suspected source area and exhibited concentrations of benzene, toluene, ethylbenzene, and total xylenes above the New Mexico WQCC groundwater standards. |
| February 2013 | Enterprise, NAPI, and AES representatives met at the Site to discuss project planning. The proposed scope of work at the site was modified to include the installation of three (3) permanent monitoring wells utilizing a hollow stem auger drilling rig to allow for the collection of representative groundwater samples. |
| April 2013 | Enterprise coordinated with NAPI and the NNEPA to initiate COC delineation activities at the site under the <i>Supplemental Site Investigation Work Plan</i> dated April 4, 2013. The resulting investigation identified benzene, toluene, and total |

xylenes in groundwater at concentrations above the New Mexico WQCC groundwater standards. The *Supplemental Environmental Site Investigation*, dated May 28, 2013, provides additional details regarding the supplemental soil and groundwater investigation.

2.2 Scope of Work

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

2.3 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.

3.0 SAMPLING PROGRAM

A groundwater sampling event was conducted on August 23rd 2013 by SWG environmental professional Kyle Summers.

Prior to initiating groundwater sampling activities, each monitoring well was gauged with an interface probe capable of detecting and measuring light non-aqueous phase liquid (LNAPL) hydrocarbons to determine accurate depth-to-water measurements and evaluate the potential presence of free-phase hydrocarbons. LNAPL was not detected during the groundwater sampling event.

Prior to sample collection, each monitoring well was micro-purged utilizing low-flow sampling techniques. Low-flow refers to the velocity with which groundwater enters the peristaltic pump or bladder 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 the 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 pumped is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The monitoring wells were purged until produced groundwater was consistent in color, clarity, pH, temperature and conductivity.

The groundwater samples were collected in laboratory prepared glassware and placed on ice in a cooler, which was secured with a custody seal. The samples were transported to a selected analytical laboratory along with a completed chain-of-custody form.

4.0 LABORATORY ANALYTICAL PROGRAM

The groundwater samples collected from the monitoring wells during the groundwater sampling event were analyzed for TPH GRO and DRO utilizing EPA method SW-846#8015, and BTEX utilizing EPA method SW-846 #8021.

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

| Analysis | Sample Type | No. of Samples | Method |
|--------------------|-------------|----------------|--------------|
| <i>TPH GRO/DRO</i> | Groundwater | 8 | SW-846# 8015 |
| <i>BTEX</i> | Groundwater | 8 | SW-846# 8021 |

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.

5.0 GROUNDWATER FLOW DIRECTION

Monitoring well top-of-casing (TOC) elevations were previously surveyed and referenced to Section corner benchmarks. Groundwater measurements were collected utilizing an interface probe capable of detecting the presence of LNAPL. LNAPL accumulations were not observed in the monitoring wells during the August 2013 monitoring event.

Based on the groundwater elevations measured during the August 2013 monitoring event, the groundwater at the Site flows generally to the north-northwest across the Site, following the surface topography and what appears to be a buried drainage/erosional

feature at a gradient of approximately 0.04 to 0.05 feet/foot.

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

6.0 SITE RANKING and PROPOSED CLEANUP GOALS

The Site is under the jurisdiction of the NNEPA. In the absence of published NNEPA regulatory guidance pertaining specifically to oil & gas production and gathering, Enterprise was referred to New Mexico OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically New Mexico Administrative Code (NMAC) 19.15.30 *Remediation*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Enterprise utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

| Ranking Criteria | | | Ranking Score |
|--|-------------------|----|---------------|
| Depth to Groundwater | <50 feet | 20 | 20 |
| | 50 to 99 feet | 10 | |
| | >100 feet | 0 | |
| Wellhead Protection Area • <1,000 feet from a water source, or; <200 feet from private domestic water source. | Yes | 20 | 0 |
| | No | 0 | |
| Distance to Surface Water Body | <200 feet | 20 | 0 |
| | 200 to 1,000 feet | 10 | |
| | >1,000 feet | 0 | |
| Total Ranking Score | | | 20 |

Based on SWG's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 20. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is <50 feet at the Site.

Based on a Total Ranking Score of 20, cleanup goals for soil located at the Site include: 10 mg/Kg for benzene, 50 mg/Kg for total BTEX and 100 mg/Kg for TPH GRO/DRO.

In addition, cleanup goals for groundwater located at the Site include the NMWQCC *Water Quality Standards* of: 10 µg/L for benzene, 750 µg/L for toluene, 750 µg/L for ethylbenzene, and 620 µg/L for xylenes.

7.0 DATA EVALUATION

The Site is under the jurisdiction of the NNEPA. SWG utilized the NMWQCC *Water Quality Standards* of: 10 µg/L for benzene, 750 µg/L for toluene, 750 µg/L for ethylbenzene, and 620 µg/L for xylenes.

7.1 Quality Assurance / Quality Control

All non-disposable sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before the collection of each sample.

Samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were relinquished to Hall Environmental Analytical Laboratory (HEAL) in Albuquerque, New Mexico for standard turnaround.

HEAL performed the analyses of samples under an adequate and documented quality assurance program to meet the project and data quality objectives. The laboratory's quality assurance program is generally consistent the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. In addition, the data generated by HEAL meet the intralaboratory performance standards for the selected analytical method and the performance standards are sufficient to meet the bias, precision, sensitivity, representativeness, comparability, and completeness, as specified in the project data quality objectives. Sample results that resulted in Data Qualifier flags are listed below.

| Sample ID | Data Qualifier Flag | Comments/Reactions |
|--|---------------------|--------------------|
| None of the August 2013 groundwater samples were flagged for data quality concerns | None | None |

7.2 Groundwater Samples

SWG compared BTEX concentrations or laboratory Reporting Limits (RLs) associated with the groundwater samples collected from monitoring wells during the August 2013 sampling event to the New Mexico WQCC *Groundwater Quality Standards*.

Benzene, Toluene, Ethylbenzene, and Xylenes

The groundwater samples collected from the monitoring wells MW-1, MW-3, MW-8, MW-9, and MW-10 did not exhibit benzene concentrations above the WQCC *Groundwater Quality Standard* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 exhibited benzene concentrations of 5,600 µg/L, 16 µg/L, and 480 µg/L,

respectively, which exceed the WQCC *Groundwater Quality Standard* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-11 did not exhibit toluene concentrations above the laboratory RLS, which are below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater sample collected from monitoring well MW-2 exhibited a toluene concentration of 5,000 µg/L, which exceeds the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-11 did not exhibit ethylbenzene concentrations above the laboratory RLS, which are below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater sample collected from monitoring well MW-2 exhibited a ethylbenzene concentration of 240 µg/L, which is below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-11 did not exhibit xylenes concentrations above the WQCC *Groundwater Quality Standard* of 620 µg/L.

The groundwater samples collected from monitoring well MW-2 exhibited a total xylene concentration of 4,100 µg/L which exceeds the WQCC *Groundwater Quality Standard* of 620 µg/L.

TPH GRO/DRO

The groundwater samples collected from monitoring wells MW-1 through MW-3, MW-6, and MW-8 through MW-11 exhibited TPH GRO concentrations ranging from below laboratory RLS to 37 µg/L. TPH DRO concentrations ranged from below laboratory RLS to 2.1 µg/L.

8.0 FINDINGS

During August 2013, Enterprise obtained permission from NAPI to perform a subsequent QGM event. Summarized results for the August QGM event are presented below:

- The two (2) piezometers, which were installed at total depths of 10 feet bgs near the pipeline in the vicinity of the release excavation, did not exhibit any fluid accumulations during the August 2013 sampling event.
- Groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 5,600 µg/L, 16 µg/L, and 480 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.
- The groundwater sample collected from monitoring well MW-2 exhibited a toluene concentration of 5,000 µg/L and a total Xylenes concentration of

4,100 µg/L, which exceed the New Mexico WQCC standards of 750 µg/L and 620 µg/L, respectively.

- The COC concentrations at monitoring well MW-2 are significantly higher for the August 2013 event than those reported for the April 2013 sampling event. Shortly prior to the April 2013 event, the monitoring wells were developed by bailing/purging, and it is possible that groundwater at the monitoring well had not returned to equilibrium prior to the initial sampling activities.

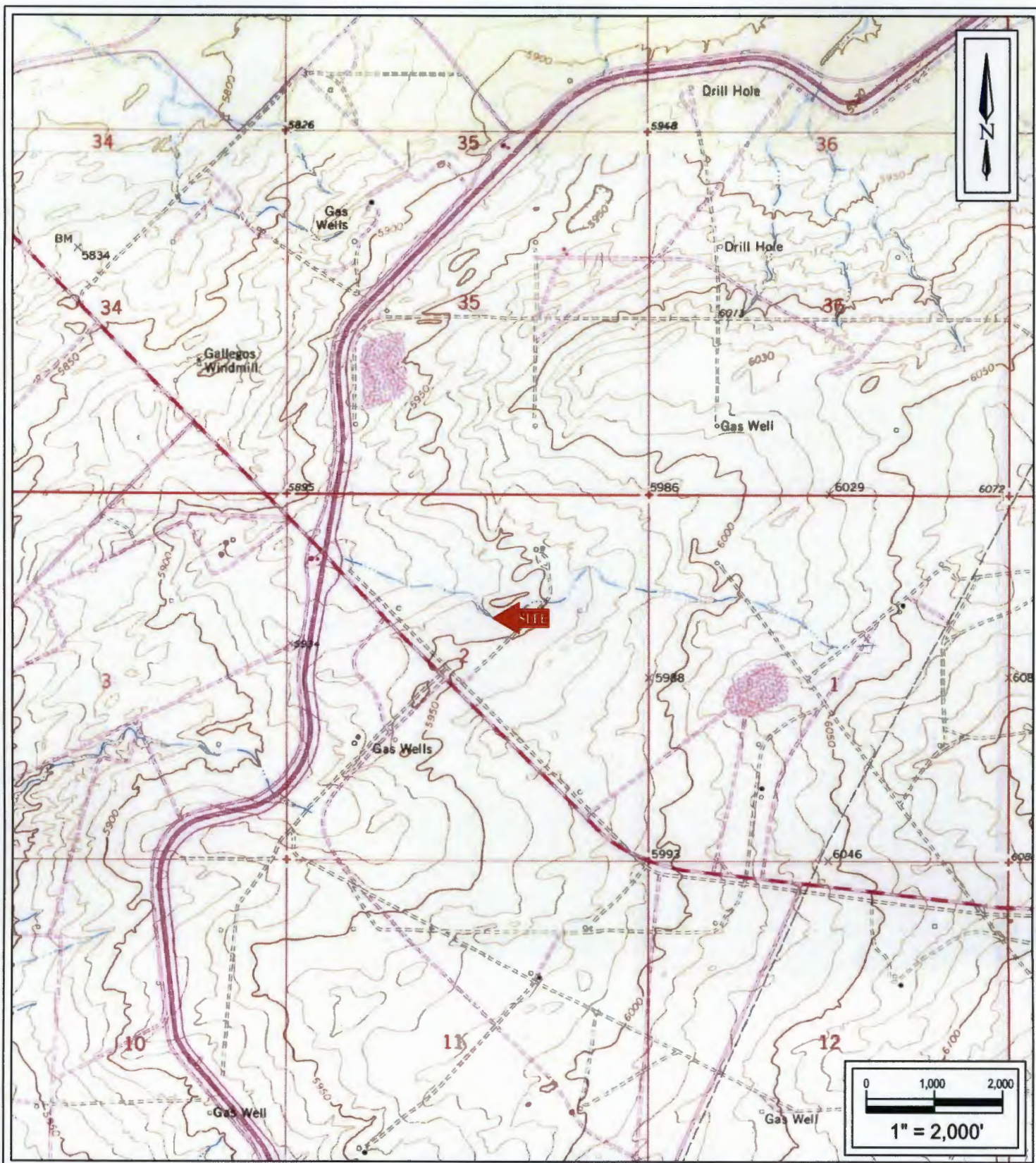
9.0 RECOMMENDATIONS

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

- Report the results of this investigation to the Navajo Nation Environmental Protection Agency, the Navajo Agricultural Products Industry, and the New Mexico OCD;
- As crop rotations allow, perform additional delineation activities to further define the extent of COCs in groundwater north/northwest of monitoring well MW-11;
- Continue quarterly groundwater monitoring of the existing monitoring well network to further evaluate the magnitude of COCs in groundwater;
- Gauge existing piezometers monthly to evaluate the accumulation of perched fluids, and sample the piezometers as part of the monitoring event if adequate fluids accumulate;
- Evaluate technologies for effective groundwater remediation at the Site after delineation activities are complete.

APPENDIX A

Figures



Enterprise Field Services, LLC
 Federal 2E #1 Pipeline Release
 SW1/4 NE 1/4 S2 T27N R12W
 N36° 36' 24.52"; W108° 04' 48.47"
 San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
 GEOSCIENCE

Figure 1
Topographic Map
 Gallegos Trading Post &
 Horn Canyon
 NM Quadrangles
 Contour Interval = 10 Feet
 1965

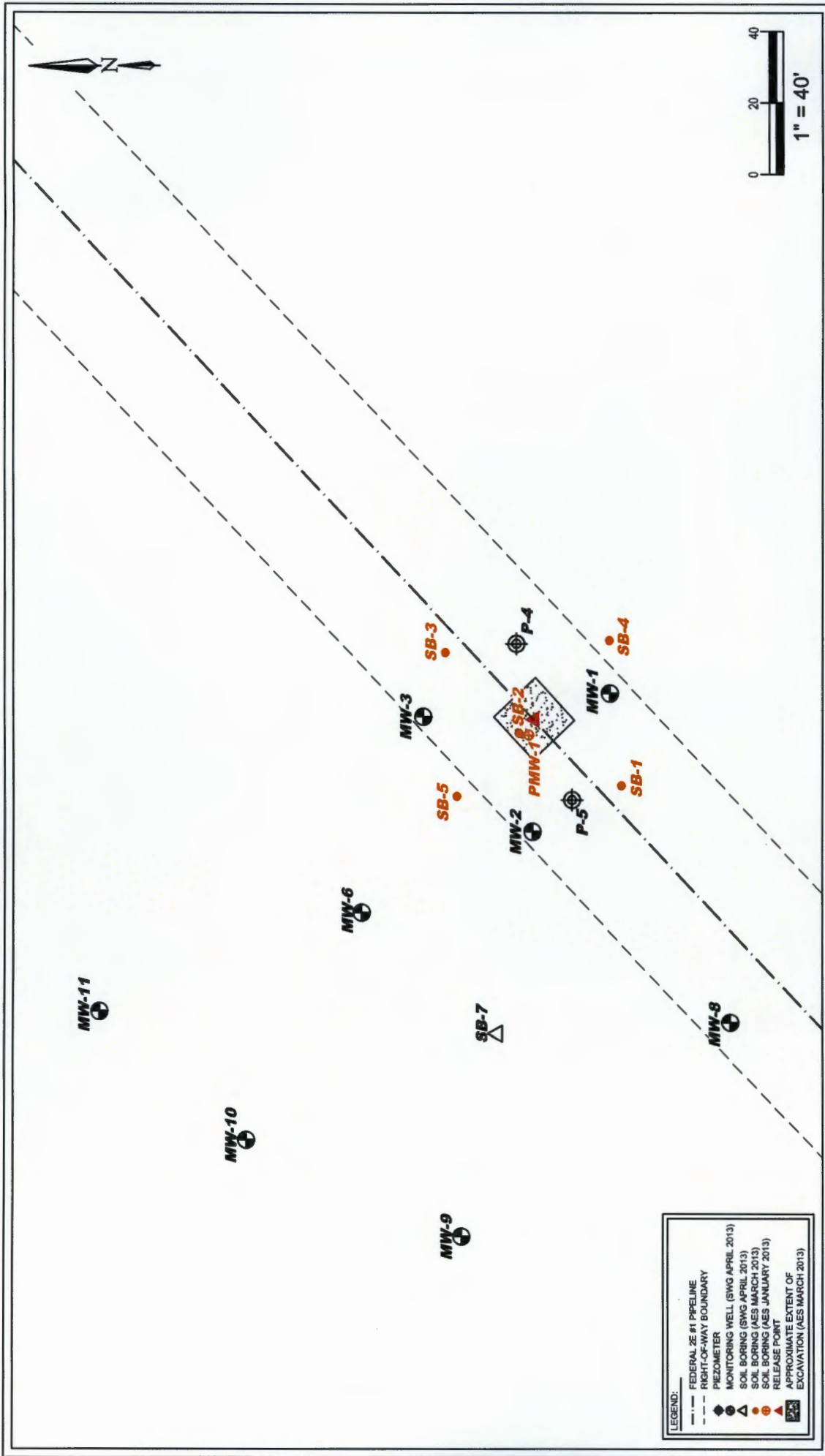


Enterprise Field Services, LLC
Federal 2E #1 Pipeline Release
SW1/4 NE 1/4 S2 T27N R12W
N36° 36' 24.52"; W108° 04' 48.47"
San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
GEOSCIENCE

Figure 2
Site Vicinity
Map



Southwest
GEOSCIENCE

Figure 3
Site Map

Enterprise Field Services, LLC
Federal 2E #1 Pipeline Release
SW1/4 NE 1/4 S2 T27N R12W
N36° 36' 24.52"; W108° 04' 48.47"
San Juan County, New Mexico

SWG Project No. 0413G002

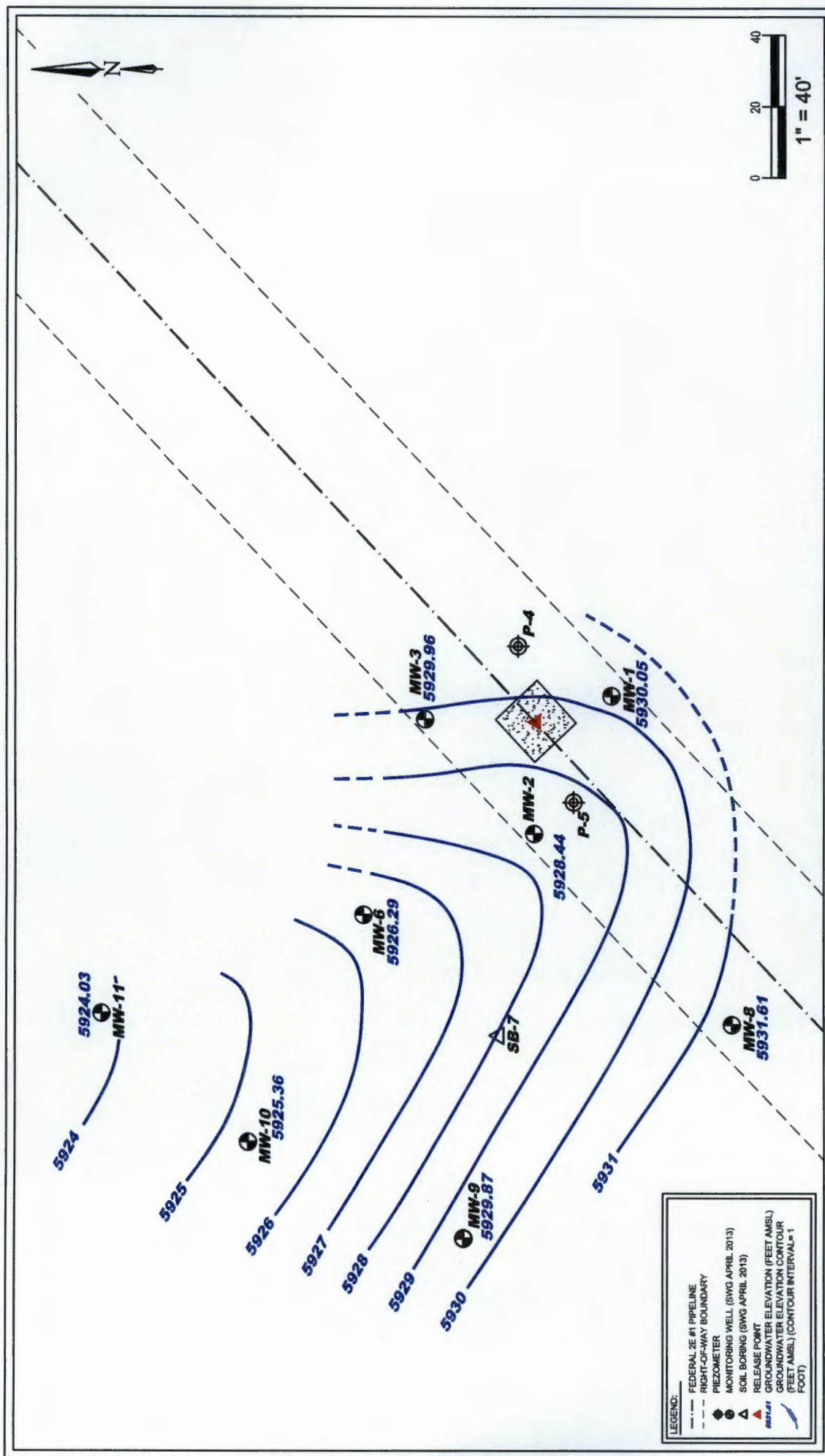
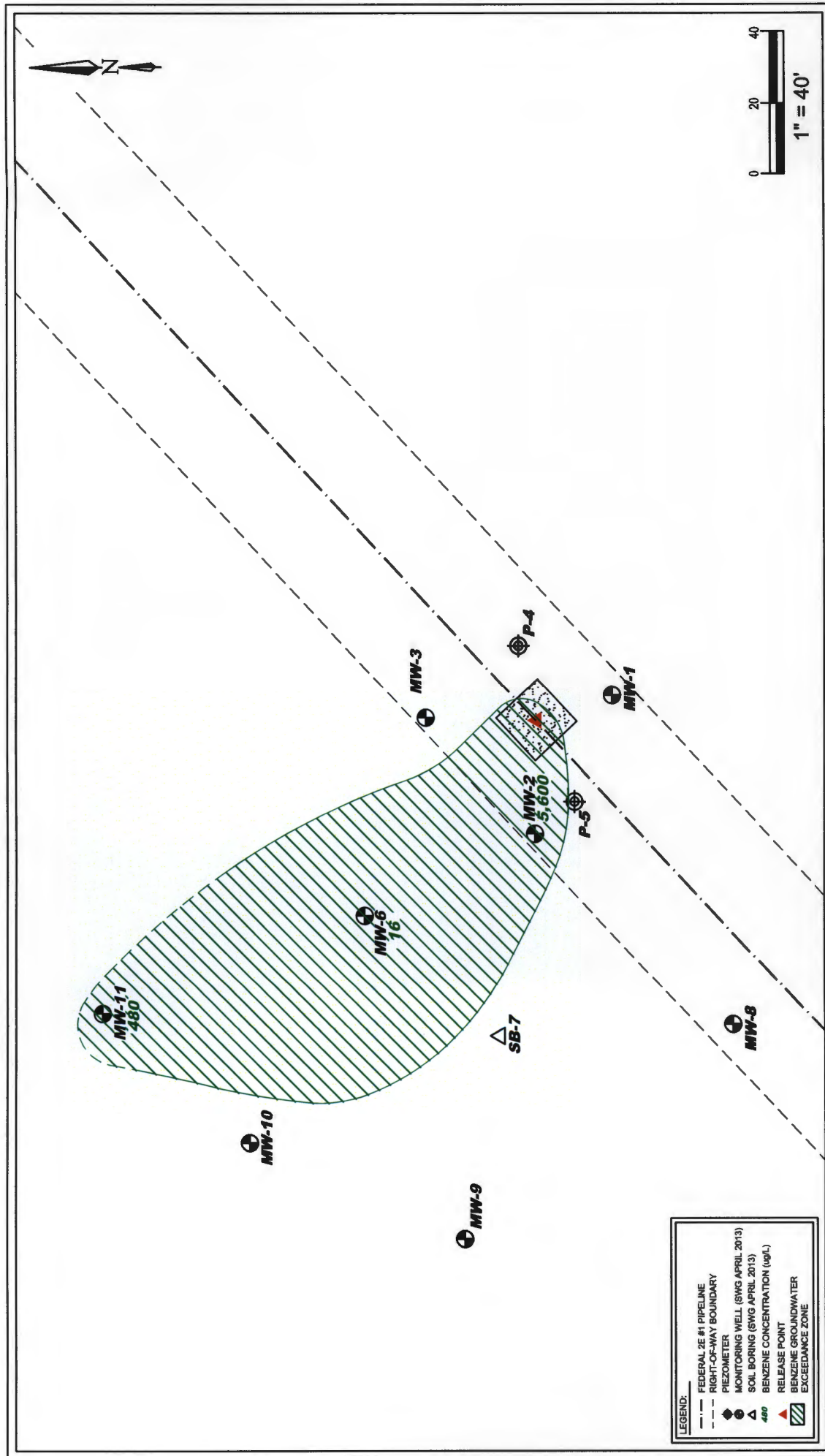


Figure 4
Groundwater
Gradient Map
August 2013

Southwest
GEOSCIENCE

Enterprise Field Services, LLC
Federal 2E #1 Pipeline Release
SW1/4 NE 1/4 S2 T27N R12W
N36° 36' 24.52"; W108° 04' 48.47"
San Juan County, New Mexico

SWG Project No. 0413G002



Enterprise Field Services, LLC
 Federal 2E #1 Pipeline Release
 SW1/4 NE 1/4 S2 T27N R12W
 N36° 36' 24.52"; W108° 04' 48.47"
 San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
 GEOSCIENCE

Figure 5
 Benzene Groundwater
 Exceedance Zone
 August 2013

APPENDIX B

Tables

TABLE 1
Federal 2E #1
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-1 | 4/17/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| | 8/23/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| MW-2 | 4/18/2013 | 330 | 41 | 2.5 | 45 | 1.4 | <1.0 |
| | 8/23/2013 | 5,600 | 5,000 | 240 | 4,100 | 37 | 2.1 |
| MW-3 | 4/18/2013 | <1.0 | <1.0 | <1.0 | <2.0 | 0.093 | <1.0 |
| | 8/23/2013 | 1.4 | <1.0 | <1.0 | <2.0 | 1.7 | <1.0 |
| MW-6 | 4/18/2013 | 230 | <1.0 | <1.0 | <2.0 | 2.3 | <1.0 |
| | 8/23/2013 | 16 | <1.0 | <1.0 | <2.0 | 0.16 | <1.0 |
| MW-8 | 4/18/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| | 8/23/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| MW-9 | 4/18/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| | 8/23/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| MW-10 | 4/18/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| | 8/23/2013 | <1.0 | <1.0 | <1.0 | <2.0 | <0.050 | <1.0 |
| MW-11 | 4/18/2013 | 560 | <1.0 | <1.0 | 79 | 1.9 | <1.0 |
| | 8/23/2013 | 480 | <1.0 | <1.0 | 10 | 1.4 | <1.0 |

NE = Not Established

Bold and yellow highlights indicate concentrations in excess of applicable regulatory limits

TABLE 2
Federal 2E #1
Groundwater Elevations

| Monitoring Well ID | Measurement Date | Top-of-Casing Elevation (feet) | Depth to PSH (feet) | Depth to Water (feet) | PSH Thickness (feet) | Corrected Groundwater Elevation ¹ |
|--------------------|------------------|--------------------------------------|------------------------|--------------------------|-------------------------|---|
| MW-1 | 4.18.13 | 5947.56 | ND | 17.90 | 0.0 | 5929.66 |
| | 8.23.13 | 5947.56 | ND | 17.51 | 0.0 | 5930.05 |
| MW-2 | 4.18.13 | 5947.13 | ND | 19.47 | 0.0 | 5927.66 |
| | 8.23.13 | 5947.13 | ND | 18.69 | 0.0 | 5928.44 |
| MW-3 | 4.18.13 | 5947.99 | ND | 19.91 | 0.0 | 5928.08 |
| | 8.23.13 | 5947.99 | ND | 18.03 | 0.0 | 5929.96 |
| P-4 | 4.18.13 | 5947.92 | ND | dry | dry | NA |
| | 8.23.13 | 5947.92 | ND | dry | dry | NA |
| P-5 | 4.18.13 | 5947.46 | ND | dry | dry | NA |
| | 8.23.13 | 5947.46 | ND | dry | dry | NA |
| MW-6 | 4.18.13 | 5946.23 | ND | 20.88 | 0.0 | 5925.35 |
| | 8.23.13 | 5946.23 | ND | 19.94 | 0.0 | 5926.29 |
| MW-8 | 4.18.13 | 5947.99 | ND | 17.06 | 0.0 | 5930.93 |
| | 8.23.13 | 5947.99 | ND | 16.38 | 0.0 | 5931.61 |
| MW-9 | 4.18.13 | 5949.04 | ND | 20.13 | 0.0 | 5928.91 |
| | 8.23.13 | 5949.04 | ND | 19.17 | 0.0 | 5929.87 |
| MW-10 | 4.18.13 | 5947.14 | ND | 22.61 | 0.0 | 5924.53 |
| | 8.23.13 | 5947.14 | ND | 21.78 | 0.0 | 5925.36 |
| MW-11 | 4.18.13 | 5945.73 | ND | 22.60 | 0.0 | 5923.13 |
| | 8.23.13 | 5945.73 | ND | 21.70 | 0.0 | 5924.03 |

NA - Not Applicable

ND - Not Detected

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*

September 04, 2013

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

RE: Fed 2E #1

OrderNo.: 1308B01

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/24/2013 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-8

Project: Fed 2E #1

Collection Date: 8/23/2013 9:00:00 AM

Lab ID: 1308B01-001

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 8:32:17 PM | 9016 |
| Surr: DNOP | 99.4 | 70.1-140 | | %REC | 1 | 8/27/2013 8:32:17 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | ND | 0.050 | | mg/L | 1 | 8/27/2013 5:34:25 PM | R12934 |
| Surr: BFB | 89.5 | 51.5-151 | | %REC | 1 | 8/27/2013 5:34:25 PM | R12934 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 5:34:25 PM | R12934 |
| Toluene | ND | 1.0 | | µg/L | 1 | 8/27/2013 5:34:25 PM | R12934 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 5:34:25 PM | R12934 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 8/27/2013 5:34:25 PM | R12934 |
| Surr: 4-Bromofluorobenzene | 102 | 69.4-129 | | %REC | 1 | 8/27/2013 5:34:25 PM | R12934 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-9

Project: Fed 2E #1

Collection Date: 8/23/2013 9:50:00 AM

Lab ID: 1308B01-002

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 8:54:04 PM | 9016 |
| Surr: DNOP | 104 | 70.1-140 | | %REC | 1 | 8/27/2013 8:54:04 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | ND | 0.050 | | mg/L | 1 | 8/27/2013 6:03:05 PM | R12934 |
| Surr: BFB | 84.9 | 51.5-151 | | %REC | 1 | 8/27/2013 6:03:05 PM | R12934 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:03:05 PM | R12934 |
| Toluene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:03:05 PM | R12934 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:03:05 PM | R12934 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 8/27/2013 6:03:05 PM | R12934 |
| Surr: 4-Bromofluorobenzene | 95.8 | 69.4-129 | | %REC | 1 | 8/27/2013 6:03:05 PM | R12934 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-10

Project: Fed 2E #1

Collection Date: 8/23/2013 10:40:00 AM

Lab ID: 1308B01-003

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 9:15:45 PM | 9016 |
| Surr: DNOP | 104 | 70.1-140 | | %REC | 1 | 8/27/2013 9:15:45 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | ND | 0.050 | | mg/L | 1 | 8/27/2013 6:31:37 PM | R12934 |
| Surr: BFB | 89.3 | 51.5-151 | | %REC | 1 | 8/27/2013 6:31:37 PM | R12934 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:31:37 PM | R12934 |
| Toluene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:31:37 PM | R12934 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 6:31:37 PM | R12934 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 8/27/2013 6:31:37 PM | R12934 |
| Surr: 4-Bromofluorobenzene | 101 | 69.4-129 | | %REC | 1 | 8/27/2013 6:31:37 PM | R12934 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-1

Project: Fed 2E #1

Collection Date: 8/23/2013 11:35:00 AM

Lab ID: 1308B01-004

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 9:37:37 PM | 9016 |
| Surr: DNOP | 107 | 70.1-140 | | %REC | 1 | 8/27/2013 9:37:37 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | ND | 0.050 | | mg/L | 1 | 8/27/2013 7:00:21 PM | R12934 |
| Surr: BFB | 86.2 | 51.5-151 | | %REC | 1 | 8/27/2013 7:00:21 PM | R12934 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 7:00:21 PM | R12934 |
| Toluene | ND | 1.0 | | µg/L | 1 | 8/27/2013 7:00:21 PM | R12934 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 7:00:21 PM | R12934 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 8/27/2013 7:00:21 PM | R12934 |
| Surr: 4-Bromofluorobenzene | 97.2 | 69.4-129 | | %REC | 1 | 8/27/2013 7:00:21 PM | R12934 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-3

Project: Fed 2E #1

Collection Date: 8/23/2013 12:20:00 PM

Lab ID: 1308B01-005

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 9:59:22 PM | 9016 |
| Surr: DNOP | 102 | 70.1-140 | | %REC | 1 | 8/27/2013 9:59:22 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | 1.7 | 0.050 | | mg/L | 1 | 8/27/2013 7:29:05 PM | R12934 |
| Surr: BFB | 86.5 | 51.5-151 | | %REC | 1 | 8/27/2013 7:29:05 PM | R12934 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | 1.4 | 1.0 | | µg/L | 1 | 8/27/2013 7:29:05 PM | R12934 |
| Toluene | ND | 1.0 | | µg/L | 1 | 8/27/2013 7:29:05 PM | R12934 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 8/27/2013 7:29:05 PM | R12934 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 8/27/2013 7:29:05 PM | R12934 |
| Surr: 4-Bromofluorobenzene | 100 | 69.4-129 | | %REC | 1 | 8/27/2013 7:29:05 PM | R12934 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-2

Project: Fed 2E #1

Collection Date: 8/23/2013 1:00:00 PM

Lab ID: 1308B01-006

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|--------|----------|------|-------|-----|-----------------------|--------------|
| EPA METHOD 8015D: DIESEL RANGE | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | 2.1 | 1.0 | | mg/L | 1 | 8/27/2013 10:21:12 PM | 9016 |
| Surr: DNOP | 108 | 70.1-140 | | %REC | 1 | 8/27/2013 10:21:12 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | 37 | 5.0 | | mg/L | 100 | 9/3/2013 5:14:42 PM | R13043 |
| Surr: BFB | 97.6 | 51.5-151 | | %REC | 100 | 9/3/2013 5:14:42 PM | R13043 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | 5600 | 100 | | µg/L | 100 | 9/3/2013 5:14:42 PM | R13043 |
| Toluene | 5000 | 100 | | µg/L | 100 | 9/3/2013 5:14:42 PM | R13043 |
| Ethylbenzene | 240 | 100 | | µg/L | 100 | 9/3/2013 5:14:42 PM | R13043 |
| Xylenes, Total | 4100 | 200 | | µg/L | 100 | 9/3/2013 5:14:42 PM | R13043 |
| Surr: 4-Bromofluorobenzene | 107 | 69.4-129 | | %REC | 100 | 9/3/2013 5:14:42 PM | R13043 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-6

Project: Fed 2E #1

Collection Date: 8/23/2013 1:50:00 PM

Lab ID: 1308B01-007

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 11:04:44 PM | 9016 |
| Surr: DNOP | 114 | 70.1-140 | | %REC | 1 | 8/27/2013 11:04:44 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | 0.16 | 0.050 | | mg/L | 1 | 9/3/2013 6:15:23 PM | R13043 |
| Surr: BFB | 94.3 | 51.5-151 | | %REC | 1 | 9/3/2013 6:15:23 PM | R13043 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | 16 | 1.0 | | µg/L | 1 | 9/3/2013 6:15:23 PM | R13043 |
| Toluene | ND | 1.0 | | µg/L | 1 | 9/3/2013 6:15:23 PM | R13043 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 9/3/2013 6:15:23 PM | R13043 |
| Xylenes, Total | ND | 2.0 | | µg/L | 1 | 9/3/2013 6:15:23 PM | R13043 |
| Surr: 4-Bromofluorobenzene | 103 | 69.4-129 | | %REC | 1 | 9/3/2013 6:15:23 PM | R13043 |

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 1308B01

Date Reported: 9/4/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-11

Project: Fed 2E #1

Collection Date: 8/23/2013 2:35:00 PM

Lab ID: 1308B01-008

Matrix: AQUEOUS

Received Date: 8/24/2013 10:20:00 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 | 8/27/2013 11:26:26 PM | 9016 |
| Surr: DNOP | 101 | 70.1-140 | | %REC | 1 | 8/27/2013 11:26:26 PM | 9016 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: RAA |
| Gasoline Range Organics (GRO) | 1.4 | 0.050 | | mg/L | 1 | 9/3/2013 7:46:09 PM | R13043 |
| Surr: BFB | 109 | 51.5-151 | | %REC | 1 | 9/3/2013 7:46:09 PM | R13043 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: RAA |
| Benzene | 480 | 10 | | µg/L | 10 | 9/3/2013 7:15:52 PM | R13043 |
| Toluene | ND | 1.0 | | µg/L | 1 | 9/3/2013 7:46:09 PM | R13043 |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 9/3/2013 7:46:09 PM | R13043 |
| Xylenes, Total | 10 | 2.0 | | µg/L | 1 | 9/3/2013 7:46:09 PM | R13043 |
| Surr: 4-Bromofluorobenzene | 115 | 69.4-129 | | %REC | 1 | 9/3/2013 7:46:09 PM | R13043 |

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#: 1308B01

04-Sep-13

Client: Southwest Geoscience

Project: Fed 2E #1

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-9016 | SampType: | MBLK | TestCode: | EPA Method 8015D: Diesel Range | | | | | |
| Client ID: | PBW | Batch ID: | 9016 | RunNo: | 12910 | | | | | |
| Prep Date: | 8/23/2013 | Analysis Date: | 8/27/2013 | SeqNo: | 368449 | 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 | 0.95 | | 1.000 | | 95.2 | 70.1 | 140 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-9016 | SampType: | LCS | TestCode: | EPA Method 8015D: Diesel Range | | | | | |
| Client ID: | LCSW | Batch ID: | 9016 | RunNo: | 12910 | | | | | |
| Prep Date: | 8/23/2013 | Analysis Date: | 8/27/2013 | SeqNo: | 368450 | Units: | mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 5.2 | 1.0 | 5.000 | 0 | 105 | 89.1 | 151 | | | |
| Surr: DNOP | 0.53 | | 0.5000 | | 107 | 70.1 | 140 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|--------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCSD-9016 | SampType: | LCS | TestCode: | EPA Method 8015D: Diesel Range | | | | | |
| Client ID: | LCSW | Batch ID: | 9016 | RunNo: | 12910 | | | | | |
| Prep Date: | 8/23/2013 | Analysis Date: | 8/27/2013 | SeqNo: | 368451 | Units: | mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 4.6 | 1.0 | 5.000 | 0 | 91.1 | 89.1 | 151 | | | |
| Surr: DNOP | 0.49 | | 0.5000 | | 97.1 | 70.1 | 140 | | | |

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#: 1308B01

04-Sep-13

Client: Southwest Geoscience

Project: Fed 2E #1

| | | | | | | | | | | |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBW | Batch ID: | R12934 | RunNo: | 12934 | | | | | |
| Prep Date: | | Analysis Date: | 8/27/2013 | SeqNo: | 368946 | Units: | mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 0.050 | | | | | | | | |
| Surr: BFB | 17 | | 20.00 | | 83.6 | 51.5 | 151 | | | |

| | | | | | | | | | | |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 2.5UG GRO LCS | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSW | Batch ID: | R12934 | RunNo: | 12934 | | | | | |
| Prep Date: | | Analysis Date: | 8/27/2013 | SeqNo: | 368947 | 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 | 99.9 | 80 | 120 | | | |
| Surr: BFB | 19 | | 20.00 | | 93.0 | 51.5 | 151 | | | |

| | | | | | | | | | | |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBW | Batch ID: | R13043 | RunNo: | 13043 | | | | | |
| Prep Date: | | Analysis Date: | 9/3/2013 | SeqNo: | 372413 | 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 | | 94.3 | 51.5 | 151 | | | |

| | | | | | | | | | | |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 2.5UG GRO LCS | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSW | Batch ID: | R13043 | RunNo: | 13043 | | | | | |
| Prep Date: | | Analysis Date: | 9/3/2013 | SeqNo: | 372414 | Units: | mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 0.47 | 0.050 | 0.5000 | 0 | 94.9 | 80 | 120 | | | |
| Surr: BFB | 20 | | 20.00 | | 101 | 51.5 | 151 | | | |

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#: 1308B01

04-Sep-13

Client: Southwest Geoscience

Project: Fed 2E #1

| | | | | | | | | | | |
|----------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID | 5ML RB | SampType: MBLK | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBW | Batch ID: R12934 | | | RunNo: 12934 | | | | | |
| Prep Date: | | Analysis Date: 8/27/2013 | | | SeqNo: 368967 | | 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 | 69.4 | 129 | | | |

| | | | | | | | | | | |
|----------------------------|----------------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | 100NG BTEX LCS | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSW | Batch ID: | R12934 | RunNo: | 12934 | | | | | |
| Prep Date: | | Analysis Date: | 8/27/2013 | SeqNo: | 368968 | 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 | 103 | 80 | 120 | | | |
| Ethylbenzene | 20 | 1.0 | 20.00 | 0 | 102 | 80 | 120 | | | |
| Xylenes, Total | 61 | 2.0 | 60.00 | 0 | 102 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 20 | | 20.00 | | 98.1 | 69.4 | 129 | | | |

| | | | | | | | | | | |
|----------------------------|----------------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | 1308B01-001AMS | SampType: | MS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | MW-8 | Batch ID: | R12934 | RunNo: | 12934 | | | | | |
| Prep Date: | | Analysis Date: | 8/27/2013 | SeqNo: | 368973 | Units: | µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 18 | 1.0 | 20.00 | 0 | 92.2 | 73.4 | 119 | | | |
| Toluene | 18 | 1.0 | 20.00 | 0 | 91.3 | 80 | 120 | | | |
| Ethylbenzene | 18 | 1.0 | 20.00 | 0 | 90.7 | 80 | 120 | | | |
| Xylenes, Total | 54 | 2.0 | 60.00 | 0 | 89.8 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 20 | | 20.00 | | 101 | 69.4 | 129 | | | |

| | | | | | | | | | | | |
|----------------------------|-----------------|-----|----------------|-------------|------|-----------|-----------------------------|------|----------|------|--|
| Sample ID | 1308B01-001AMSD | | SampType: | MSD | | TestCode: | EPA Method 8021B: Volatiles | | | | |
| Client ID: | MW-8 | | Batch ID: | R12934 | | RunNo: | 12934 | | | | |
| Prep Date: | | | Analysis Date: | 8/27/2013 | | SeqNo: | 368974 | | Units: | µg/L | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Benzene | 18 | 1.0 | 20.00 | 0 | 88.9 | 73.4 | 119 | 3.61 | 20 | | |
| Toluene | 17 | 1.0 | 20.00 | 0 | 87.3 | 80 | 120 | 4.54 | 20 | | |
| Ethylbenzene | 18 | 1.0 | 20.00 | 0 | 88.0 | 80 | 120 | 2.99 | 20 | | |
| Xylenes, Total | 53 | 2.0 | 60.00 | 0 | 87.7 | 80 | 120 | 2.38 | 20 | | |
| Surr: 4-Bromofluorobenzene | 19 | | 20.00 | | 97.2 | 69.4 | 129 | 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#: 1308B01

04-Sep-13

Client: Southwest Geoscience

Project: Fed 2E #1

| | | | | | | | | | | |
|----------------------------|--------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBW | Batch ID: | R13043 | RunNo: | 13043 | | | | | |
| Prep Date: | | Analysis Date: | 9/3/2013 | SeqNo: | 372462 | Units: | µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 1.0 | | | | | | | | |
| Toluene | ND | 1.0 | | | | | | | | |
| Ethylbenzene | ND | 1.0 | | | | | | | | |
| Xylenes, Total | ND | 2.0 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 21 | | 20.00 | | 107 | 69.4 | 129 | | | |

| | | | | | | | | | | |
|----------------------------|----------------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | 100NG BTEX LCS | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSW | Batch ID: | R13043 | RunNo: | 13043 | | | | | |
| Prep Date: | | Analysis Date: | 9/3/2013 | SeqNo: | 372463 | Units: | µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 20 | 1.0 | 20.00 | 0 | 101 | 80 | 120 | | | |
| Toluene | 20 | 1.0 | 20.00 | 0 | 102 | 80 | 120 | | | |
| Ethylbenzene | 20 | 1.0 | 20.00 | 0 | 101 | 80 | 120 | | | |
| Xylenes, Total | 63 | 2.0 | 60.00 | 0 | 106 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 22 | | 20.00 | | 110 | 69.4 | 129 | | | |

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



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

Sample Log-In Check List

Client Name: Southwest Geoscience A

Work Order Number: 1308B01

RcptNo: 1

Received by/date:

AF

08/24/13

Logged By: Michelle Garcia

8/24/2013 10:20:00 AM

Michelle Garcia

Completed By: Michelle Garcia

8/24/2013 12:20:21 PM

Michelle Garcia

Reviewed By:

MG/LM

08/26/13

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 $>0^{\circ}\text{C}$ 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 ☐
- 003- ONE VOA ARRIVED BROKEN. 08/27/13
12. Does paperwork match bottle labels? Yes ☒ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
- (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐ Checked by: ☐
- (If no, notify customer for authorization.)

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 $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 3.8 | Good | Yes | | | |

CHAIN OF CUSTODY RECORD

| | | | | | | | |
|--|--|--|--|--|--|---|--|
| <h2 style="margin: 0;">Southwest GEOSCIENCE</h2> <p style="margin: 0;">Environmental & Hydrogeologic Consultants</p> | | Laboratory: <u>Hal /</u> Address: <u>Alto,</u> Contact: <u>Fremman</u> Phone: _____ PO/SO #: <u>0413G002</u> | | ANALYSIS REQUESTED <div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); display: inline-block;"> 12/13/08 8/24/13 TTX GRD/RD 2015 </div> | | Lab use only Due Date: _____ Temp of coolers when received (C°): <u>3.8</u> 1 2 3 4 5 Page <u>1</u> of <u>1</u> | |
| | | Project Manager <u>Summers</u> Sample's Name <u>Ryle Summers</u> Sample's Signature: _____ | | Lab Sample ID (Lab Use Only) <div style="display: flex; justify-content: space-between;"> 1308801-001 -002 -003 -004 -005 -006 -007 -008 </div> | | | |
| Project No. <u>0413G002</u> Project Name <u>Red 2E #1</u> | | | | | | | |

| Matrix | Date | Time | Identifying Marks of Sample(s) | Depth | Depth | Depth | VOA | AVG 1 L. | 250 ml | P/O |
|--------|---------|------|--------------------------------|-------|-------|-------|-----|----------|--------|-----|
| W | 8/23/13 | 0900 | MW-8 | | | | 5 | | | |
| | | 0950 | MW-9 | | | | | | | |
| | | 1040 | MW-10 | | | | | | | |
| | | 1135 | MW-11 | | | | | | | |
| | | 1220 | MW-12 | | | | | | | |
| | | 1300 | MW-13 | | | | | | | |
| | | 1350 | MW-14 | | | | | | | |
| | | 1435 | MW-15 | | | | | | | |
| | | | NES | | | | | | | |

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

| | | | | | |
|-----------------------------|----------------------|-------------------|-------------------------|----------------------|--------------------|
| Relinquished by (Signature) | Date: <u>8/23/13</u> | Time: <u>1557</u> | Received by (Signature) | Date: <u>8/23/13</u> | Time: <u>1557</u> |
| Relinquished by (Signature) | Date: <u>8/23/13</u> | Time: <u>1756</u> | Received by (Signature) | Date: <u>8/24/13</u> | Time: <u>10:20</u> |
| Relinquished by (Signature) | Date: _____ | Time: _____ | Received by (Signature) | Date: _____ | Time: _____ |
| Relinquished by (Signature) | Date: _____ | Time: _____ | Received by (Signature) | Date: _____ | Time: _____ |

Matrix Container: WW - Wastewater VOA - 40 ml vial

W - Water SD - Solid 250 ml - Glass wide mouth

A/G - Amber / Or Glass 1 Liter

SL - sludge O - Oil