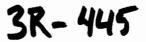
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April 1, 2014

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

Re: Julander Federal #1E

Groundwater Investigation Report

Dear Mr. von Gonten:

Enclosed is a Site Investigation Report prepared by Animas Environmental Services concerning the groundwater investigation work conducted on the subject well location. The original Groundwater Investigation Work Plan was submitted to the New Mexico Oil Conservation Division on April 19, 2013 and updated on June 6, 2013.

If there are any questions or concerns with this submittal, please contact me at 505-324-4131.

Sincerely,

Ed Hasely

Sr. Environmental Engineer

Energen Resources

El Hasel

Attachments: Site Investigation Report (3/26/14)

Cc: **HSE File**

> Facility File Correspondence



Prepared for:

Ed Hasely Energen Resources Corporation 2110 Afton Place Farmington, New Mexico 87401 www.animasenvironmental.com

624 E. Comanche Farmington, NM 87401 505-564-2281

> Durango, Colorado 970-403-3084

Site Investigation Report
Julander Federal #1E
NE¼ SW¼, Section 31, T29N,
R11W
San Juan County, New Mexico

March 26, 2014

Prepared by:

Animas Environmental Services, LLC 624 E. Comanche Farmington, New Mexico 87401 Tel. 505.564.2281 www.animasenvironmental.com

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1.0 Introduction

On behalf of Energen Resources Corporation (Energen), Animas Environmental Services, LLC (AES) has prepared this site investigation report associated with a condensate tank release that was discovered at the Julander Federal #1E on January 14, 2013. The investigation was completed in accordance with the *Groundwater Investigation Work Plan*, *Julander Federal #1E* dated April 18, 2013 and updates in June 2013.

This report documents soil boring and monitor well installation, well development, groundwater monitoring and sampling, and a soil vapor extraction (SVE) pilot study completed at the site in accordance with New Mexico Oil Conservation Division (NMOCD) and New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) regulations.

2.0 Site Information

2.1 Location

Location - NE¼ SW¼, Section 31, T29N, R11W, San Juan County, New Mexico. Latitude/Longitude - N36.67936 and W108.03514, respectively.

Surface Owner – Private

Figure 1. Topographic Site Location Map

Figure 2. Aerial Site Map

2.2 NMOCD Ranking

In accordance with NMOCD release protocols, action levels were established per NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993) prior to the initial assessment. The release was given a ranking score of 30 based on the following factors:

- Depth to Groundwater: Based on groundwater measurements during groundwater monitoring activities, groundwater ranges from approximately 33 to 41 feet below ground surface (bgs). (20 points)
- Wellhead Protection Area: The release location is not within a wellhead protection area. However, two nearby, private water wells were identified on the New Mexico Office of the State Engineer (NMOSE) database; one reported at approximately 290 feet to the southwest and another at approximately 550 feet to the northeast. (0 points)
- Distance to Surface Water Body: An unnamed wash which discharges to the San Juan River is located approximately 920 feet west of the release location. (10 points)

The ranking score 30 dictates that concentration for impacted soils left in place must be below the NMOCD action levels of 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

3.0 Site History

As a result of the freezing and breaking of a production tank valve, a release of approximately 96 bbls of natural gas condensate within the production tank secondary containment area was discovered on January 14, 2013. Subsequently, Energen excavated and transported off-site approximately 3,356 cubic yards of petroleum hydrocarbon contaminated soil. The excavation extended to an approximate depth of 45 feet bgs, where water seepage into excavation occurred, and excavation conditions became unstable. Therefore, the excavation was backfilled, and one investigation well, MW-1, was installed by Envirotech, Inc. (Envirotech) to determine if groundwater had been impacted. Groundwater laboratory analytical results from MW-1 reported 23.8 μ g/L benzene, 289 μ g/L toluene, 401 μ g/L ethylbenzene, and 3,290 μ g/L xylene concentrations. Benzene and xylene concentrations exceeded the New Mexico Water Quality Control Commission (WQCC) standards of 10 μ g/L (benzene) and 620 μ g/L (total xylene). The Envirotech soil boring log and laboratory analytical report are included in Appendix A.

4.0 Site Investigation 2013

Based on the analytical results described in the previous section, a groundwater investigation was proposed in order to delineate the extent of the dissolved phase hydrocarbon contaminants associated with the release. The investigation procedures were designed to be protective of both surface water and groundwater and are based upon protocols outlined in AES' Standard Operating Procedures (SOPs). SOPs follow applicable NMOCD guidelines, American Society for Testing and Materials (ASTM) standards, and applicable U.S. Environmental Protection Agency (USEPA) methods and guidelines for soil and groundwater sampling.

Between April and August 2013, AES installed seven soil borings (SB-1 through SB-7) which were completed as one- and two-inch diameter monitor wells in the vicinity of the release location. Groundwater was encountered in each soil boring at depths ranging from 37 feet to 40 feet bgs while drilling. Soil boring/monitor well locations are presented on Figure 2, and a photographic log is presented in Appendix B.

Specific project tasks by date are listed below:

- March 2013: Installation of MW-1 by Envirotech; Groundwater monitoring and sampling by Envirotech;
- April and May 2013: Installed three soil borings completed as one- and two-inch diameter monitor wells (SB-1/MW-2, SB-2/MW-4, and SB-3/MW-3); Groundwater monitoring and sampling;
- August 2013: Installed four soil borings completed as two-inch diameter monitor wells (SB-4/MW-5, SB-5/MW-6, SB-6/MW-7, and SB-7/MW-8); Quarterly groundwater monitoring and sampling;
- October and November 2013: Conducted SVE pilot study; Quarterly groundwater monitoring and sampling; and
- February 2014: Quarterly groundwater monitoring and sampling.

4.1 Pre-Field Coordination and Job Safety Analysis

Prior to field work, AES utilized the New Mexico One-Call system to identify and mark all underground utilities at the site. Additionally, AES prepared and implemented a comprehensive site-specific Job Safety Analysis (JSA) addressing the activities associated with soil boring installation and soil and groundwater sampling. All onsite personnel were required to read and sign the JSA to acknowledge their understanding of the information contained within the JSA. The JSA was implemented and enforced on site by the assigned Site Safety and Health Officer.

4.2 Soil Boring/Monitor Well Installation, April, May and August 2013

On April 29 and May 1, 2013, AES installed three soil borings which were completed as monitor wells (SB-1/MW-2, SB-2/MW-4, and SB-3/MW-3). Monitor well MW-2 was completed as a 1-inch diameter well, whereas MW-3 and MW-4 were completed as 2-inch diameter wells. Additionally, between August 14 and 16, 2013, AES installed four soil borings which were subsequently completed as 2-inch diameter wells (SB-4/MW-5, SB-5/MW-6, SB-6/MW-7 and SB-7/MW-8).

4.2.1 Drilling Methods

Soil boring SB-1 was completed with a Simco truck-mounted direct push rig operated by Kyvek Energy Services (Kyvek), Aztec, New Mexico. Soil borings SB-2 and SB-3 were completed with a

CME-75 drill rig utilizing hollow stem augers (HSA) and was also operated by Kyvek. Soil borings SB-4 through SB-7 were completed with a CME-75 drill rig utilizing HSA operated by Enviro-Drill, Inc., Albuquerque, New Mexico.

4.2.2 Soil Sample Collection

Soil samples for SB-1 were collected at 4-foot intervals from continuously driven core-barrel samplers during advancement of the soil borings. Soil samples from SB-2 and SB-7 were collected a 5-foot intervals from split-spoon samplers. Soil samples were collected from the samplers and transferred to appropriately labeled sample containers. The sample was split for field screening of volatile organic compounds (VOCs) with a photo-ionization detector (PID) organic vapor meter (OVM) and laboratory analysis. Selected soil samples were collected for laboratory analysis from each boring.

For each soil boring, a Soil Boring Log was completed. These logs recorded sample identification, depth collected, and method of collection, as well as observations of soil moisture, color, grain size, contaminant presence, and overall stratigraphy. Soil Boring Logs are presented in Appendix C.

4.2.3 Soil Field Screening

Samples were field screened for VOC vapors utilizing a PID-OVM, which was calibrated to 100 ppm with isobutylene gas. Field screening followed AES' SOP for heated headspace analysis of VOCs.

4.2.4 Soil Laboratory Analyses

All soil samples collected from the soil borings were submitted to Hall Environmental Analysis Laboratory (Hall), Albuquerque, New Mexico, for analysis of the following parameters:

- BTEX per USEPA Method 8021B; and
- TPH (GRO/DRO) per USEPA Method 8015D.

Once collected, all samples were preserved in laboratory-supplied containers and stored in an insulated cooler containing ice. Samples were shipped by Hall personnel in insulated coolers containing ice at less than 6°C via bus to the analytical laboratory.

4.2.5 Groundwater Monitor Well Construction

Monitor well MW-2 construction consisted of 1.4-inch outside diameter (0.75-inch inside diameter) pre-packed screen (0.010-inch slot) and 1.0-inch blank riser casing. The screen is factory packed with 20/40 Colorado silica sand. Monitor wells MW-3 through MW-8 construction consisted of 2.375-inch outside diameter (2.048-inch inside diameter) Schedule 40 PVC screen and 2.0-inch blank riser casing, with 20/40 Colorado silica sand pack. For all wells, MW-2 through MW-8, the screened interval extended 15 feet across the water table. A

bentonite seal was placed above the sand pack, and concrete grout with approximately 5 percent bentonite was poured from the top of the bentonite plug up to within 0.5 feet of ground surface. A steel surface-grade well vault, enclosed with a shroud of concrete, was installed on the well to prevent unauthorized access and damage. Monitor well schematics are presented on the Soil Boring Logs in Appendix C.

4.2.6 Professional Survey

The location and elevation of the top of each well casing was surveyed to the nearest 0.01 foot with reference to mean sea level by professional surveyors in order to accurately determine the local groundwater depth and flow direction beneath the site. Each well was tied to an existing USGS benchmark.

4.2.7 Monitor Well Development

On May 3 and August 21, 2013, each well was developed in order to remove fine grained sediments and to increase hydraulic conductivity through the well screen. Each well was developed by a combination of surging and bailing techniques. Groundwater purged from the wells during development and sampling was placed into the separator waste tank on the location for proper disposal along with the facility's produced water.

4.3 SVE Pilot Study Tests, October and November 2013

In order to evaluate the potential for BTEX in groundwater to partition from a dissolved phase to a vapor phase by applying a low vacuum to the vadose zone, SVE pilot tests were completed in October and November 2013. These tests were short-term, with a 24 hour duration in October and a 48 hour duration in November.

4.3.1 Pilot Study Test Procedures

For both pilot tests, a ½ horse GAST regenerative blower was used to create the applied vacuum. The blower has a 1.25 inch suction and was connected to the test well(s) by reinforced rubber hose. During both studies, samples were collected from the vacuum pump discharge into Tedlar air sample bags. Air samples were submitted to Hall for analysis of the following parameters:

- BTEX per USEPA Method 8021B; and
- TPH (GRO) per USEPA Method 8015D.

October 2013

During the October 2013 test, a vacuum was applied to MW-3 while vacuum response monitoring was conducted in MW-1, MW-4, MW-5, and MW-7. During the first 6 hours of the test, the applied vacuum was increased hourly from a beginning pressure of 5 in- H_2O up to 10 in- H_2O , which based on the manufacturer's pump performance curve, and air flow from the

well was approximately 10 cubic feet per minute (CFM) . The vacuum was not increased beyond 10 in- H_2O to avoid the possibility of raising the groundwater within the formation in the vicinity of MW-3. During the daylight hours of the test, OVM measurements of the vacuum discharge were recorded, and a low-range magnehelic gauge was used to measure vacuum response in surrounding wells.

November 2013

During the November 2013 test, the vacuum pump suction was manifolded to allow a vacuum to be simultaneously and equally applied to MW-1, MW-3, and MW-4, while vacuum response monitoring was conducted in MW-5 and MW-7. An applied pressure of 10 in- H_2O was maintained for the entire 48 hour study. About every three hours, during the daylight hours of the test, OVM measurements of the vacuum discharge were recorded, and a low-range magnehelic gauge was used to measure vacuum response in surrounding wells.

Additionally, groundwater samples were collected from MW-1, MW-3, and MW-4 prior to starting the study and at the conclusion of the pilot study. The purpose of the sampling was to evaluate percent concentration change for BTEX as a result of the 48 hour test. Samples were submitted to Hall for analysis of:

BTEX per USEPA Method 8021B

Pilot study results are discussed in Section 5.2.

4.4 Groundwater Monitoring and Sampling

A groundwater sample was collected from SB-1/MW-2 during drilling by AES on April 29, 2013, for initial evaluation of dissolved contaminant migration across the site. Groundwater monitoring and sampling was then conducted by AES in May 2013 following the installation of MW-2, MW-3, and MW-4. Quarterly sampling was conducted on all site wells in August 2013 subsequent to the installation of MW-5, MW-6, MW-7 and MW-8. In November 2013, quarterly groundwater sampling was conducted concurrent with pilot testing activities and was then conducted again in February 2014.

During each groundwater sampling event, the monitor wells were purged a minimum of three well volumes or until the well was dry, and a groundwater sample was collected from each well with a new disposable bailer equipped with a low-flow release valve. Purged water was disposed of in the on-site waste water tank.

4.4.1 Groundwater Measurements and Hydraulic Gradient

Prior to groundwater sample collection, depth to groundwater in each well was measured with a Keck Interface Level Indicator with an accuracy of 0.01 ft. Depth to groundwater measurements and corresponding groundwater elevations were recorded on Water Sample Collection forms in order to assist with calculating the magnitude and direction of hydraulic gradient.

4.4.2 Water Quality Measurements

Purging data, including pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen (DO), were measured with a YSI water quality meter and documented on Water Sample Collection forms until the water quality measurements indicated that the well was stabilized. Purged water volume and sample depth were also recorded. All sampling equipment was thoroughly decontaminated between uses.

4.4.3 Groundwater Laboratory Analyses

With the exception of the groundwater samples collected from MW-1 on March 14, 2013, and SB-1/MW-2 on April 29, 2013 (which were analyzed at Envirotech Laboratory), all groundwater samples were submitted to Hall in Albuquerque, New Mexico, for analysis of the following parameters:

BTEX per USEPA Method 8021B.

Once collected, all samples were preserved in laboratory-supplied containers and stored in an insulated cooler containing ice. Samples were shipped by Hall personnel in insulated coolers containing ice at less than 6°C via bus to the analytical laboratory.

5.0 Investigation Results

5.1 Soil Results

5.1.1 Soil Lithology

Fill soils from the initial excavation at the location appeared to consist of clayey sand with varying amounts of gravel, cobbles, and boulders. Native soils consisted of poorly graded sand with varying amounts of clay to clayey sand. A lens of clayey sand to lean clay was observed in near the transition between the vadose zone and the fluctuating water table in each boring. Groundwater was encountered in the borings at depths ranging from approximately 37 feet to 40 feet bgs while drilling. Soil cross sections are included on Figure 3, and Soil Boring Logs are presented in Appendix C.

5.1.2 Field Screening Results

Results from Envirotech's work in March 2013, showed VOC concentrations for MW-1 of 0.0 ppm for all the samples, except from 40 to 45 feet bgs (1,637 ppm) and 45 to 46 feet bgs (110 ppm).

During the soil boring installation by AES, soil field screening results showed VOC concentrations for samples from SB-4 through SB-7 ranged from 1.6 ppm at 35 to 36.5 feet in SB-4 and SB-5 up to 393 ppm at 38 to 39 feet in SB-6. Soil field screening results are presented in Table 1 and also included on the Soil Boring Logs.

5.1.3 Soil Laboratory Analytical Results

Results from Envirotech's work in March 2013, reported benzene and total BTEX concentrations below the applicable NMOCD action levels in MW-1 at 40 to 45 feet bgs. Benzene concentration in MW-1 at 40 to 45 feet bgs was reported below the laboratory detection limit of 0.50 mg/kg and total BTEX concentrations were reported as 14.6 mg/kg. TPH (GRO/DRO) concentration was reported below the NMOCD action level with 99.6 mg/kg in MW-1 at 40 to 45 feet bgs.

AES soil analytical results for benzene, total BTEX, and TPH concentrations were below the laboratory detection limits in all the soil samples except for SB-2 and SB-3. Benzene concentrations were below the NMOCD action level of 10 mg/kg in SB-2 (9.0 mg/kg) and SB-3 (2.1 mg/kg). Total BTEX concentrations exceeded the NMOCD action level of 50 mg/kg in SB-2 (187 mg/kg) and SB-3 (99 mg/kg). Additionally, TPH (GRO/DRO) concentrations exceeded the NMOCD action level of 100 mg/kg with 2,174 mg/kg in SB-2 and 1,380 mg/kg in SB-3. Soil analytical results are presented in Table 1 and on Figure 3. Laboratory analytical reports are included in Appendix D.

5.2 SVE Pilot Study Test Results

Observations and data from both pilot studies indicate that BTEX in groundwater at this site will partition from a dissolved phase to a vapor phase under low-pressure vacuum conditions. However, due to the clayey lithology, no radius of vacuum response was measured between wells, which indicates that remediation by low-pressure vacuum would most likely not be technically feasible or cost effective. Since OVM values were all less than 100 ppm, and no vacuum response was observed, only the well gas sampling results and the pre- and post-pilot test groundwater sampling results (completed for November 2013 test only) are presented here.

MW-4 Well Gas, October 2013

Date	Benzene (ppm-v)	Toluene (ppm-v)	Ethylbenzene (ppm-v)	Xylene (ppm-v)	GRO (ppm-v)	Notes
10/10/13	0.17	0.22	<0.023	0.063	1.2	Start of study
10/11/13	0.17	0.35	0.036	0.14	6.5	End of study

MW-1, MW-3, and MW-4 Combined Well Gas, November 2013

Date	Benzene (ppm-v)	Toluene (ppm-v)	Ethylbenzene (ppm-v)	Xylene (ppm-v)	GRO (ppm-v)	Notes
11/14/13	0.05	0.12	0.08	0.49	NA*	End of study

^{*}Not analyzed

Percent Groundwater Concentration Changes in BTEX, November Pilot Study

Well ID	Event	Date	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (μg/L)	Xylene (μg/L)
MW-1	Baseline Pre SVE Pilot Study	11/11/13	5	92	360	3,200
MW-1	Post 48 Hour SVE Pilot Study	11/14/13	5	85	220	2,300
MW-1	% Concentration Chang	e	0	-8%	-39%	-28%
MW-3	Baseline Pre SVE Pilot	11/11/13	2,300	320	170	910
MW-3	Study Post 48 Hour SVE Pilot Study	11/14/13	1,500	280	54	550
MW-3	% Concentration Chang	e	-35%	-13%	-68%	-40%
MW-4	Baseline Pre SVE Pilot Study	11/11/13	89	87	8.8	68
MW-4	Post 48 Hour SVE Pilot Study	11/14/13	5	140	350	3,500
MW-4	% Concentration Chang	е	-94%	+61%	+3,877%	+5,047%

Note that increases in toluene, ethylbenzene, and xylene concentrations observed in MW-4 are likely indicative of a residual contaminant mass that was drawn to the well during active vacuum operations.

5.3 Groundwater Results

5.3.1 Groundwater Elevations and Gradient

During the groundwater sampling events conducted at the site in May, August and November 2013 and February 2014, depths to groundwater generally ranged from between 35 feet to 38.5 feet below top of casing (TOC), and groundwater elevations ranged from 5413 feet to 5418 feet above mean sea level (AMSL) across the site.

In May 2013, groundwater elevations in MW-1 through MW-4 ranged from 5413.51 feet AMSL in MW-3 up to 5413.62 feet AMSL in MW-1. By August 2013, groundwater elevations increased up to about 5418 feet AMSL in all wells, including the newly installed MW-5 through MW-8. Groundwater elevations peaked at about 5418.5 feet AMSL at the site in November and decreased slightly by February 2014, when groundwater elevations ranged from 5415.23 feet AMSL in MW-6 up to 5415.39 feet AMSL in MW-1. Based on February 2014 data, groundwater gradient was determined to be 0.001 ft/ft from east to west.

Depth to groundwater measurements and groundwater elevations are included in Table 2, and groundwater elevations and contours for February 2014 are presented in Figure 4.

Groundwater elevations over time for MW-1 through MW-4 and MW-7 are included as Graphs 1 through 5, respectively.

5.3.2 Groundwater Quality Field Measurements

Groundwater quality readings for all of the sampling events indicate that groundwater at the site is of a normal pH range, between 6 and 8. Specific conductivity measurements show relatively low to moderate values, between 0.5 mS and 1.5 mS, which indicate dissolved solids are most likely not present in significantly high concentrations.

Based on February 2014 data, groundwater temperature ranged from 13.24°C in MW-6 to 14.85°C in MW-2, and conductivity ranged from 0.537 mS in MW-2 up to 0.993 mS in MW-3. Readings for pH ranged from 7.17 in MW-3 up to 8.01 in MW-8. Groundwater quality data are summarized in Table 2, and Water Sample Collection forms are presented in Appendix E.

5.3.3 Groundwater Laboratory Analytical Results

Groundwater analytical results from sampling of MW-1, conducted by Envirotech in March 2013, showed benzene and xylene concentrations exceeding applicable WQCC standards with 23.8 μ g/L and 3,290 μ g/L, respectively. Toluene and ethylbenzene concentrations in MW-1 were below applicable WQCC standards 289 μ g/L and 401 μ g/L, respectively.

Groundwater analytical results from the sampling events conducted to date by AES, including in association with pilot studies, have shown that BTEX constituents are present in MW-1 (primarily xylene), MW-3, MW-4, and MW-7:

- MW-1: Benzene concentrations in each sampling event have remained below laboratory detection limits; toluene and ethylbenzene concentrations have been below applicable WQCC standards; and xylene concentrations have ranged from 2,300 μg/L up to 4,100 μg/L. In February 2014, BTEX concentrations were reported as <5.0 μg/L benzene, 42 μg/L toluene, 470 μg/L ethylbenzene, and 4,100 μg/L xylene.</p>
- MW-3: Significant BTEX concentrations have been reported in each sampling event, with the highest BTEX concentrations reported in August 2013 (18,000 μg/L benzene, 27,000 μg/L toluene, 1,300 μg/L ethylbenzene, and 12,000 μg/L xylene). After the pilot studies were conducted, BTEX concentrations decreased to 1,500 μg/L benzene, 280 μg/L toluene, 54 μg/L ethylbenzene, and 550 μg/L xylene. In February 2014, BTEX concentrations showed some rebound with concentrations reported at 9,100 μg/L benzene, 8,800 μg/L toluene, 670 μg/L ethylbenzene, and 5,300 μg/L xylene.
- MW-4: Significant BTEX concentrations were reported in each sampling event, with the highest concentrations reported in August 2013, with 15,000 μg/L benzene, 29,000 μg/L toluene (May 2013), 1,200 μg/L ethylbenzene, and 11,000 μg/L xylene). After the pilot studies were conducted, BTEX concentrations decreased to <5 μg/L benzene, 140 μg/L toluene, 350 μg/L ethylbenzene, and 3,500 μg/L xylene. However, in February 2014, BTEX concentrations showed some rebound, with concentrations reported at 1,300 μg/L benzene, 1,100 μg/L toluene, and 1,300 μg/L xylene.
- MW-7: Dissolved phase BTEX concentrations have increased in each sampling event, with benzene just slightly over the WQCC standard and ethylbenzene remaining below standard. Toluene and xylene concentrations in February 2014 were reported above the WQCC standards with 870 μg/L and 1600 μg/L, respectively.

Four wells, including MW-2, MW-5, MW-6 and MW-8, have BTEX concentrations that have remained either below laboratory detection limits or well below applicable WQCC standards.

Tabulated groundwater analytical results are presented in Table 3 and on Figure 5. Dissolved phase benzene, toluene and xylene contours are presented in Figures 6, 7, and 8, respectively. Graphs 1 through 5 include groundwater contaminant concentrations and groundwater elevations for MW-1 through MW-4 and MW-7, respectively. Groundwater laboratory analytical reports are presented in Appendix D.

6.0 Conclusions and Recommendations

AES installed a total of seven soil borings (SB-1 through SB-7) which were completed as a 1-inch diameter monitor well (MW-2) and 2-inch diameter wells (MW-3 through MW-8) in April, May, and August 2013, in accordance with the workplan submitted in April 2013 with updates in June 2013. Soils were observed to consist primarily of clayey sand fill and native poorly graded sand with varying amounts of clay. A lens of clayey sand to lean clay was observed in each of the wells near the transition between the vadose zone and fluctuating groundwater table. Groundwater was encountered at depths ranging from approximately 37 feet to 40 feet bgs during drilling. The groundwater gradient is generally flat at 0.001 ft/ft from east to west. Gradients are expected to vary throughout the year due to the seasonal operation of unlined irrigation ditches and watering of alfalfa fields adjacent to the site.

Soil field screening results showed VOC concentrations below the NMOCD action level of 100 ppm in the soil samples from SB-4 through SB-7, except for SB-6 at 38 to 39.5 feet (393 ppm). Soil laboratory analytical results were below detection limits or applicable NMOCD action levels in all samples, except for SB-2 at 40 to 41 feet with 187 mg/kg total BTEX and 2,174 mg/kg TPH (GRO/DRO) and in SB-3 with 99 mg/kg total BTEX and 1,380 mg/kg TPH (GRO/DRO).

Laboratory results confirmed dissolved phase BTEX concentrations above WQCC standard in four monitor wells, including MW-1 (primarily xylene), MW-3, MW-4 and MW-7. During the February 2014 monitoring event, the highest contaminant concentrations were reported in MW-3 with 9,100 μ g/L benzene, 8,800 μ g/L toluene, and 670 μ g/L ethylbenzene, and 5,300 μ g/L xylene. Dissolved phase toluene, ethylbenzene, and xylenes concentrations were below WQCC standards in the remaining monitor wells (MW-2 MW-5, MW-6, and MW-8). Based on the installation of the additional site wells, it appears that the dissolved phase downgradient extent of contaminant impact has been sufficiently defined to begin mitigation planning. Any additional investigative wells, if needed, will be installed as part of mitigation efforts.

Two separate short-term SVE pilot studies were completed in October and November 2013. Both studies utilized a maximum applied vacuum of 10 in-H₂O to select wells. Based on pilot study observations and data, and due to the site's clayey lithology, low-vacuum SVE remediation will not likely provide a technically feasible or cost effective method of contaminant mitigation at this site. However, based on the same observations and data, AES recommends that Energen complete the following mitigation tasks:

- Install one well on the north side of the condensate tank, within the secondary containment;
- Evaluate remediation alternatives, including the use of high-vacuum multiphase extraction (MPE);

- Prepare and submit a Mitigation Plan to NMOCD; and
- Continue with quarterly groundwater monitoring and sampling.

7.0 Certification

On behalf of Energen Resources Corporation, Animas Environmental Services, LLC has prepared this site investigation report associated with a condensate tank release that was discovered at the Julander Federal #1E on January 14, 2013. I, the undersigned, am personally familiar with the information submitted in this report and attest that it is true and complete to the best of my knowledge.

Respectfully Submitted,

Heather M. Woods, P.G.

Heather 4 Winds

Project Manager

Ross Kennemer

Principal

Elizabeth McNally, P.E.

(Ggobith ? Mirally-

8.0 References

- American Society for Testing and Materials (ASTM) International. ASTM E 1903-11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, ASTM, 2012
- Animas Environmental Services, LLC. 2012. Groundwater Investigation Work Plan, Julander Federal #1E, San Juan County, New Mexico, April 18, 2013.
- U.S. Environmental Protection Agency (USEPA). 1991. Site Characterization for Subsurface Remediation, EPA 625/4-91-026, November, 1991.
- USEPA. 1997. Expedited Site Assessment Tools for Underground Storage Tank Sites. OSWER 5403G and EPA 510B-97-001, March, 1997.
- USEPA. 2001. Environmental Investigations, Standard Operating Procedures, and Quality Assurance Manual (EISOPQAM), November 2001.

TABLE 1. SUMMARY OF SOIL FIELD AND LABORATORY ANALYTICAL RESULTS Energen Resources Julander Federal #1E

	трн (GRO)	(ma/ka)
	Total BTEX TPH (GRO)	(ma/ha) (ma/ha) (ma/ha)
Mexico	Benzene	(ma//pu)
San Juan County, New Mexico	OVM	(maa)
San Juan	Analytical	Pacthod .
	Depth	/4 har)
		(44 har)

Sample ID Sample Date NMOCD Action Levels MW-1* 11-Mar-13	_	Depth	Analytica!	OVM	Benzene	Total BTEX	TPH (GRO)	ודה (סגט)
	e Date	(ft bgs)	Method	(mdd)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
	tion Leve	sja		100	10	20	11	100
	ar-13	40-45	8021/8015	1,637	<0.50	14.6	78.7	20.9
SB-1/MW-2 29-Apr-13	or-13	37.5-39	8021/8015	NN	<0.047	<0.238	<4.7	<10
SB-2/MW-4 1-May-13	ıy-13	40-41	8021/8015	NM	9.0	187	2,100	74
SB-3/MW-3 1-May-13	ıy-13	39-40	8021/8015	NM	2.1	66	1,300	80
SB-4/MW-5 15-Aug-13	gr-13	35-36.5	8021/8015	1.6	<0.047	<0.235	<4.7	<10
SB-5/MW-6 15-Aug-13	13-13	35-36.5	8021/8015	1.6	<0.047	<0.235	<4.7	<10
SB-6/MW-7 14-Aug-13	13-13	35-36.5	8021/8015	1.7	<0.048	<0.240	<4.8	<10
SB-7/MW-8 16-Aug-13	13 gr	35-36.5	8021/8015	4.0	<0.048	<0.240	<4.8	<9.9

Notes:

*Sample collected and analyzed by Envirotech, Inc.

< - Analyte not detected above listed method limit

bgs - Below ground surface

NM - Not measured

Site Investigation Report March 26, 2014

TABLE 2. SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA Energen Resources Julander Federal #1E San Juan County, New Mexico

		Top of Casing	Depth to	NAPL	Water Level	Corrected Water Level			Specific
OI IIONI	Date	Elevation (ff ams!)	Water /#)	thickness (#)	Elevation (# amsl)	Elevation (ft ams!)	7,	Temp.	Conduct.
MW-1	6-May-13	5455.49	41.87	60	5413.62		6.95	14.61	0.865
MW-1	23-Aug-13	5455.49	37.50		5417.99		98.9	15.10	1.661
MW-1	11-Nov-13	5455.49	36.97		5418.52		08.9	13.69	NM
MW-1	14-Nov-13	5455.49	36.63		5418.86		7.12	13.85	0.916
MW-1	10-Feb-14	5455.49	40.10		5415.39		7.54	14.10	0.818
MW-2	6-May-13	5452.05	38.48		5413.57		7.44	16.85	0.542
MW-2	23-Aug-13	5452.05	34.29		5417.76		7.19	16.34	1.124
MW-2	11-Nov-13	5452.05	33.35		5418.70		6.97	13.46	MN
MW-2	14-Nov-13	5452.05	WN		MN			NN	
MW-2	10-Feb-14	5452.05	36.71		5415.34		7.62	14.85	0.537
MW-3	6-May-13	5453.98	40.47		5413.51		6.70	14.80	1.575
MW-3	23-Aug-13	5453.98	36.16		5417.82		6.70	14.79	1.783
MW-3	11-Nov-13	5453.98	35.53		5418.45		6.52	13.73	NM
MW-3	14-Nov-13	5453.98	35.62	0.01	5418.36	5418.37	6.89	13.61	1.393
MW-3	10-Feb-14	5453.98	38.70		5415.28		7.17	14.19	0.993

Site Investigation Report March 26, 2014

TABLE 2. SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA Energen Resources Julander Federal #1E San Juan County, New Mexico

Well ID Me		Cacina	Donth to	NAPI	lovel	Water Level			Specific
_	Date	Elevation	Water	thickness	Elevation	Elevation		Temp.	Conduct.
_	Measured	(ft amsl)	(ft)	(tt)	(ft amsl)	(ft amsl)	рН	("C)	(mS)
	6-May-13	5453.72	40.17		5413.55		7.03	14.94	1.123
MW-4 23	23-Aug-13	5453.72	35.93		5417.79		6.80	15.30	1.409
MW-4 11	11-Nov-13	5453.72	35.20		5418.52		6.74	14.52	MN
MW-4 14	14-Nov-13	5453.72	35.07		5418.65		7.14	14.36	0.936
MW-4 10	10-Feb-14	5453.72	38.41		5415.31		7.32	14.32	0.920
MW-5 23	23-Aug-13	5453.77	36.00		5417.77		6.82	15.14	1.686
MW-5 11	11-Nov-13	5453.77	35.44		5418.33		6.68	13.18	NM
MW-5 14	14-Nov-13	5453.77	MN		MN			NN	
MW-5 10	10-Feb-14	5453.77	38.45		5415.32		7.46	13.37	0.908
MW-6 23	23-Aug-13	5452.29	34.56		5417.73		7.01	15.54	1.638
MW-6 11	11-Nov-13	5452.29	33.84		5418.45		6.79	13.16	NM
MW-6 14	14-Nov-13	5452.29	MN		MN			NM	
MW-6 10	10-Feb-14	5452.29	37.06		5415.23		7.38	13.24	0.922
MW-7 23	23-Aug-13	5454.98	37.11		5417.87		7.06	15.64	1.337
MW-7 11	11-Nov-13	5454.98	36.42		5418.56		68.9	14.40	NN
MW-7 14	14-Nov-13	5454.98	NN		NN			NM	
MW-7 10	10-Feb-14	5454.98	39.66		5415.32		7.50	14.45	0.698

TABLE 2. SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA

Energen Resources Julander Federal #1E

San Juan County, New Mexico

Moli ID Measured Muse (ft ams) (ft ams)			Top of			Water	Corrected			
Date Elevation Water thickness Elevation Elevation Temp. 7°C) Measured (ft amsl) (ft) (ft) (ft amsl) pH (°C) 23-Aug-13 5453.20 35.41 5417.79 7.29 16.13 11-Nov-13 5453.20 34.31 NM NM NM 10-Feb-14 5453.20 37.86 5415.34 8.01 14.51			Casing	Depth to	NAPL	[evel	Water Level			Specific
Measured (ft amsl) (ft) (ft) (ft amsl) pH (°C) 23-Aug-13 5453.20 35.41 5417.79 7.29 16.13 11-Nov-13 5453.20 NM NM NM NM 10-Feb-14 5453.20 37.86 5415.34 8.01 14.51		Date	Elevation	Water	thickness	Elevation	Elevation		Temp.	Conduct.
23-Aug-13 5453.20 35.41 5417.79 7.29 16.13 11-Nov-13 5453.20 34.31 5418.89 7.28 14.94 14-Nov-13 5453.20 NM NM NM 10-Feb-14 5453.20 37.86 5415.34 8.01 14.51	Well ID	Measured	(ft amsl)	(£)	(£)	(ft amsl)	(ft amsl)	Н	(,c)	(mS)
11-Nov-13 5453.20 34.31 5418.89 7.28 14.94 14-Nov-13 5453.20 NM NM NM 10-Feb-14 5453.20 37.86 5415.34 8.01 14.51	MW-8	23-Aug-13	5453.20	35.41		5417.79		7.29	16.13	1.261
14-Nov-13 5453.20 NM NM NM 10-Feb-14 5453.20 37.86 5415.34 8.01 14.51	WW-8	11-Nov-13	5453.20	34.31		5418.89		7.28	14.94	MN
5453.20 37.86 5415.34 8.01 14.51	MW-8	14-Nov-13	5453.20	NN		NN			NN	
	MW-8	10-Feb-14	5453.20			5415.34		8.01	14.51	0.552

Note: NM - Not measured

TABLE 3. SUMMARY OF GROUNDWATER LABORATORY ANALYTICAL RESULTS

Energen Resources Julander Federal #1E

San Juan County, New Mexico

			-	=	
		Benzene	Toluene	Ethyl- Benzene	Xylene
Well ID	Samuela Data				
Well ID	Sample Date e Method	(μg/L)	(μg/L) EPA Meth	(μg/L) nod 8021B	(μg/L)
	Standards	10	750	750	620
MW-1*	14-Mar-13	24	289	401	3,290
MW-1	6-May-13	<10	77	470	3,900
MW-1	23-Aug-13	<10	110	470	4,000
MW-1	11-Nov-13	<5.0	92	360	3,200
MW-1	14-Nov-13	<10	85	220	2,300
MW-1	10-Feb-14	<5.0	42	470	4,100
10100-1	10-1-60-14	\3.0	1 72	470	4,100
MW-2**	29-Apr-13	<1.0	<1.0	<1.0	12
MW-2	6-May-13	6.8	40	2.7	25
MW-2	23-Aug-13	<1.0	<1.0	<1.0	<2.0
MW-2	11-Nov-13	<1.0	<1.0	<1.0	<2.0
MW-2	14-Nov-13		٨	IS	
MW-2	10-Feb-14	<1.0	<1.0	<1.0	<2.0
MW-3	6-May-13	16,000	27,000	1,000	9,500
MW-3	23-Aug-13	18,000	27,000	1,300	12,000
MW-3	11-Nov-13	2,300	320	170	910
MW-3	14-Nov-13	1,500	280	54	550
MW-3	10-Feb-14	9,100	8,800	670	5,300
MW-4	6-May-13	8,500	29,000	1,100	10,000
MW-4	23-Aug-13	15,000	28,000	1,200	11,000
MW-4	11-Oct-13	9,300	16,000	720	6,800
MW-4	11-Nov-13	89	87	8.8	68
MW-4	14-Nov-13	<5.0	140	350	3,500
MW-4	10-Feb-14	1,300	1,100	150	1,300
					T :
MW-5	23-Aug-13	5.3	<2.0	<2.0	29
MW-5	11-Nov-13	<1.0	<1.0	<1.0	<2.0
MW-5	14-Nov-13			IS	r
MW-5	10-Feb-14	1.1	<1.0	<1.0	110

TABLE 3. SUMMARY OF GROUNDWATER LABORATORY ANALYTICAL RESULTS

Energen Resources Julander Federal #1E

San Juan County, New Mexico

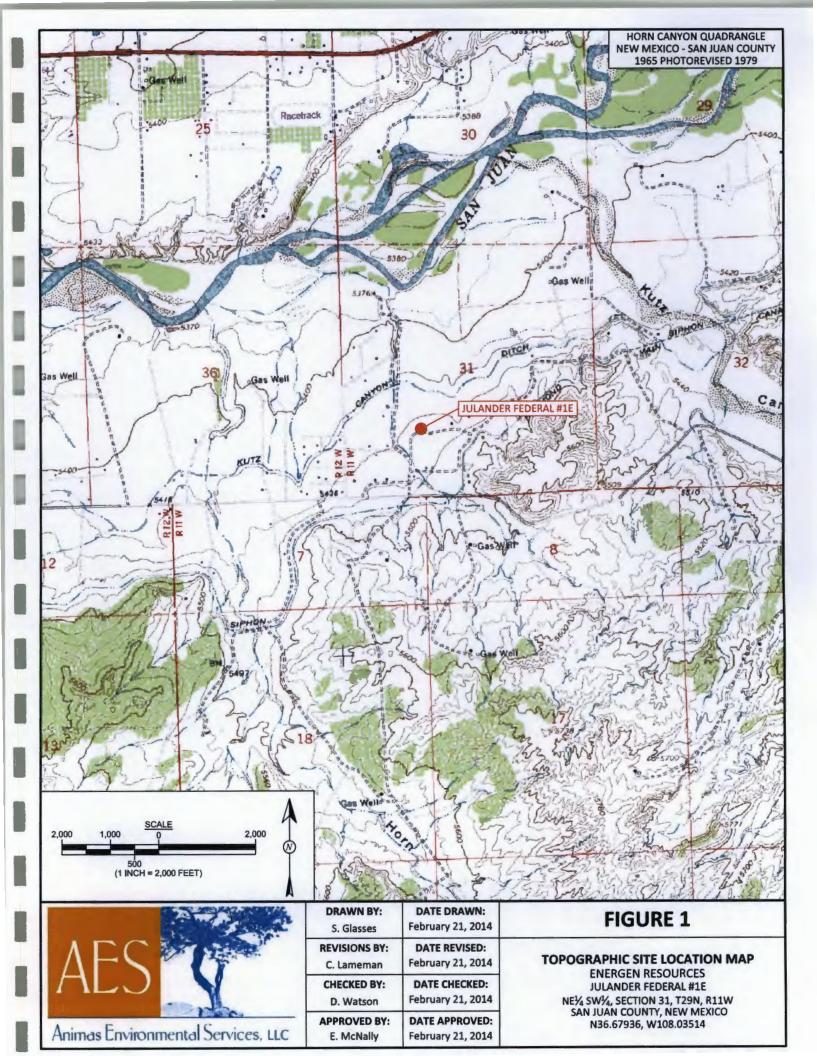
Well ID	Sample Date	Benzene (μg/L)	Toluene (μg/L)	Ethyl- Benzene (μg/L)	Xylene (μg/L)
Samp	le Method		EPA Metr	nod 8021B	
WQCC	Standards	10	750	750	620
MW-6	23-Aug-13	<2.0	<2.0	<2.0	<4.0
MW-6	11-Nov-13	<1.0	<1.0	<1.0	<2.0
MW-6	14-Nov-13		٨	IS	
MW-6	10-Feb-14	<1.0	<1.0	<1.0	<2.0
MW-7	23-Aug-13	<10	290	70	630
MW-7	11-Nov-13	8.6	500	160	1,200
MW-7	14-Nov-13		٨	IS	
MW-7	10-Feb-14	14	870	200	1,600
MW-8	23-Aug-13	<2.0	<2.0	<2.0	<4.0
MW-8	11-Nov-13	<1.0	<1.0	<1.0	<2.0
MW-8	14-Nov-13		Ν	S	
MW-8	10-Feb-14	<1.0	<1.0	<1.0	<2.0

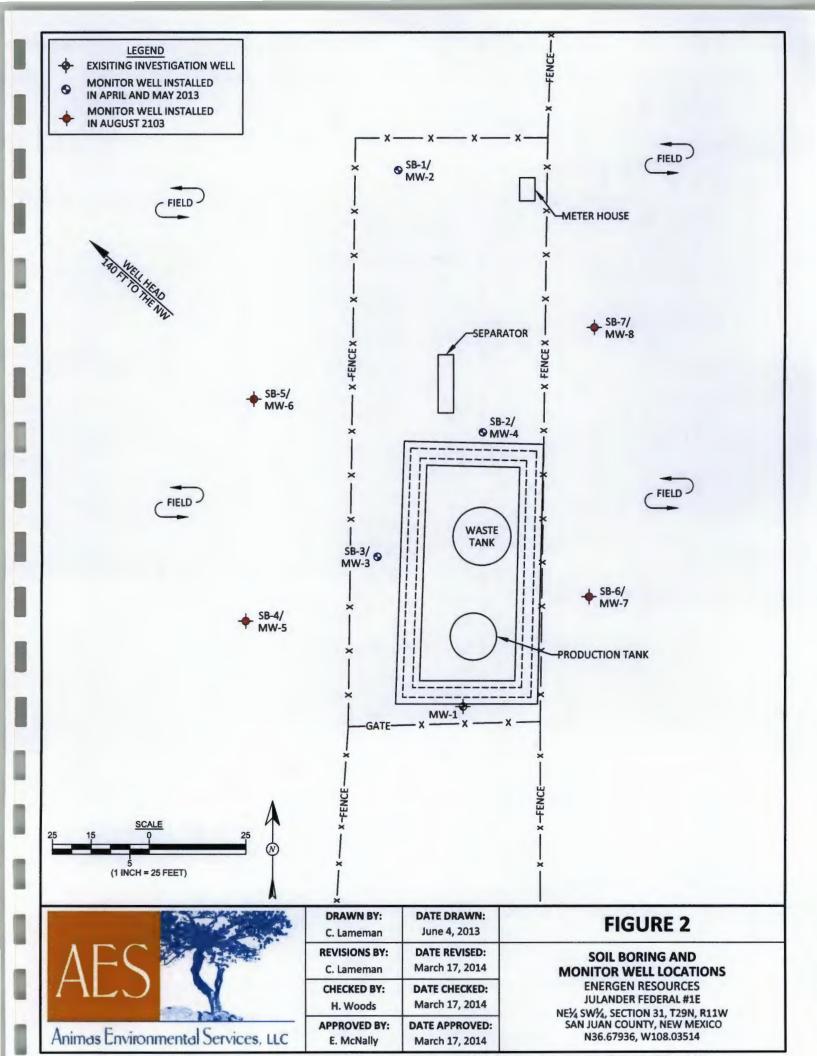
Note:

NS - Not sampled

^{*}Sample collected and analyzed by Envirotech, Inc.

^{**} Sample collected by AES and analyzed at Envirotech, Inc.





APPROVED BY:

DATE APPROVED: March 17, 2014

March 17, 2014 DATE CHECKED: March 17, 2014

E. McNally

GROUNDWATER ELEVATION

LEGEND

POORLY GRADED SAND

CLAYEY SAND

CHECKED BY:

H. Woods

REVISIONS BY:

C. Lameman

C. Lameman

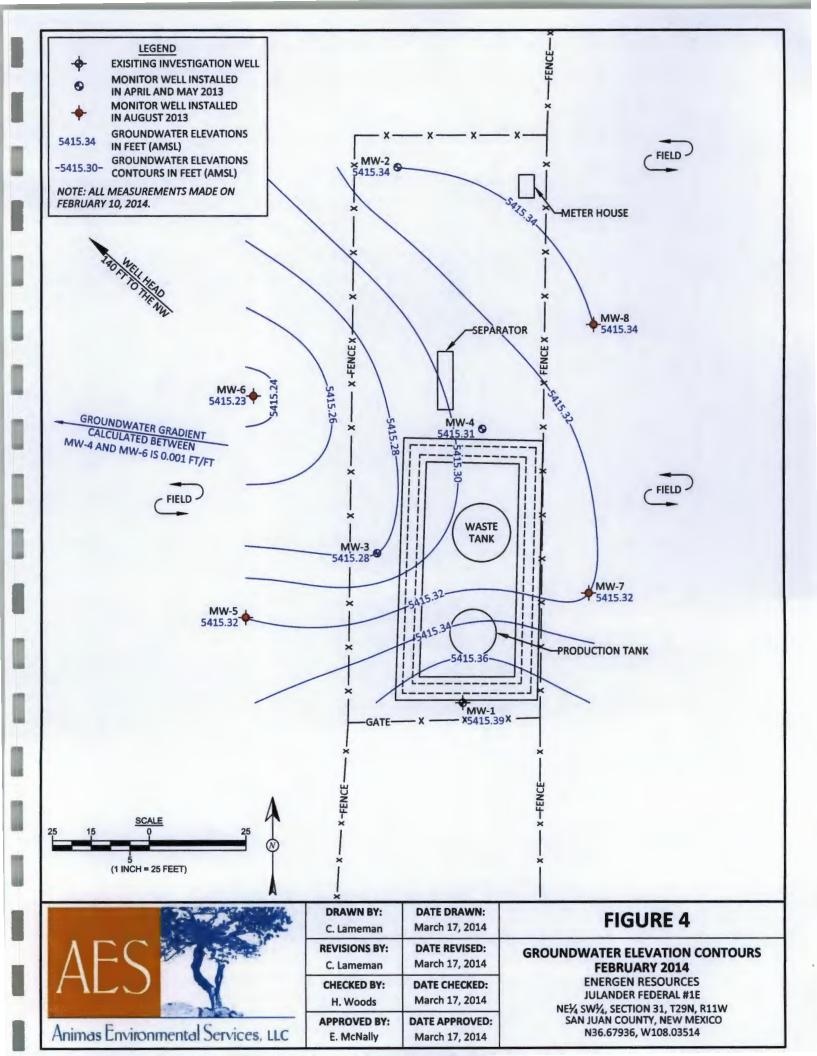
March 17, 2014 DATE REVISED:

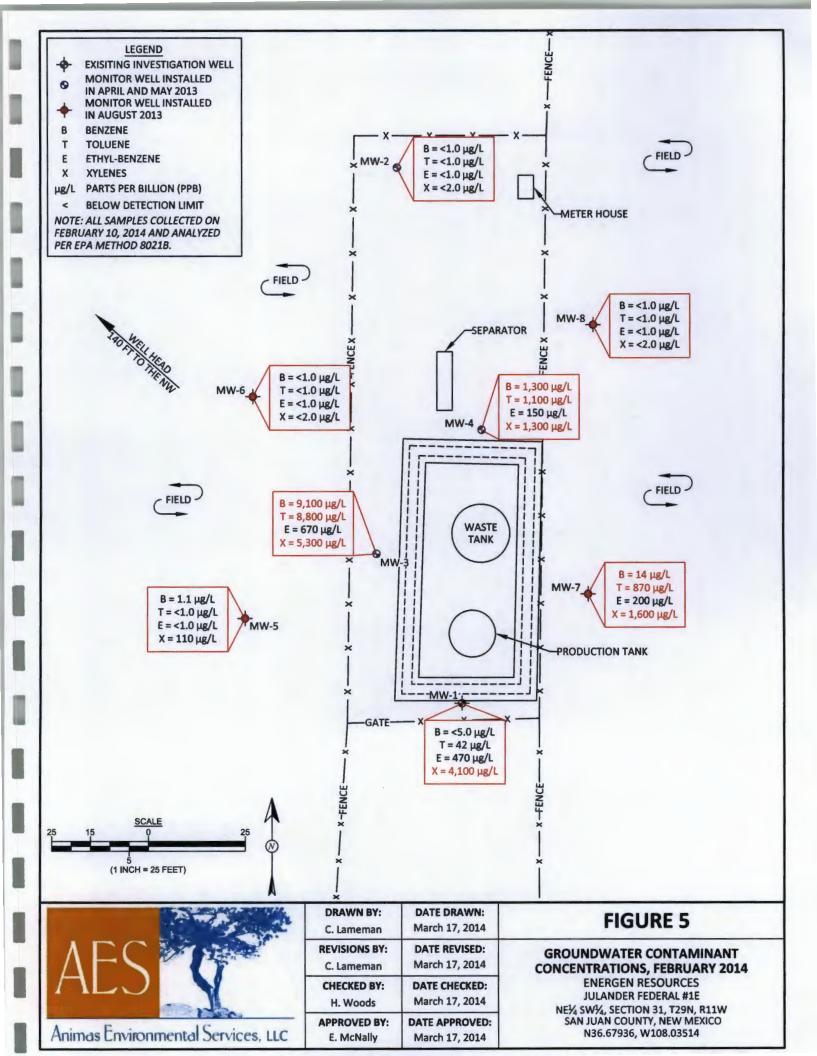
DATE DRAWN:

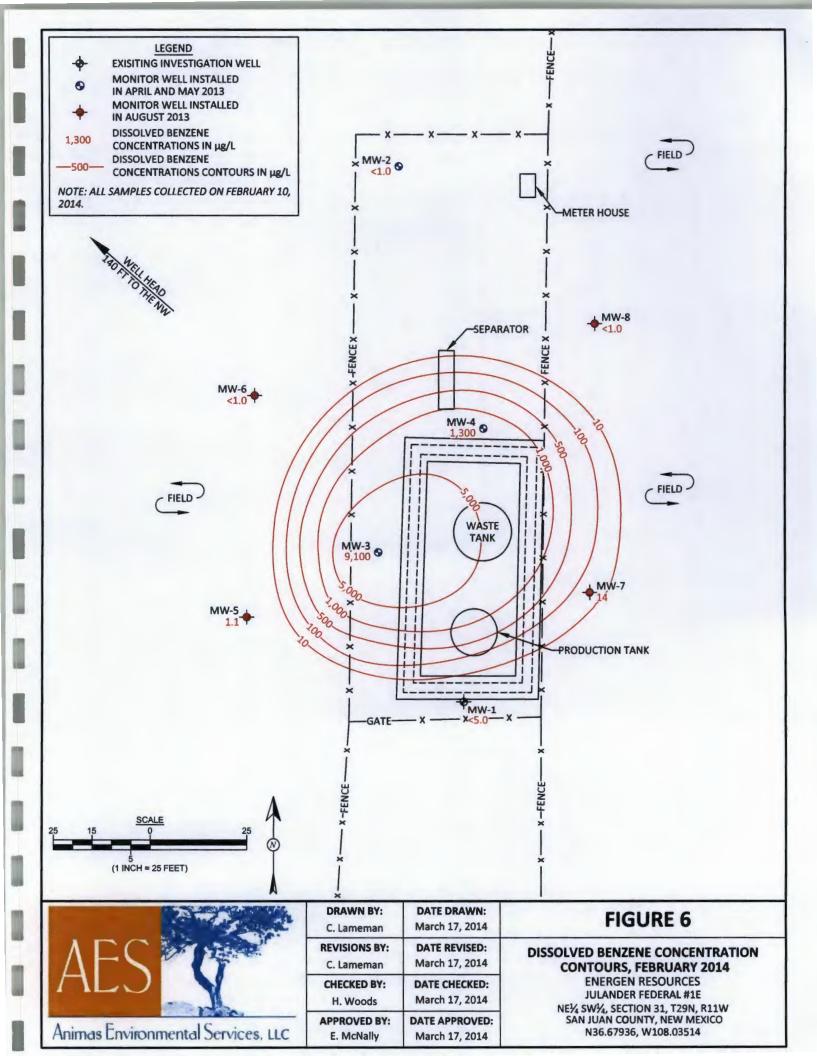
DRAWN BY:

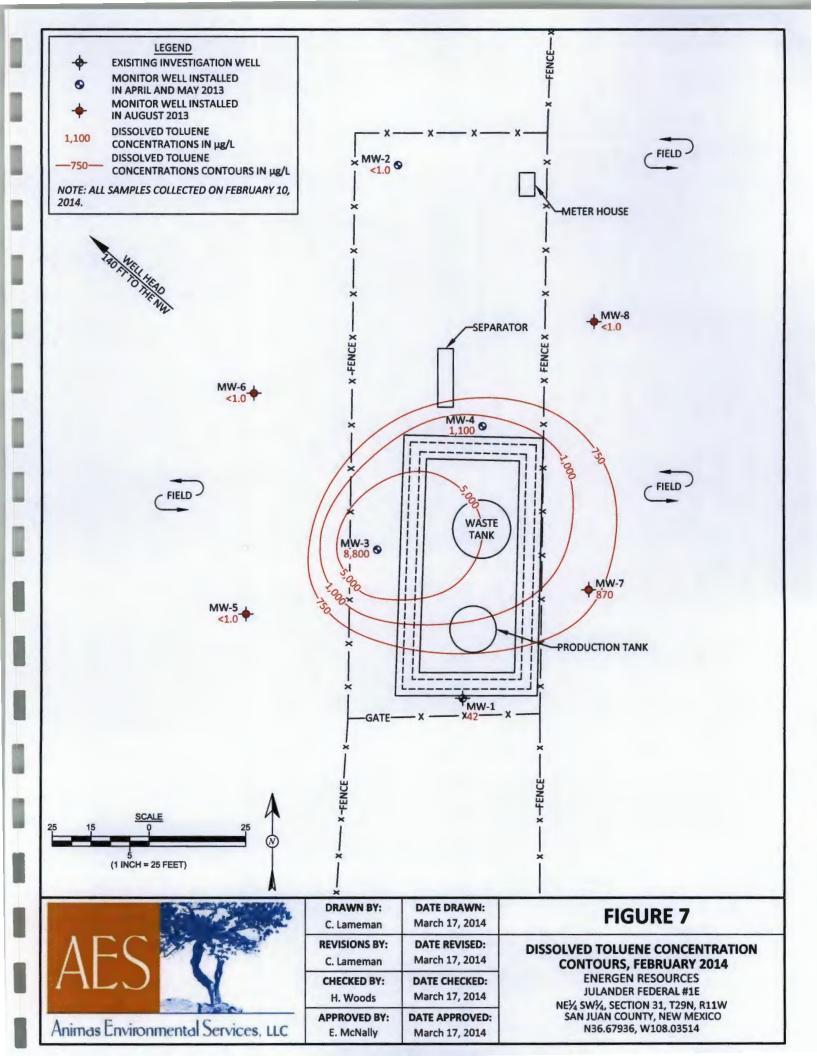
JULANDER FEDERAL #1E NE½ SW½, SECTION 31, T29N, R11W SAN JUAN COUNTY, NEW MEXICO N36.67936, W108.03514

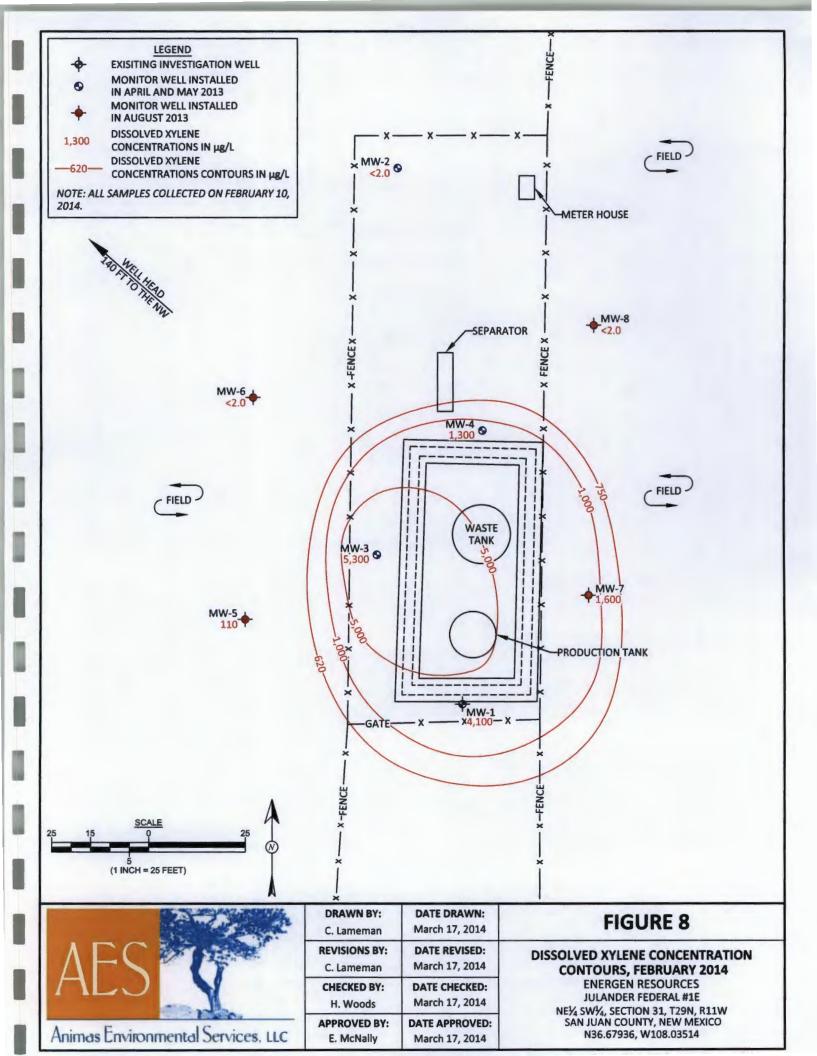
FIGURE 3

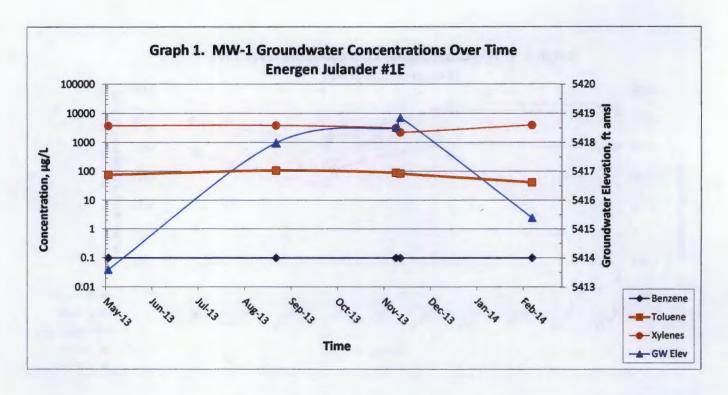


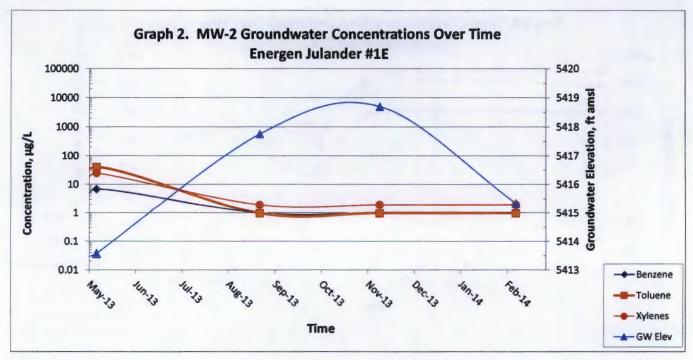


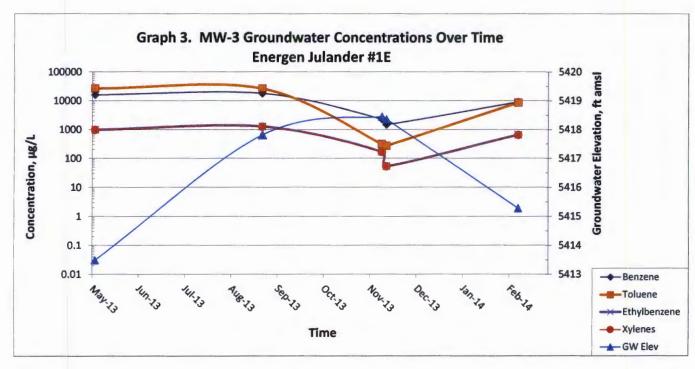


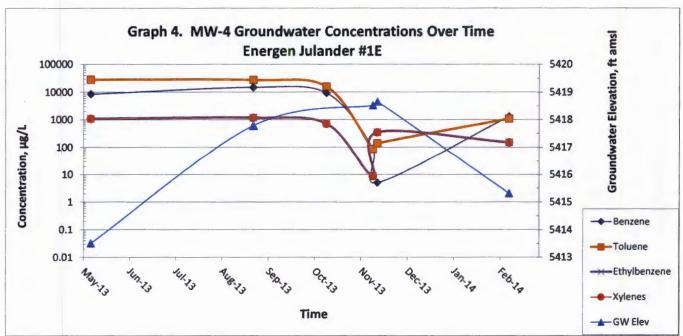


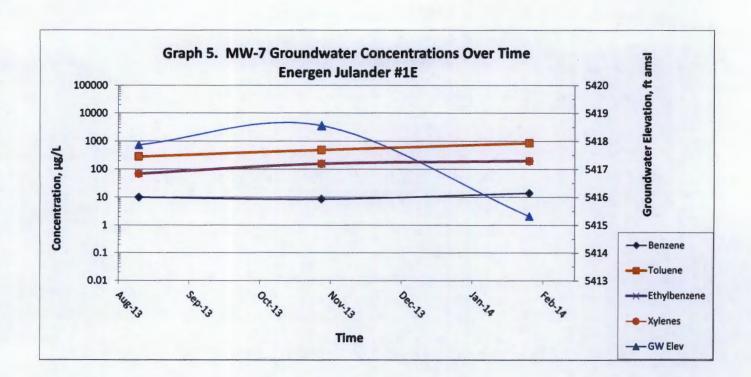












	LOCKING PLUG			DIA	GRAM	/ LITHOLOGY LOG MW	
	h	TOP OF	CASING			SB #1	
		TICK UP	(FT.)		NCE	4	
d	etti T	SE	SMP	HEADY	MOI	SAMPLE DESCRIPTION	ES CO
		NS	NS	NS	部級	Backfill Material/Sand	T
		_					1
							1
	30						1
	2 INCH PVC PLUSH	SW	CC	0.0		Medium Grained Sand — Yellowish orange, well sorted	-
	2 MICH PYC FLUSH JNT, THREADED SOHD 40 CASHO	-				sorted	1
6	тор вент						ļ
8	TOP SAND	SM	CC	0.0		Silty Sand — Yellowish orange Medium Grained Sand — Greenish gray on	1
0	TOP SCREEN					outside of boring, no odor, light brown, well	
	2 INCH PVC 0.010					sorted	
	2 NCH PVC 0.010 SCHD 40 FLUSH ANT THREADED SCREEN	CW	CC	1637		Bottom 1' (39'-40') moist, slight cohesion Medium Grained Sand — Light Brown, Wet, 1"	N
		DW	CC	1037		olive gray lense with hydrocarbon odor — sample	1
0	STM SCREEN					collected	
5	46.85						1
	Well Materials Used:		CC	110	NAME OF	Medium Grained Sand - 1' layer of dark gray	+
						sand (45'-46'), light brown sand (46'-50')	
	12 Sks 10-12 Silica Sand 2 Sks Bentonite Chips	SW	CC	0.0			-
	Sks Class "A" Cement Sks Quickcrete 50	-					1
	35 Ft Blank Casing —	_	CC	0.0		Medium Grained Sand — Light Brown, wet, no	1
	Well Development:					visual contamination	-
	Bailed Pumped						1
	17.25 Gallons of Water 5	5					1
	Remarks:					TD: 55 Feet	-
	<u>Static Water Level: 40.50 Feet</u> pH: 6.72; EC: 1.01 mS; Temp: 69.9 deg F						1
	-						+
L							
	LER: Christian Ortiz						_
	PER: Edmund Hart LING COMPANY: Envirodr	11	TOT	AL BO	RING	DEPTH: 55 Feet ELEVATION: 5,456 Ft O3 / 11 / 13 DATE COMPLETED 03 / 11 / 1.	3
DRIL	LING METHOD: Hollow Stem	Auge	SAN	IPLER	TYPE:	Continuous Core GEOLOGIST: Toni McKnight	
				FC	VIE	ROTECH INC.	
				-			



Report Summary

Client: Energen Resources

Chain Of Custody Number: 15281

Samples Received: 3/11/2013 4:35:00PM

Job Number: 03022-0193 Work Order: P303030

Project Name/Location: Julander Federal #1E

Entire Report Reviewed By:

Tim Cain, Laboratory Manager

Supplement to analytical report generated on: 3/15/13 1:45 pm

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

3/26/14

Date:



2010 Afton Place

Farmington NM, 87401

Project Name:

Julander Federal #1E

Project Number: Project Manager: 03022-0193

Etech

Reported:

26-Mar-14 15:56

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
soil/water at 40'-45'	P303030-01A	Soil	03/11/13	03/11/13	Glass Jar, 4 oz.

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Project Name:

Julander Federal #1E

2010 Afton Place Farmington NM, 87401 Project Number:

03022-0193

Project Manager:

Etech

Reported: 26-Mar-14 15:56

soil/water at 40'-45' P303030-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
Toluene	0.79	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
Ethylbenzene	1.42	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
p,m-Xylene	11.1	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
o-Xylene	1.33	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
Total BTEX	14.6	0.50	mg/kg	10	1311018	03/14/13	03/14/13	EPA 8021B	
Surrogate: Bromochlorobenzene		93.7 %	80-	-120	1311018	03/14/13	03/14/13	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	78.7	5.00	mg/kg	1	1311017	03/14/13	03/14/13	EPA 8015D	
Diesel Range Organics (C10-C28)	20.9	5.00	nıg/kg	1	1311017	03/14/13	03/14/13	EPA 8015D	
GRO and DRO Combined Fractions	99.6	5.00	mg/kg	1	1311017	03/14/13	03/14/13	EPA 8015D	

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5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

envirotech-inc.com

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

laboratory@envirotech-inc.com



Project Name:

Julander Federal #1E

Spike

Source

%REC

2010 Afton Place

Project Number:

Reporting

03022-0193

Reported:

Farmington NM, 87401

Project Manager: Etech 26-Mar-14 15:56

RPD

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1311018 - Purge and Trap EPA	5030A									
Blank (1311018-BLK1)				Prepared &	k Analyzed:	14-Mar-13	3			
Benzene	ND	0.05	mg/kg							
Toluene	ND	0.05	"							
Ethylbenzene	ND	0.05	"							
p,m-Xylene	ND	0.05	"							
o-Xylene	ND	0.05	н							
Total BTEX	ND	0.05	"							
Surrogate: Bromochlorobenzene	47.6		ug/L	50.0		95.1	80-120			
Duplicate (1311018-DUP1)	Source	e: P303038-	01	Prepared &	Analyzed:	14-Mar-13	3			
Benzene	0.52	0.50	mg/kg		0.59			13.2	30	
Toluene	26.1	0.50	**		25.5			2.24	30	
Ethylbenzene	12.5	0.50	#		12.0			4.29	30	
p,m-Xylene	146	0.50	**		133			9.81	30	
o-Xylene	30.3	0.50	11		27.6			9.33	30	
Surrogate: Bromochlorobenzene	52.8		ug/L	50.0		106	80-120			
Matrix Spike (1311018-MS1)	Source	e: P3030 38-	01	Prepared &	Analyzed:	14-Mar-13	3			
Benzene	50.3		ug/L	50.0	1.19	98.2	39-150			
Toluene	98.2		11	50.0	51.0	94.4	46-148			
Ethylbenzene	76.9		**	50.0	24.0	106	32-160			
p,m-Xylene	357		#	100	266	91.7	46-148			
o-Xylene	106		"	50.0	55.2	101	46-148			
Surrogate: Bromochlorobenzene	52.2		"	50.0		104	80-120			

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Project Name:

Julander Federal #1E

Spike

Source

2010 Afton Place Farmington NM, 87401 Project Number: Project Manager:

Reporting

03022-0193

Reported:

RPD

%REC

Etech

26-Mar-14 15:56

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1311017 - GRO/DRO Extractio	n EPA 3550C									
Blank (1311017-BLK1)				Prepared &	2 Analyzed	14-Mar-13				
Gasoline Range Organics (C6-C10)	ND	4.99	mg/kg							
Diesel Range Organics (C10-C28)	ND	4.99	11							
GRO and DRO Combined Fractions	ND	4.99	**							
Duplicate (1311017-DUP1)	Source	e: P303038-	02	Prepared &	z Analyzed:	14-Mar-13				
Gasoline Range Organics (C6-C10)	997	5.00	mg/kg		996			0.104	30	
Diesel Range Organics (C10-C28)	170	5.00	"		169			0.839	30	
Matrix Spike (1311017-MS1)	Sourc	e: P303038-	02	Prepared &	k Analyzed:	14-Mar-13				
Gasoline Range Organics (C6-C10)	1240		mg/L	225	996	107	75-125			
Diesel Range Organics (C10-C28)	426		u	250	169	103	75-125			

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Farmington NM, 87401

Project Name:

Project Manager:

Julander Federal #1E

2010 Afton Place

Project Number: 03022-0193

Etech

Reported:

26-Mar-14 15:56

Notes and Definitions

DET

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

dry

Sample results reported on a dry weight basis

RPD

Relative Percent Difference

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CHAIN OF CUSTODY RECORD

15281

Page 7 of 7

5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com	☐ Sample(s) dropped off after hours to secure drop off area.	Sample Matrix Soil Solid Sludge A	: (Sigr	Jon Mchaga	Relinquished by: (Signature)						Soil/water at 40.45 3/1/13	Sample No./ Identification	Client Phone No.:	Email results to:	Client: Energen
Farmingto	ours to sect	Aqueous 🗌		A.						•		Sample Date			
n, NM 87401	are drop off	Other 🗆 _									11:27	Sample Time	Cile	San	J Po
• 505-632-0615 • 1	area.										P303030-01	Lab No.	Client No.: 03022-0193	Sampler Name: T. McKaight	Project Name / Location: Tulander Federal #/E
Three Springs • 65 h	envirotech Analytical Laboratory			3/4/13 16:35	Date Time						1-402	No./Volume of Containers	193	ght	ederal #1
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Report Summary

Client: Energen Resources

Chain Of Custody Number: 15297

Samples Received: 3/14/2013 4:08:00PM

Job Number: 03022-0193 Work Order: P303046

Project Name/Location: Julander Federal #1E

Entire Report Reviewed By:

Date: 3/15/13

Tim Cain, Laboratory Manager

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Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Borehole #1	P303046-01A	Aqueous	03/14/13	03/14/13	Voa vial, 40mL, HCl
	P303046-01B	Aqueous	03/14/13	03/14/13	Voa vial, 40mL, HCl
	P303046-01C	Aqueous	03/14/13	03/14/13	Voa vial, 40mL, HCl

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Borehole #1 P303046-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	23.8	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Toluene	289	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Ethylbenzene	401	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
p,m-Xylene	2560	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
o-Xylene	727	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Total BTEX	4000	1.00	ug/L	1	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Surrogate: Bromochlorobenzene		104 %	80-	120	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.2 %	80-	120	1311028	15-Mar-13	15-Mar-13	EPA 8021B	
Surrogate: Fluorobenzene		100 %	80-	120	1311028	15-Mar-13	15-Mar-13	EPA 8021B	

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1-b-----



Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1311028 - Purge and Trap EPA 5030A										
Blank (1311028-BLK1)				Prepared &	2 Analyzed	15-Mar-13	3			
Benzene	ND	50.0	ug/L							
Toluene	ND	50.0	"							
Ethylbenzene	ND	50.0	**							
p,m-Xylene	ND	50.0	**							
o-Xylene	ND	50.0	"							
Total BTEX	ND	50.0	"							
Surrogate: Bromochlorobenzene	47.0		"	50.0		94.0	80-120			
Surrogate: 1,4-Difluorobenzene	50.4		"	50.0		101	80-120			
Surrogate: Fluorobenzene	49.3		"	50.0		98.6	80-120			
Duplicate (1311028-DUP1)	Sou	rce: P303046-	01	Prepared &	Analyzed	15-Mar-13	3			
Benzene	23.0	1.00	ug/L		23.8			3.32	200	
Toluene	285	1.00	*		289			1.55	200	
Ethylbenzene	395	1.00	"		401			1.52	200	
p,m-Xylene	2500	1.00	"		2560			2.18	200	
o-Xylene	714	1.00	**		727			1.68	200	
Surrogate: Bromochlorobenzene	50.3		"	50.0		101	80-120			
Surrogate: 1,4-Difluorobenzene	49.1		"	50.0		98.2	80-120			
Surrogate: Fluorobenzene	50.7		"	50.0		101	80-120			
Matrix Spike (1311028-MS1)	Sou	rce: P303046-	01	Prepared &	Analyzed	15-Mar-13	}			
Benzene	72.3		ug/L	50.0	23.8	97.1	39-150			
Toluene	327		**	50.0	289	76.1	46-148			
Ethylbenzene	441		**	50.0	401	79.4	32-160			
p,m-Xylene	2510		**	100	2560	NR	46-148			S2
o-Xylene	761		"	50.0	727	68.3	46-148			
Surrogate: Bromochlorobenzene	50.3		"	50.0		101	80-120			
Surrogate: 1,4-Difluorobenzene	46.0		"	50.0		92.1	80-120			
Surrogate: Fluorobenzene	47.4		"	50.0		94.8	80-120			

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Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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* RUS# *

CHAIN OF CUSTODY RECORD

15297

Page 6 of 6

Client: Energen		1 2	Project Name / Location:	redead.	# 1 元		i			≥	ALY	SIS /	PAF	AME	ANALYSIS / PARAMETERS				
Email results to:		/ &	Sampler Name: Mcknight	typ		3015)	1 8021)	8260)	s			•	1						
Client Phone No.:		Ω	Client No.: 03022-0193	33		Method 8	(Method	Method	8 Metal	/ Anion		with H/P	ble 910-	18.1)	RIDE			e Conl	intact
Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative		BTEX	VOC (I	RCRA	Cation	RCI	TCLP	CO Tai	TPH (4	CHLO			Sample	
Brehole #1	%	14:30	P303046-01 A1816 VOAS	13 TVOAS	7	7	<											<	7
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5795 US Highway 6	4 • Farmingto	on, NM 874	5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com	Three Springs • 65	Mercado Stree	t, Suite	115, [) Tan	ζ Ο	0813	2 :	abor	atory	@eл\	/irotech	T-inc.c	3		

san juan reproduction 578-129

Photo #1

Client: Energen Resources Corporation

Project: Julander Federal #1E

Taken by: Heather Woods

> Date: May 1, 2013

AES Project No. 130411

Description:

Example of Simco direct push drilling rig and equipment used to install MW-2

Photo #2

Client: Energen Resources Corporation

Project: Julander Federal #1E

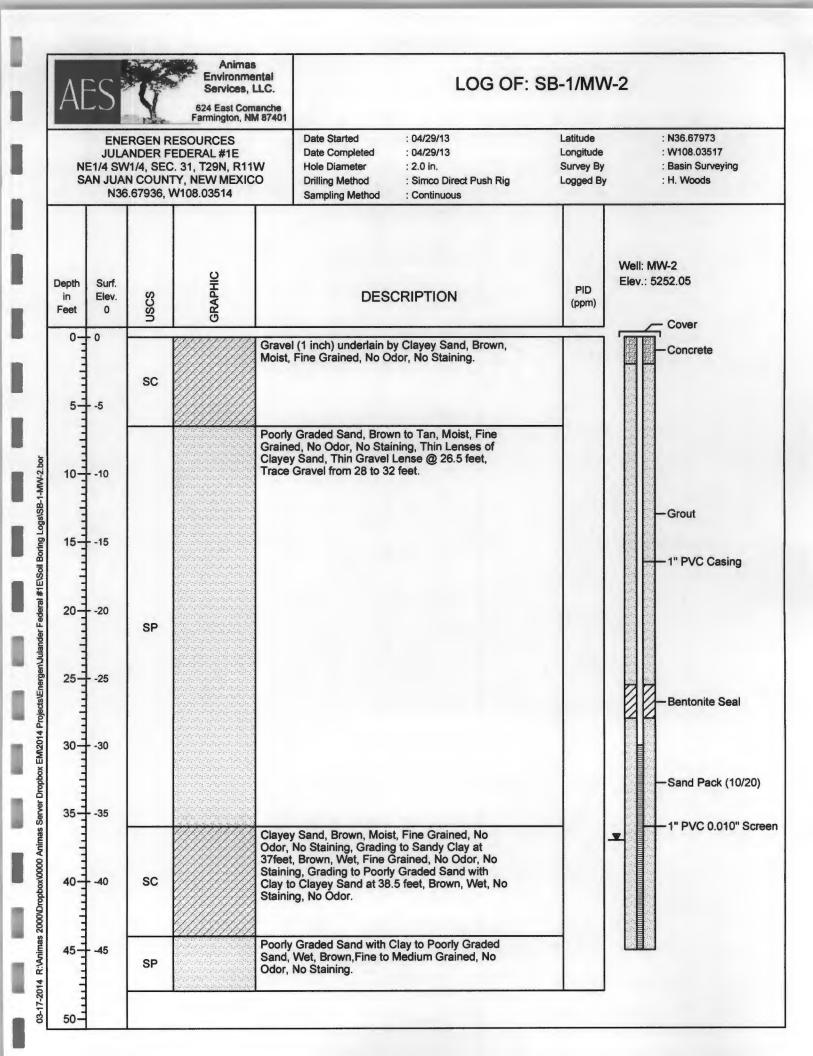
Taken by: Heather Woods

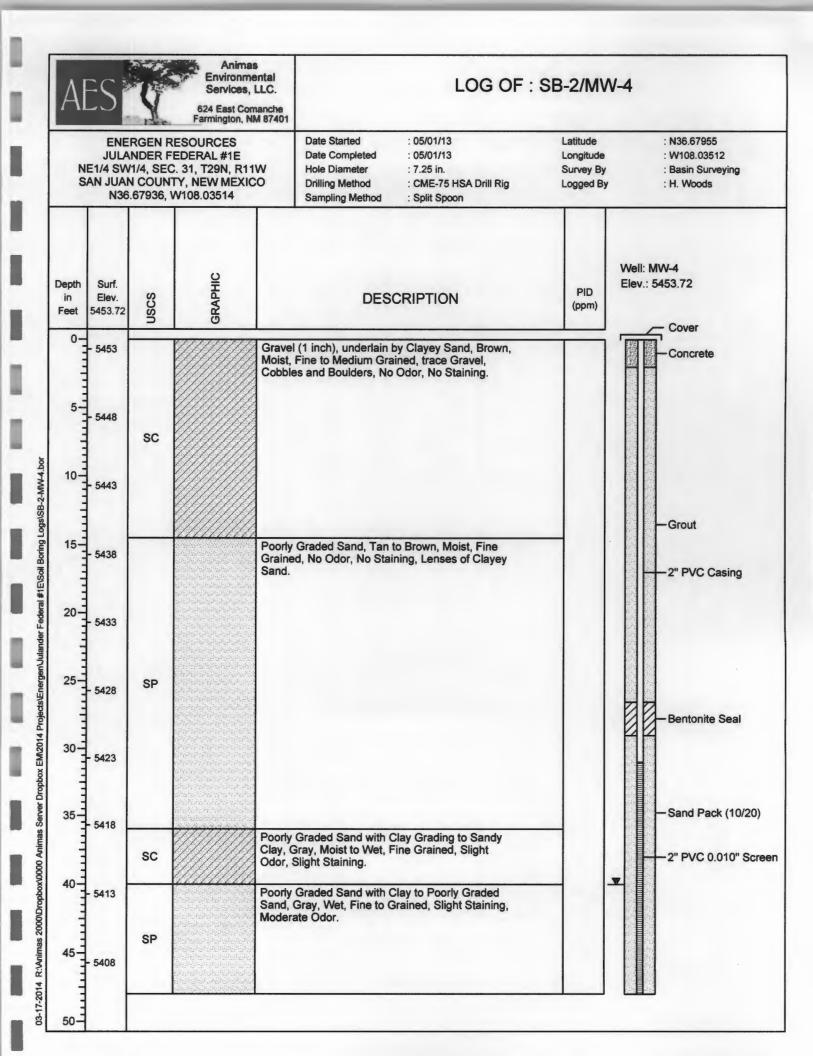
Date: August 16, 2013

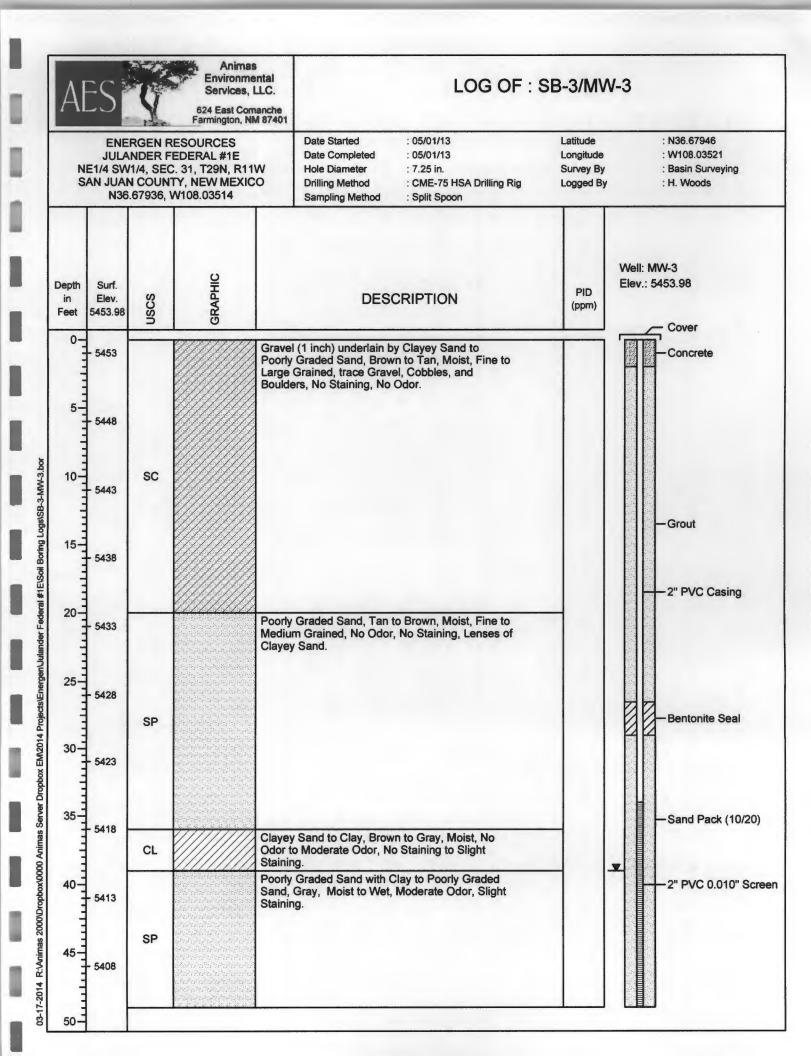
AES Project No. 130411 Description:

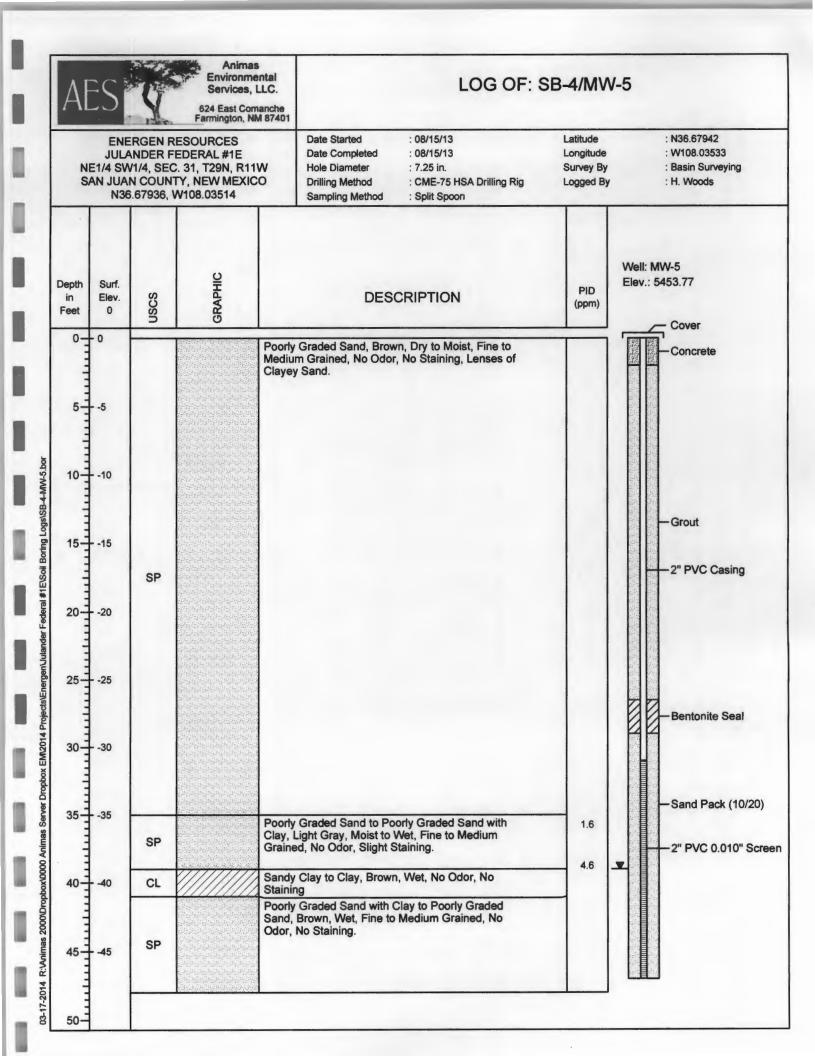
View of CME-75 drill rig installing SB-7/MW-8.

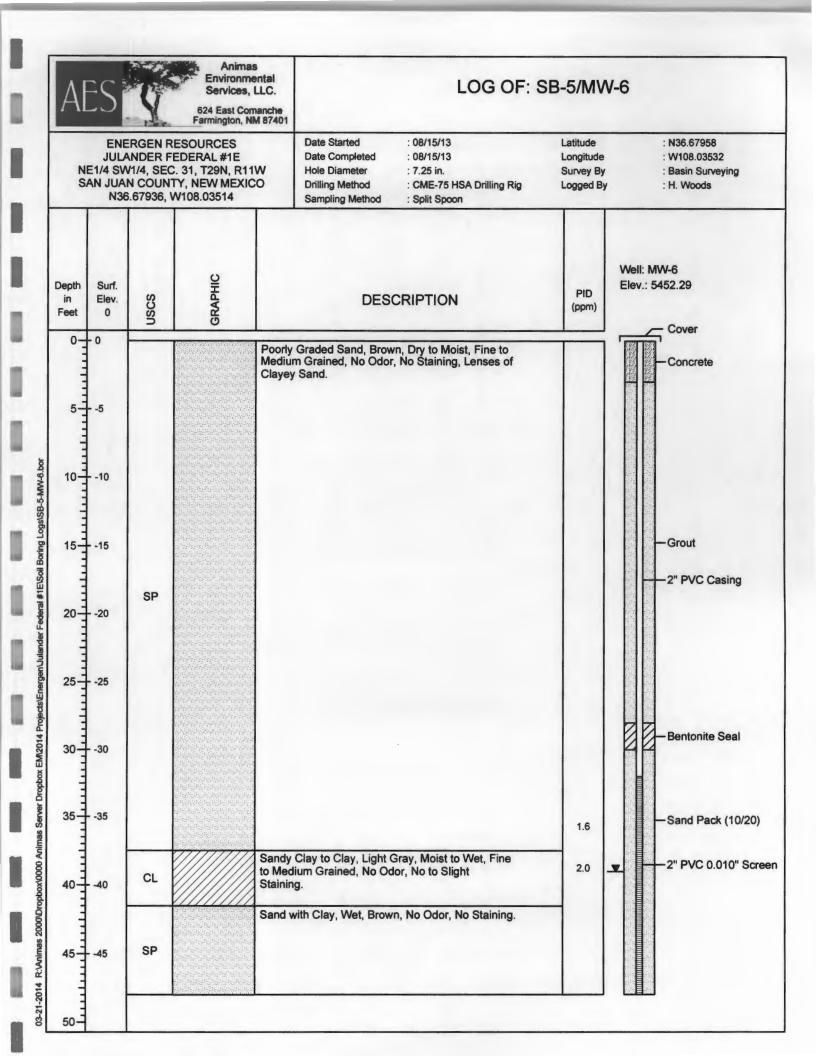


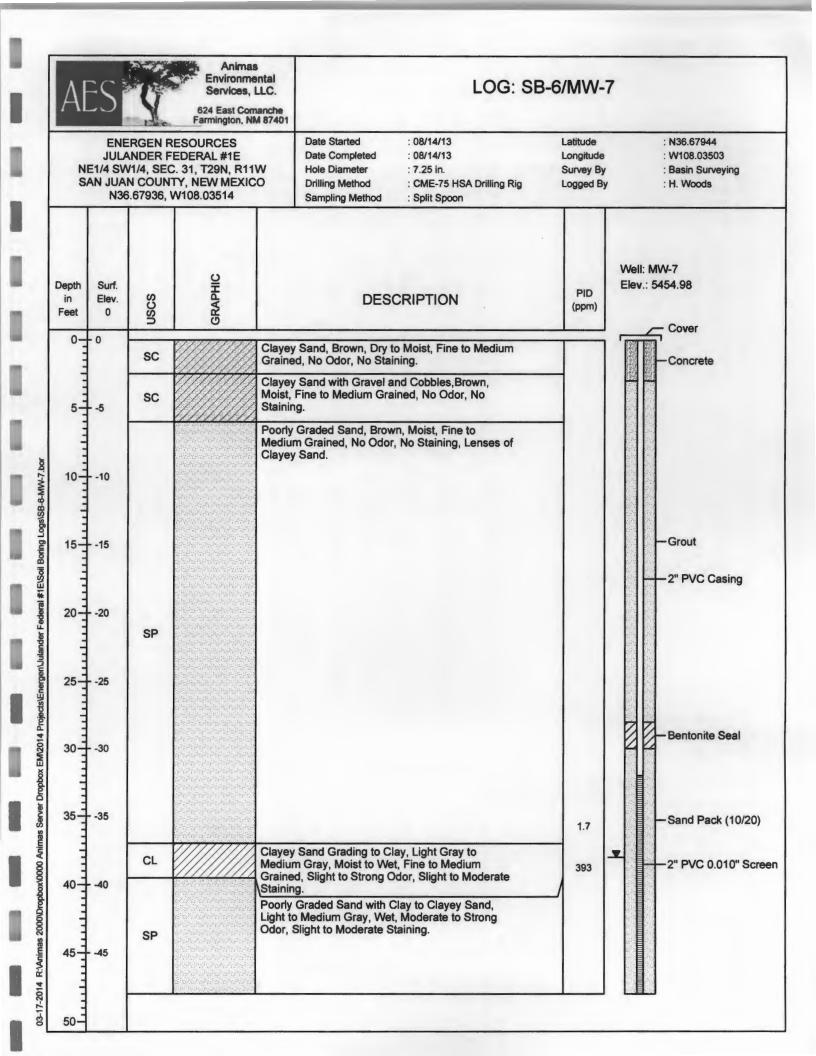


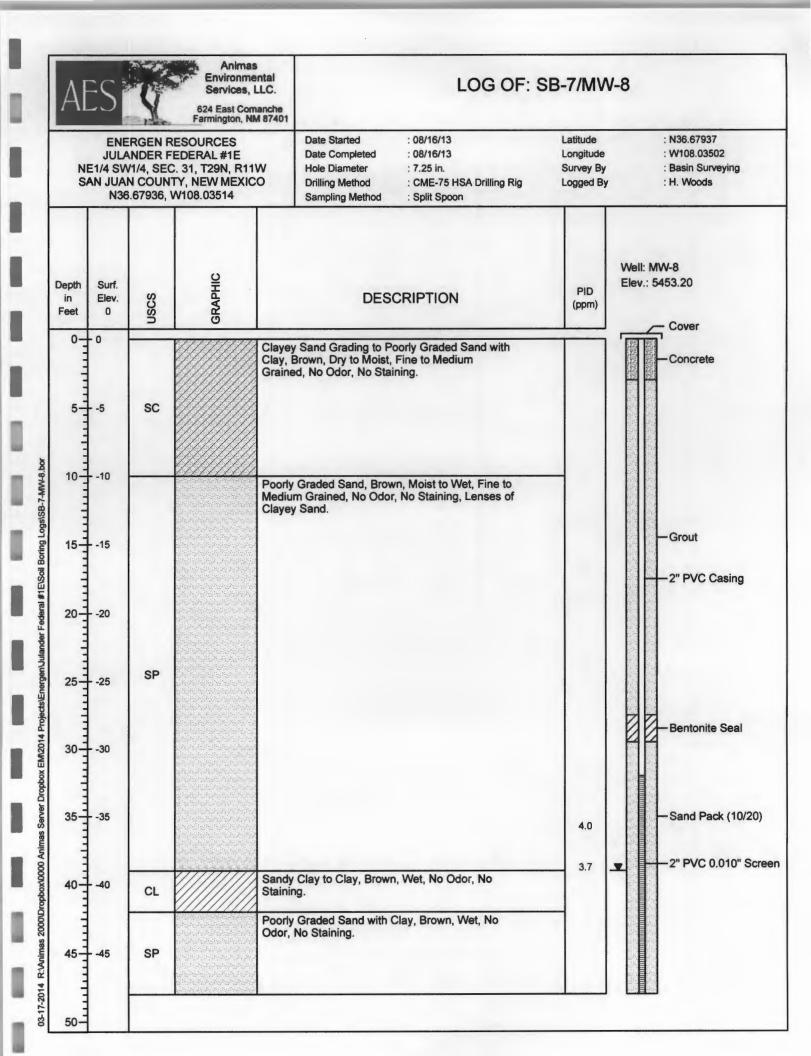














Report Summary

Client: Animas Environmental Services

Chain Of Custody Number: 15462

Samples Received: 4/29/2013 4:00:00PM

Job Number: 99083-0001 Work Order: P304088

Project Name/Location: Energen Julander Fed

#1E

Entire Report Reviewed By:

Date: 4/30/13

Tim Cain, Laboratory Manager

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624 E. Comanche St.

Farmington NM, 87401-6815

Project Name:

Energen Julander Fed #1E

Project Number: Project Manager: 99083-0001

Heather Woods

Reported:

30-Apr-13 11:23

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
MW-Y	P304088-01A	Water	04/29/13	04/29/13	Voa vial, 40mL, HCl
4W 3/21/14	P304088-01B	Water	04/29/13	04/29/13	Voa vial, 40mL, HCl
	P304088-01C	Water	04/29/13	04/29/13	Voa vial, 40mL, HCl

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Farmington NM, 87401-6815

Project Name:

Energen Julander Fed #1E

624 E. Comanche St.

Project Number: Project Manager: 99083-0001 Heather Woods Reported: 30-Apr-13 11:23

MW-1 2 Aw 3/21/14 P304088-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	1.00	ug/L	1	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
Toluene	ND	1.00	ug/L	1	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
3thylbenzene	ND	1.00	ug/L	1	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
p,m-Xylene	7.66	1.00	ug/L	1	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
>-Xylene	4.34	1.00	ug/L	1	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
Total BTEX	12.0	1.00	ug/L	1	1318008	29-Apr-13	29-Арт-13	EPA 8021B	
Surrogate: Bromochlorobenzene		95.8 %	80-1	120	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.8 %	80-1	120	1318008	29-Apr-13	29-Apr-13	EPA 8021B	
Surrogate: Fluorobenzene		94.5 %	80-1	120	1318008	29-Apr-13	29-Apr-13	EPA 8021B	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

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Farmington NM, 87401-6815

624 E. Comanche St.

Project Name:

Energen Julander Fed #1E

Project Number:

99083-0001

Project Manager:

Heather Woods

Reported:

30-Apr-13 11:23

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1318008 - Purge and Trap EPA 5030A						······		***		
Blank (1318008-BLK1)				Prepared &	Analyzed:	29-Apr-13				
Benzene	ND	1.00	ug/L							
Toluene	ND	1.00	**							
Ethylbenzene	ND	1.00	n							
p,m-Xylene	ND	1.00	#							
o-Xylene	ND	1.00	u							
Total BTEX	ND	1.00	•							
Surrogute: Bromochlorohenzene	47.0		н	50.0		94.0	80-120			
Surrogate: 1,4-Difluorobenzene	48.9		"	50.0		97,8	80-120			
Surrogate: Fluorobenzene	48.6		и	50.0		97.3	80-120			
Duplicate (1318008-DUP1)	Sou	rce: P304088-	01	Prepared &	: Analyzed:	29-Apr-13				
Benzene	ND	1.00	ug/L		ND				30	
Toluene	ND	1.00	**		ND				30	
Ethylbenzene	ND	1.00	ŧi		ND				30	
o,in-Xylene	7.96	1,00	**		7,66			3,75	30	
o-Xylene	4.56	1.00	**		4.34			4.88	30	
Surrogate: Bromochlorobenzene	49.9		11	50.0		99.8	80-120			
Surrogate: 1,4-Difluorobenzene	49.5		ii.	50.0		99.1	80-120			
Surrogate: Fluorobenzene	49.4		Ħ	50.0		98.7	80-120			
Matrix Spike (1318008-MS1)	Sou	rce: P3 04088-0	01	Prepared &	Analyzed:	29-Apr-13				
3enzene	49.7	1.00	ug/L	50.0	ND	99.4	39-150			
Toluene	49.5	1.00	H	50.0	ND	99.0	46-148			
Ethylbenzene	49.2	1.00	я	50.0	ND	98.4	32-160			
o,m-Xylene	105	1.00	и	100	7.66	97.3	46-148			
-Xylene	52,8	1.00	11	50.0	4.34	96.9	46-148			
Surrogate: Bromochlorobenzene	49.5	***************************************	#	50.0		98.9	80-120			
iurrogate: 1,4-Difluorobenzene	47.9		н	50.0		95.9	80-120			
Surrogate: Fluorobenzene	48.1		*	50.0		96.2	80-120			

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laboratory@envirotech_inc.com

envirotech inc.com



Farmington NM, 87401-6815

Project Name:

Energen Julander Fed #1E

624 E. Comanche St.

Project Number: Project Manager: 99083-0001

Heather Woods

Reported: 30-Apr-13 11:23

Notes and Definitions

DET

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

dry

Sample results reported on a dry weight basis

RPD

Relative Percent Difference

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HSNSH

CHAIN OF CUSTODY RECORD

15462

Entropie Lab No. No. Volume Presentative No. Volume No. Volume	Animas Environmental Services Email results to: huxads@chimasenvirondel Sampler Name: 7 rKemener@ animasenvironmental.com Client Phorie No.: 505-51e4-2281 Sample No./ Identification Sample No./ Identification Date Time Lab No. MW-X2 Huxall Helinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature) Sample Natrix Soil Soild Sludge Aqueous Mother Sample Sample Sample Sample Natrix Soil Soild Sludge Aqueous Mother Sample Sample Natrix Soil Soild Sludge Aqueous Mother Sample Sample Natrix Soil Soil Soild Sludge Aqueous Mother Sample Nation of the second Appendix Advanced of the four of the second Appendix Append
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san juan reproduction 578-129



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

OrderNo.: 1308A96

August 26, 2013

Ross Kennemer Animas Environmental Services 624 East Comanche Farmington, NM 87401

TEL: (505) 486-1776 FAX (505) 324-2022

RE: Energen Julander Federal #1E

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory received 9 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-1

Project: Energen Julander Federal #1E Collection Date: 8/23/2013 2:25:00 PM Lab ID: 1308A96-001 Matrix: AQUEOUS Received Date: 8/24/2013 10:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	10	μg/L	10	8/24/2013 3:35:50 PM	R12864
Toluene	110	10	μg/L	10	8/24/2013 3:35:50 PM	R12864
Ethylbenzene	470	10	μg/L	10	8/24/2013 3:35:50 PM	R12864
Xylenes, Total	4000	100	μg/L	50	8/24/2013 3:07:11 PM	R12864
Surr: 4-Bromofluorobenzene	116	69.4-129	%REC	10	8/24/2013 3:35:50 PM	R12864

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Page 1 of 11 P Sample pH greater than 2 for VOA and TOC only.
- RLReporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Federal #1E

Lab ID: 1308A96-002

Client Sample ID: MW-2

Collection Date: 8/23/2013 10:42:00 AM

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES	-				Analy	st: NSB
Benzene	ND	1.0	μg/L	1	8/24/2013 5:30:18 PM	R12864
Toluene	ND	1.0	μg/L	1	8/24/2013 5:30:18 PM	R12864
Ethylbenzene	ND	1.0	μg/L	1	8/24/2013 5:30:18 PM	R12864
Xylenes, Total	ND	2.0	μg/L	1	8/24/2013 5:30:18 PM	R12864
Surr: 4-Bromofluorobenzene	102	69.4-129	%REC	1	8/24/2013 5:30:18 PM	R12864

Matrix: AQUEOUS

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

- 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
- 11 Holding times for preparation of analysis exceede
- ND Not Detected at the Reporting Limit Page 2 of 11
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-3

Project: Energen Julander Federal #1E

Collection Date: 8/23/2013 3:05:00 PM

Lab ID: 1308A96-003

Matrix: AQUEOUS Received Date: 8

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

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES	77.11			Analys	st: NSB
Benzene	18000	500	μg/L	500 8/24/2013 5:58:54 PM	R12864
Toluene	27000	500	μg/L	500 8/24/2013 5:58:54 PM	R12864
Ethylbenzene	1300	100	μg/L	100 8/24/2013 6:27:32 PM	R12864
Xylenes, Total	12000	200	μg/L	100 8/24/2013 6:27:32 PM	R12864
Surr: 4-Bromofluorobenzene	111	69.4-129	%REC	100 8/24/2013 6:27:32 PM	R12864

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

- 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

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

En ans an Index day Endagel #1E

Energen Julander Federal #1E

Lab ID: 1308A96-004

Project:

Client Sample ID: MW-4

Collection Date: 8/23/2013 4:09:00 PM

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

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES				Analys	st: NSB
Benzene	15000	500	μg/L	500 8/24/2013 7:24:46 PM	R12864
Toluene	28000	500	μg/L	500 8/24/2013 7:24:46 PM	R12864
Ethylbenzene	1200	100	μg/L	100 8/24/2013 7:53:24 PM	R12864
Xylenes, Total	11000	200	μg/L	100 8/24/2013 7:53:24 PM	R12864
Surr: 4-Bromofluorobenzene	109	69.4-129	%REC	100 8/24/2013 7:53:24 PM	R12864

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

- * 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 Page 4 of 11
 - P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Analytical Report Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-5

Energen Julander Federal #1E Project:

Collection Date: 8/23/2013 1:25:00 PM

Lab ID:

1308A96-005

Matrix: AQUEOUS

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	5.3	2.0	μg/L	2	8/25/2013 1:15:24 PM	R12869
Toluene	ND	2.0	μg/L	2	8/25/2013 1:15:24 PM	R12869
Ethylbenzene	ND	2.0	μg/L	2	8/25/2013 1:15:24 PM	R12869
Xylenes, Total	29	4.0	μg/L	2	8/25/2013 1:15:24 PM	R12869
Surr: 4-Bromofluorobenzene	104	69.4-129	%REC	2	8/25/2013 1:15:24 PM	R12869

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

- 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
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- Page 5 of 11 Sample pH greater than 2 for VOA and TOC only. P
- RL Reporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-6

Project: Energen Julander Federal #1E

Collection Date: 8/23/2013 12:38:00 PM

Lab ID: 1308A96-006

Matrix: AQUEOUS

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES	-				Analys	t: NSB
Benzene	ND	2.0	μg/L	2	8/25/2013 2:12:35 PM	R12869
Toluene	ND	2.0	μg/L	2	8/25/2013 2:12:35 PM	R12869
Ethylbenzene	ND	2.0	μg/L	2	8/25/2013 2:12:35 PM	R12869
Xylenes, Total	ND	4.0	μg/L	2	8/25/2013 2:12:35 PM	R12869
Surr: 4-Bromofluorobenzene	102	69.4-129	%REC	2	8/25/2013 2:12:35 PM	R12869

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

- 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 Page 6
- ND Not Detected at the Reporting Limit Page 6 of 11
 P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-7

Project: Energen Julander Federal #1E

Collection Date: 8/23/2013 3:24:00 PM

Lab ID: 1308A96-007

Matrix: AQUEOUS

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	10	μg/L	10	8/25/2013 3:10:02 PM	R12869
Toluene	290	10	μg/L	10	8/25/2013 3:10:02 PM	R12869
Ethylbenzene	70	10	μg/L	10	8/25/2013 3:10:02 PM	R12869
Xylenes, Total	630	20	μg/L	10	8/25/2013 3:10:02 PM	R12869
Surr: 4-Bromofluorobenzene	109	69.4-129	%REC	10	8/25/2013 3:10:02 PM	R12869

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

- 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 Page
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander Federal #1E

Lab ID: 1308A96-008 Client Sample ID: MW-8

Collection Date: 8/23/2013 11:38:00 AM

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8021B: VOLATILES					Analys	st: NSB	
Benzene	ND	2.0	μg/L	2	8/25/2013 5:04:41 PM	R12869	
Toluene	ND	2.0	μg/L	2	8/25/2013 5:04:41 PM	R12869	
Ethylbenzene	ND	2.0	μg/L	2	8/25/2013 5:04:41 PM	R12869	
Xylenes, Total	ND	4.0	μg/L	2	8/25/2013 5:04:41 PM	R12869	
Surr: 4-Bromofluorobenzene	101	69.4-129	%REC	2	8/25/2013 5:04:41 PM	R12869	

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range Ε
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 8 of 11
- Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

Lab Order 1308A96

Date Reported: 8/26/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander Federal #1E

Client Sample ID: Trip Blank

Collection Date:

Lab ID: 1308A96-009

Project:

Matrix: TRIP BLANK R

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	1.0	μg/L	1	8/25/2013 2:33:56 AM	R12864
Toluene	ND	1.0	μg/L	1	8/25/2013 2:33:56 AM	R12864
Ethylbenzene	ND	1.0	µg/L	1	8/25/2013 2:33:56 AM	R12864
Xylenes, Total	ND	2.0	µg/L	1	8/25/2013 2:33:56 AM	R12864
Surr: 4-Bromofluorobenzene	100	69.4-129	%REC	1	8/25/2013 2:33:56 AM	R12864

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

- 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 Page (
 - P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1308A96

26-Aug-13

Client: Animas Environmental Services
Project: Energen Julander Federal #1E

Sample ID 5ML RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBW Batch ID: R12864 RunNo: 12864 Prep Date: Analysis Date: 8/24/2013 SeqNo: 366697 Units: µg/L Analyte SPK value SPK Ref Val %REC %RPD **RPDLimit** PQL LowLimit HighLimit Qual Benzene ND 1.0 Toluene ND 1.0 1.0 Ethylbenzene ND 2.0 Xylenes, Total ND 20.00 103 69.4 Surr: 4-Bromofluorobenzene 21 129

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSW Batch ID: R12864 RunNo: 12864 Prep Date: Analysis Date: 8/24/2013 SeqNo: 366698 Units: µg/L Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 20.00 21 1.0 0 105 80 120 Benzene 1.0 Toluene 21 20.00 0 103 80 120 Ethylbenzene 21 1.0 20.00 0 106 80 120 0 Xylenes, Total 64 2.0 60.00 107 80 120 21 20.00 129 Surr: 4-Bromofluorobenzene 69.4

Sample ID 1308A96-001AMS SampType: MS TestCode: EPA Method 8021B: Volatiles Client ID: Batch ID: R12864 RunNo: 12864 Prep Date: Analysis Date: 8/24/2013 SeqNo: 366701 Units: µg/L Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 220 10 200.0 0 108 73.4 119 Toluene 320 10 200.0 108.8 107 80 120 690 10 200.0 469.8 80 120 Ethylbenzene 111 Xylenes, Total 4300 20 600.0 3655 114 80 120 Ε Surr: 4-Bromofluorobenzene 240 200.0 118 69.4 129

Sample ID 1308A96-001AM	ISD SampT	ype: MS	SD	Tes	tCode: E	PA Method	8021B: Volati	iles		
Client ID: MW-1	Batch	ID: R1	2864	F	RunNo: 1	2864				
Prep Date:	Analysis D	ate: 8/	24/2013	8	SeqNo: 3	66702	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	200	10	200.0	0	98.3	73.4	119	9.73	20	
Toluene	290	10	200.0	108.8	90.0	80	120	10.9	20	
Ethylbenzene	630	10	200.0	469.8	78.9	80	120	9.63	20	S
Xylenes, Total	3900	20	600.0	3655	49.0	80	120	9.46	20	SE
Surr: 4-Bromofluorobenzene	240		200.0		118	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

Page 10 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#:

RPDLimit

1308A96

26-Aug-13

Qual

Client:

Animas Environmental Services

Project:

Energen Julander Federal #1E

Sample ID 5ML RB SampType: MBLK
Client ID: PBW Batch ID: R1286

TestCode: EPA Method 8021B: Volatiles
RunNo: 12869

Batch ID: R12869 RunNo: 12869

Prep Date: Analysis Date: 8/25/2013 SeqNo: 366799 Units: µg/L

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD Benzene ND 1.0 Toluene ND 1.0 Ethylbenzene ND 1.0 Xylenes, Total ND 2.0 Surr: 4-Bromofluorobenzene 20 20.00 102 69.4 129

Sample ID 100NG BTEX LO	CS Samp	SampType: LCS TestCode: EPA Method 8021B: Volatiles									
Client ID: LCSW	Batc	h ID: R1	2869	F	RunNo: 1	2869					
Prep Date:	Analysis [Date: 8/	/25/2013	\$	SeqNo: 3	66800	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	21	1.0	20.00	0	106	80	120				
Toluene	21	1.0	20.00	0	103	80	120				
Ethylbenzene	21	1.0	20.00	0	105	80	120				
Xylenes, Total	63	2.0	60.00	0	106	80	120				
Surr: 4-Bromofluorobenzene	21		20.00		105	69.4	129				

Sample ID 1308A96-007AM	I S SampT	ype: MS	3	TestCode: EPA Method 8021B: Volatiles							
Client ID: MW-7	Batch	iD: R1	2869	F	RunNo: 1	2869					
Prep Date:	Analysis D	ate: 8/	25/2013	S	SeqNo: 3	66805	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	220	10	200.0	4.500	105	73.4	119				
Toluene	510	10	200.0	287.6	111	80	120				
Ethylbenzene	290	10	200.0	70.03	108	80	120				
Xylenes, Total	1300	20	600.0	631.1	109	80	120				
Surr: 4-Bromofluorobenzene	220		200.0		110	69.4	129				

Sample ID 1308A96-007AN	ISD SampT	ype: MS	SD	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID: MW-7	Batch	ID: R1	2869	F	RunNo: 1	2869				
Prep Date:	Analysis D	ate: 8/	25/2013	8	SeqNo: 3	66806	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	200	10	200.0	4.500	96.8	73.4	119	8.30	20	
Toluene	460	10	200.0	287.6	88.6	80	120	9.01	20	
Ethylbenzene	260	10	200.0	70.03	94.9	80	120	9.75	20	
Xylenes, Total	1200	20	600.0	631.1	92.1	80	120	8.18	20	
Surr: 4-Bromofluorobenzene	220		200.0		112	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

Page 11 of 11



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com RcptNo: 1 Work Order Number: 1308A96 Client Name: **Animas Environmental** 08/24/13 Received by/date: Micrell Garies Micrell Garies Logged By: 8/24/2013 10:20:00 AM Michelle Garcia Michelle Garcia 8/24/2013 10:47:10 AM Completed By: Reviewed By: Chain of Custody Yes !! No : : Not Present ✓ 1. Custody seals intact on sample bottles? No : Not Present Yes ✓ 2. Is Chain of Custody complete? 3 How was the sample delivered? Courier Log In No ! NA: Yes 🗸 4. Was an attempt made to cool the samples? No ! ! NA ! : 5. Were all samples received at a temperature of >0° C to 6.0°C No Sample(s) in proper container(s)? No ! 7. Sufficient sample volume for indicated test(s)? No i 8. Are samples (except VOA and ONG) properly preserved? No 🗸 NA : i 9. Was preservative added to bottles? No ! No VOA Vials 10.VOA vials have zero headspace? Yes 11. Were any sample containers received broken? # of preserved bottles checked for pH: No 12. Does paperwork match bottle labels? Yes 🗸 (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No ! : 13. Are matrices correctly identified on Chain of Custody? No 14. Is it clear what analyses were requested? Yes V Checked by: No 15. Were all holding times able to be met? Yes 🗸 (If no, notify customer for authorization.) Special Handling (If applicable) Yes ! | No 16. Was client notified of all discrepancies with this order? NA :V Person Notified: Date: By Whom: Via: eMail | Phone | Fax Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No | Temp °C Condition | Seal Intact | Seal No Seal Date Good

Same Day - Results HALL ENVIRONMENTAL	8/26 before 4:00pm ANALYSIS LABORATORY	www.hallenvironmental.com	E 4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request				(V)		BTEX (8021	×	-(x02) x	-053 x			$-c_{\Sigma}(_{o} \times \mathbf{x})$	x Cos-	-(-C-C-S x	-(x,0		 -	8/23/13 1745	Date Time 8 24/15 10,20	in a flow.
	☐ Standard X Rush_	Project Name:	Energen Julander Federal #1E	Project #:		Project Manager:		Ross Kennemer	Sampler:		Container Preservative Type and # Type	3-40 ml VOA HCI	3 - 40 ml VOA HC!	3 - 40 ml VOA	3 - 40 mi VOA HCI	3 - 40 ml VOA HCI	3 - 40 ml VOA HCI	3 - 40 ml VOA	3 - 40 ml VOA HCI	2 - 40 mL VOA		-	the Class	Received by:	111111111111111111111111111111111111111
Animas Environmenal Services, LLC		Proje	624 E. Comanche Ener		281			☐ Level 4 (Full Validation) Ros	Sam		Sample Request ID Co	MW-1 3-4	MW-2 3 - 4	MW-3 3 -4	MW-4 3-4	MW-5 3-4	MW-6 3 - 4	MW-7	MW-8 3-4	Trip Blank 2 - 4		Re	-6	Aby:	<i>N</i>
s Environmer			9	Farmington, NM 87401	505-564-2281				□ Other		Matrix	€ H20	H20	, Н20	H20	/ H20	H20	² H20	H20			Relinquished by:	1	Relinduished by:	7/ 1/ 1/
Animas			ress:	Farmin		装	rage:	70	::	(be)	Time	- 44	1042	1505	1609	1325	1288	1524	1138			Time:	1745	Time: 775/	
Client:			Mailing Address:		Phone #:	email or Fax#:	QA/QC Package:	X Standard	Accreditation:	☐ EDD (Type)	Date	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013			Date:	8-23-13	Date: 8/23/71	



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

OrderNo.: 1305125

May 13, 2013

H. Woods

Animas Environmental Services 624 East Comanche Farmington, NM 87401

TEL: (505) 564-2281 FAX: (505) 324-2022

RE: Energen Julander Fed #1E

Dear H. Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/3/2013 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. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

Sincerely,

Andy Freeman

Laboratory Manager

anded

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1305125

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: SB-1 @ 37.5'-39'

Project: Energen Julander Fed #1E

Collection Date: 4/29/2013 10:38:00 AM

Lab ID: 1305125-001

Matrix: SOIL

Received Date: 5/3/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	5/7/2013 10:30:47 PM
Surr: DNOP	123	63-147	%REC	1	5/7/2013 10:30:47 PM
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/6/2013 7:30:36 PM
Surr: BFB	91.2	80-120	%REC	1	5/6/2013 7:30:36 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.047	mg/Kg	1	5/6/2013 7:30:36 PM
Toluene	ND	0.047	mg/Kg	1	5/6/2013 7:30:36 PM
Ethylbenzene	ND	0.047	mg/Kg	1	5/6/2013 7:30:36 PM
Xylenes, Total	ND	0.094	mg/Kg	1	5/6/2013 7:30:36 PM
Surr: 4-Bromofluorobenzene	95.2	80-120	%REC	1	5/6/2013 7:30:36 PM

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
 - Spike Recovery outside accepted recovery limits 1 of 6

Lab Order 1305125

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Fed #1E

Lab ID: 1305125-002

Matrix: SOIL

Collection Date: 5/1/2013 10:15:00 AM Received Date: 5/3/2013 10:00:00 AM

Client Sample ID: SB-2 @ 40'-41'

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	E ORGANICS					Analyst: JME
Diesel Range Organics (DRO)	74	10		mg/Kg	1	5/8/2013 12:19:36 AM
Surr: DNOP	124	63-147		%REC	1	5/8/2013 12:19:36 AM
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	2100	47		mg/Kg	10	5/6/2013 8:00:53 PM
Surr: BFB	327	80-120	s	%REC	10	5/6/2013 8:00:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	9.0	0.47		mg/Kg	10	5/6/2013 8:00:53 PM
Toluene	74	2.3		mg/Kg	50	5/7/2013 3:37:57 PM
Ethylbenzene	11	0.47		mg/Kg	10	5/6/2013 8:00:53 PM
Xylenes, Total	93	0.93		mg/Kg	10	5/6/2013 8:00:53 PM
Surr: 4-Bromofluorobenzene	129	80-120	S	%REC	10	5/6/2013 8:00:53 PM

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits Page 2 of 6

Lab Order 1305125

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 5/13/2013

CLIENT: Animas Environmental Services

Client Sample ID: SB-3 @ 39'-40'

Project: Energen Julander Fed #1E

Collection Date: 5/1/2013 2:43:00 PM

Lab ID: 1305125-003

Matrix: SOIL Received Date: 5/3/2013 10:00:00 AM

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS					Analyst: JME
Diesel Range Organics (DRO)	80	9.9		mg/Kg	1	5/8/2013 12:46:48 AM
Surr: DNOP	117	63-147		%REC	1	5/8/2013 12:46:48 AM
EPA METHOD 8015D: GASOLINE RA	ANGE					Analyst: NSB
Gasoline Range Organics (GRO)	1300	92		mg/Kg	20	5/6/2013 8:31:04 PM
Surr: BFB	208	80-120	s	%REC	20	5/6/2013 8:31:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	2.1	0.92		mg/Kg	20	5/6/2013 8:31:04 PM
Toluene	19	0.92		mg/Kg	20	5/6/2013 8:31:04 PM
Ethylbenzene	7.8	0.92		mg/Kg	20	5/6/2013 8:31:04 PM
Xylenes, Total	70	1.8		mg/Kg	20	5/6/2013 8:31:04 PM
Surr: 4-Bromofluorobenzene	116	80-120		%REC	20	5/6/2013 8:31:04 PM

	ier	

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 2 of 6

Client:

Analyte

Surr: DNOP

Diesel Range Organics (DRO)

Hall Environmental Analysis Laboratory, Inc.

Animas Environmental Services

Result

59

6.3

PQL

10

WO#:

1305125

13-May-13

Project: Energen Julander Fed #1E Sample ID: MB-7313 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: PBS Batch ID: 7313 RunNo: 10338 Prep Date: 5/6/2013 Analysis Date: 5/7/2013 SeqNo: 295279 Units: mg/Kg Analyte SPK value SPK Ref Val %REC PQL LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 Surr: DNOP 9.5 10.00 94.6 63 TestCode: EPA Method 8015D: Diesel Range Organics Sample ID: LCS-7313 SampType: LCS Client ID: LCSS Batch ID: 7313 Analysis Date: 5/7/2013 Prep Date: 5/6/2013 SeqNo: 295357 Units: mg/Kg **PQL** SPK value SPK Ref Val %REC Analyte Result LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 51 10 50.00 0 102 47.4 122 97.9 Sur: DNOP 4.9 5.000 63 147 Sample ID: 1305125-001AMS TestCode: EPA Method 8015D: Diesel Range Organics SampType: MS Client ID: SB-1 @ 37.5'-39' Batch ID: 7313 RunNo: 10446 Prep Date: 5/6/2013 Analysis Date: 5/7/2013 SeqNo: 295998 Units: mg/Kg

Sample ID: 1305125-001AMSD	SampT	/pe: M S	SD	Tes	tCode: El	PA Method	8015D: Diese	el Range C	Organics	
Client ID: SB-1 @ 37.5'-39'	Batch	ID: 731	13	F	RunNo: 10	0446				
Prep Date: 5/6/2013	Analysis Da	ate: 5/	7/2013	S	SeqNo: 2	96000	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	10	50.05	0	122	12.6	148	4.04	22.5	
Surr: DNOP	6.5		5.005		130	63	147	0	0	

0

%REC

117

127

LowLimit

12.6

63

HighLimit

148

147

%RPD

RPDLimit

Qual

SPK value SPK Ref Val

49.95

4.995

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Page 4 of 6

Hall Environmental Analysis Laboratory, Inc.

WO#:

1305125

13-May-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Sample ID: MB-7285

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

LowLimit

80

Client ID: PBS

Batch ID: 7285

RunNo: 10327

Prep Date: 5/3/2013

Units: mg/Kg

Analyte

Analysis Date: 5/6/2013 PQL

5.0

SeqNo: 294720

%REC

RPDLimit Qual

Gasoline Range Organics (GRO)

ND

SPK value SPK Ref Val

90.8

120

HighLimit

Surr: BFB

910

Result

1000

%RPD

Sample ID: LCS-7285

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS

Batch ID: 7285

RunNo: 10327

Prep Date: 5/3/2013

Analysis Date: 5/6/2013

SeqNo: 294721

Units: mg/Kg

Analyte Gasoline Range Organics (GRO) Result **PQL**

SPK value SPK Ref Val

%REC LowLimit 118

HighLimit 136 %RPD

RPDLimit Qual

Surr: BFB

29 5.0 25.00 1100 1000

113

62.6

80 120

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH greater than 2
- RLReporting Detection Limit

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

Page 5 of 6

Hall Environmental Analysis Laboratory, Inc.

WO#: 1305125

13-May-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Sample ID: MB-7285	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batcl	h ID: 72	B5	F	RunNo: 10	0327				
Prep Date: 5/3/2013	Analysis D	Date: 5/	6/2013	8	SeqNo: 2	94748	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3enzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

Sample ID: LCS-7285	Samp1	Гуре: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batc	h ID: 72	B5	F	RunNo: 1	0327				
Prep Date: 5/3/2013	Analysis [Date: 5/	6/2013	\$	SeqNo: 2	94749	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.6	80	120			
Toluene	0.95	0.050	1.000	0	95.4	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Kylenes, Total	3.0	0.10	3.000	0	98.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Qualifiers:

RL Reporting Detection Limit

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Page 6 of 6

 ^{*} Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded



Hall Environmental Analysis Laborator) 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-410; Website: www.hallenvironmental.com

Sample Log-In Check List

Work Order Number: 1305125 Client Name: Animas Environmentai RcptNo: 1 Received by/date:_ Logged By: Michelle Garcia 5/3/2013 10:00:00 AM Completed By: 5/3/2013 11:34:44 AM Michelle Garc Reviewed By: Chain of Custod 1. Custody seals intact on sample bottles? No 🗀 Not Present Yes 🗸 No 🗌 Not Present 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In Yes 🗸 No 🗍 NA 🗍 4. Was an attempt made to cool the samples? NA 🖂 No \square 5. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 No 🗆 Yes 🗸 6. Sample(s) in proper container(s)? No 🗌 7. Sufficient sample volume for indicated test(s)? Yes 🔽 8. Are samples (except VOA and ONG) properly preserved? No 🗆 NA 🗌 9. Was preservative added to bottles? Yes No 🗹 Yes No 🗌 No VOA Vials 10.VOA vials have zero headspace? Yes 🗆 No 🗹 11. Were any sample containers received broken? # of preserved bottles checked No 🗌 12. Does paperwork match bottle labels? Yes 🗸 for pH: (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 Yes 🗸 13. Are matrices correctly identified on Chain of Custody? No 🔲 14. Is it clear what analyses were requested? No 🗌 Checked by: Yes 🗹 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes 16. Was client notified of all discrepancies with this order? No 🗌 NA 🗸 Person Notified: Date: By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Condition | Seal Intact | Seal No Cooler No Temp ℃ Seal Date Signed By 2.8 Good Yes

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Chain-of-Custody Record	Animas Environmental Services		Mailing Address: 1024 E. Comanche	Farmington, NM 8740	Phone #: 505-564-228)	email or Fax#: hwoods @ aximas environmada.co Project Manager	kage:	٩	L O	(bd)	Тіте	1038	1015	1443									Time: ISU	Time: \langle \langle	If necessary, samples submitted to Hall Environmental may be subcontracted to other aboved
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	Client:		Mailin	IÀ	Phone	email	QA/QC Package:	Standard Standard	Accreditation □ NELAP		Date	1129/13	[/1/13	571/13									Date: /2/13	Date:	



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

OrderNo.: 1305217

May 13, 2013

H. Woods

Animas Environmental Services 624 East Comanche Farmington, NM 87401

TEL: (505) 564-2281 FAX: (505) 324-2022

RE: Energen Julander Fed #1E

Dear H. Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/7/2013 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. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

Sincerely,

Andy Freeman

Laboratory Manager

Indel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1305217

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Fed #1E

Lab ID: 1305217-001

Client Sample ID: MW-3

Collection Date: 5/6/2013 12:44:00 PM

Matrix: AQUEOUS Received Date: 5/7/2013 9:45:00 AM

Analyses	Result	RL Qua	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE	.		-	~~~	Analyst: JME
Diesel Range Organics (DRO)	1.2	1.0	mg/L	1	5/10/2013 12:22:26 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	5/10/2013 12:22:26 PM
Surr: DNOP	132	75.4-146	%REC	1	5/10/2013 12:22:26 PM
EPA METHOD 8015D: GASOLINE RAN	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	120	5.0	mg/L	100	5/8/2013 12:58:29 PM
Surr: BFB	96.6	51.5-151	%REC	100	5/8/2013 12:58:29 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	16000	500	μg/L	500	5/8/2013 12:28:07 PM
Toluene	27000	500	μg/L	500	5/8/2013 12:28:07 PM
Ethylbenzene	1000	100	μg/L	100	5/8/2013 12:58:29 PM
Xylenes, Total	9500	200	μg/L	100	5/8/2013 12:58:29 PM
Surr: 4-Bromofluorobenzene	106	69.4-129	%REC	100	5/8/2013 12:58:29 PM

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

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 1 of 7

Lab Order 1305217

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Fed #1E

Lab ID: 1305217-002

Client Sample ID: MW-4

Collection Date: 5/6/2013 1:45:00 PM

Received Date: 5/7/2013 9:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	E				Analyst: JME
Diesel Range Organics (DRO)	1.2	1.0	mg/L	1	5/10/2013 12:49:29 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	5/10/2013 12:49:29 PM
Surr: DNOP	137	75.4-146	%REC	1	5/10/2013 12:49:29 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	110	5.0	mg/L	100	5/8/2013 3:30:06 PM
Surr: BFB	97.4	51.5-151	%REC	100	5/8/2013 3:30:06 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	8500	100	μg/L	100	5/8/2013 3:30:06 PM
Toluene	29000	500	μg/L	500	5/8/2013 2:59:42 PM
Ethylbenzene	1100	100	µg/L	100	5/8/2013 3:30:06 PM
Xylenes, Total	10000	200	μg/L	100	5/8/2013 3:30:06 PM
Surr: 4-Bromofluorobenzene	107	69.4-129	%REC	100	5/8/2013 3:30:06 PM

Matrix: AQUEOUS

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

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

Lab Order 1305217

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander Fed #1E **Project:**

1305217-003 Lab ID:

Client Sample ID: MW-1

Collection Date: 5/6/2013 12:08:00 PM

Received Date: 5/7/2013 9:45:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE	=				Analyst: JME
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	5/10/2013 1:16:42 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	5/10/2013 1:16:42 PM
Surr: DNOP	132	75.4-146	%REC	1	5/10/2013 1:16:42 PM
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	17	0.50	mg/L	10	5/8/2013 6:01:27 PM
Surr: BFB	130	51.5-151	%REC	10	5/8/2013 6:01:27 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	10	μg/L	10	5/8/2013 6:01:27 PM
Toluene	77	10	μg/L	10	5/8/2013 6:01:27 PM
Ethylbenzene	470	10	μg/L	10	5/8/2013 6:01:27 PM
Xylenes, Total	3900	100	μg/L	50	5/8/2013 5:31:11 PM
Surr: 4-Bromofluorobenzene	119	69.4-129	%REC	10	5/8/2013 6:01:27 PM

Matrix: AQUEOUS

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range

Reporting Detection Limit

- Analyte detected below quantitation limits J
- Sample pH greater than 2

- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - RPD outside accepted recovery limits
 - Spike Recovery outside accepted recovery limits Page 3 of 7

Lab Order 1305217

Date Reported: 5/13/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-2

Project: Energen Julander Fed #1E

Collection Date: 5/6/2013 3:00:00 PM

Lab ID: 1305217-004

Matrix: AQUEOUS Received Date: 5/7/2013 9:45:00 AM

Analyses	Result	RL Q	ual Uni	its	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANG	E					Analyst: JME
Diesel Range Organics (DRO)	ND	1.0	mg	ı/L	1	5/10/2013 1:43:45 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg	ı/L	1	5/10/2013 1:43:45 PM
Surr: DNOP	149	75.4-146	S %F	REC	1	5/10/2013 1:43:45 PM
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	0.22	0.050	mg	ı/L	1	5/8/2013 7:01:57 PM
Surr: BFB	94.8	51.5-151	%F	REC	1	5/8/2013 7:01:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	6.8	1.0	μg/	/L	1	5/8/2013 7:01:57 PM
Toluene	40	1.0	μg/	/L	1	5/8/2013 7:01:57 PM
Ethylbenzene	2.7	1.0	μg/	/L	1	5/8/2013 7:01:57 PM
Xylenes, Total	25	2.0	μg/	/L	1	5/8/2013 7:01:57 PM
Surr: 4-Bromofluorobenzene	102	69.4-129	%F	REC	1	5/8/2013 7:01:57 PM

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

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1305217

13-May-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Result

Sample ID: MB-7386 Client ID: PBW

SampType: MBLK

PQL

TestCode: EPA Method 8015D: Diesel Range

LowLimit

Prep Date: 5/10/2013

Batch ID: 7386 Analysis Date: 5/10/2013 RunNo: 10540 SeqNo: 297792

Units: mg/L

HighLimit

RPDLimit

Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)

ND 1.0 ND 5.0

1.3

132

75.4 146

%RPD

Qual

Sample ID: LCS-7386

Surr: DNOP

SampType: LCS

Result

6.2

0.70

0.80

1.000

5.000

0.5000

SPK value SPK Ref Val

SPK value SPK Ref Val %REC

TestCode: EPA Method 8015D: Diesel Range

Client ID: LCSW Prep Date: 5/10/2013

Diesel Range Organics (DRO)

Batch ID: 7386 Analysis Date: 5/10/2013

PQL

1.0

RunNo: 10540

%REC

124

141

SeqNo: 297846

Units: mg/L

LowLimit HighLimit %RPD 89.1 151

146

RPDLimit Qual

Surr: DNOP

SampType: LCSD

0

0

TestCode: EPA Method 8015D: Diesel Range

Sample ID: LCSD-7386 Client ID: LCSS02

Batch ID: 7386

RunNo: 10540

Prep Date: 5/10/2013 Analysis Date: 5/10/2013

SeqNo: 297847

Units: mg/L

Analyte Diesel Range Organics (DRO)

Analyte

Result **PQL** SPK value SPK Ref Val 7.4 1.0 5.000

%REC LowLimit HighLimit

%RPD **RPDLimit**

Qual 20

Surr: DNOP

0.5000

148 160

89.1 75.4

75.4

151 146 17.6 0

0 S

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RLReporting Detection Limit

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

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1305217

13-May-13

		J		<i>,</i>						
Client:	Animas Environm	ental Ser	vices							-
Project:	Energen Julander 1	Fed #1E								
Sample ID: 5ML RB	Samp	Туре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBW	Bat	ch ID: R1	0452	F	RunNo: 10	0452				
Prep Date:	Analysis	Date: 5/	7/2013	8	SeqNo: 29	95757	Units: %REG			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		91.2	51.5	151			
Sample ID: 2.5UG G	RO LCS Samp	Type: LC	s	Tes	tCode: Ef	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSW	Bat	ch ID: R1	0452	F	RunNo: 10	0452				
Prep Date:	Analysis	Date: 5/	7/2013	8	SeqNo: 29	95758	Units: %REG	3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	20		20.00		98.3	51.5	151			
Sample ID: 5ML RB	Samp	Туре: МЕ	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	,
Client ID: PBW	Bat	ch ID: R1	0499	F	RunNo: 10	0499				
Prep Date:	Analysis	Date: 5/	8/2013	5	SeqNo: 2	96831	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	(GRO) ND	0.050								
Sum: BFB	18		20.00		92.4	51.5	151			
Sample ID: 2.5UG G	RO LCS Samp	Type: LC	s	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: LCSW	Bat	ch ID: R1	0499	F	RunNo: 10	0499				
Prep Date:	Analysis	Date: 5/	8/2013	5	SeqNo: 2	96832	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	• •	0.050	0.5000	0	111	73.2	124			
Surr: BFB	20		20.00		100	51.5	151			
Sample ID: 1305217	-001AMS Samp	Туре: М	3	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: MW-3	Bat	ch ID: R1	0499	F	RunNo: 1	0499				
Prep Date:	Analysis	Date: 5/	8/2013	5	SeqNo: 2	96837	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics		5.0	50.00	117.5	103	65.2	137			
Surr: BFB	2100		2000		103	51.5	151			
Sample ID: 1305217	-001AMSD Samp	туре: М	SD	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: MW-3	Bat	ch ID: R1	0499	F	RunNo: 1	0499				
Prep Date:	Analysis	Date: 5/	8/2013	8	SeqNo: 2	96838	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	•	5.0	50.00	117.5	88.6	65.2	137	4.28	20	
Surr: BFB	2000		2000		102	51.5	151	0	0	

Qualifiers:

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

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

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1305217

13-May-13

Client: Animas Environmental Services
Project: Energen Julander Fed #1E

Sample ID: 5ML RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBW Batch ID: R10452 RunNo: 10452

Prep Date: Analysis Date: 5/7/2013 SeqNo: 295770 Units: %REC

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr: 4-Bromofluorobenzene 20 20.00 99.6 69.4 129

Sample ID: 5ML RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBW Batch ID: R10499 RunNo: 10499

Prep Date: Analysis Date: 5/8/2013 SeqNo: 296846 Units: µg/L

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual ND 1.0 Benzene ND Toluene 1.0 ND Ethylbenzene 1.0 Xylenes, Total ND 2.0 Surr: 4-Bromofluorobenzene 20 20.00 98.5 69.4 129

TestCode: EPA Method 8021B: Volatiles Sample ID: 100NG BTEX LCS SampType: LCS Client ID: Batch ID: R10499 RunNo: 10499 Analysis Date: 5/8/2013 Prep Date: SeqNo: 296847 Units: µg/L %RPD **RPDLimit PQL** SPK value SPK Ref Val %REC HighLimit Qual Analyte Result LowLimit 18 1.0 20.00 ٥ 90.2 80 120 Benzene 1.0 20.00 0 92.2 80 120 Toluene 18 80 120 20.00 0 91.8 18 Ethylbenzene 1.0 Xylenes, Total 95.2 80 120 57 2.0 60.00 n 97.3 129 Surr: 4-Bromofluorobenzene 19 20.00 69.4

TestCode: EPA Method 8021B: Volatiles Sample ID: 1305217-002AMS SampType: MS RunNo: 10499 Client ID: MW-4 Batch ID: R10499 SeqNo: 296852 Units: µg/L Prep Date: Analysis Date: 5/8/2013 **RPDLimit** Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD Qual Analyte 100 2000 103 80 3100 1067 120 Ethylbenzene Xylenes, Total 200 6000 10340 103 80 120 17000 2200 2000 109 69.4 129 Surr: 4-Bromofluorobenzene

TestCode: EPA Method 8021B: Volatiles SampType: MSD Sample ID: 1305217-002AMSD RunNo: 10499 Client ID: MW-4 Batch ID: R10499 Analysis Date: 5/8/2013 SeqNo: 296853 Prep Date: Units: µg/L SPK value SPK Ref Val %REC LowLimit **HighLimit** %RPD **RPDLimit** Qual Analyte Result **PQL** 80 20 Ethylbenzene 3100 100 2000 1067 99.5 120 2.12 6000 10340 95.1 80 120 2.99 20 Xylenes, Total 16000 200 2000 109 69.4 129 0 0 Surr: 4-Bromofluorobenzene 2200

Oualifiers:

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

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

Page 7 of 7



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com RcptNo: 1 Work Order Number: 1305217 Client Name: **Animas Environmental** Received by/date: 5/7/2013 9:45:00 AM Logged By: 5/7/2013 11:10:06 AM Completed By: Michelle Garcia 05/07/2013 50 Reviewed By: Chain of Custody Yes : No Not Present V 1. Custody seals intact on sample bottles? No | Not Present Yes V 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In No ! NA : 4. Was an attempt made to cool the samples? Yes 🗸 No i NA ! 5. Were all samples received at a temperature of >0° C to 6.0°C No i 6. Sample(s) in proper container(s)? Yes i✓ No | 7. Sufficient sample volume for indicated test(s)? No : 8. Are samples (except VOA and ONG) properly preserved? NA No V 9. Was preservative added to bottles? No : No VOA Vials 10.VOA vials have zero headspace? No 🗸 11. Were any sample containers received broken? Yes # of preserved bottles checked No for pH: 12. Does paperwork match bottle labels? Yes V (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No | Yes 🗸 13. Are matrices correctly identified on Chain of Custody? No : 14. Is it clear what analyses were requested? No ! ! Checked by: 15. Were all holding times able to be met? Yes 🗸 (If no, notify customer for authorization.) Special Handling (if applicable) Yes No | 16. Was client notified of all discrepancies with this order? NA V Person Notified: Date: By Whom: Via: eMail In Person Phone i Fax Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp C Condition Seal Intact Seal No Seal Date

CALTENANTAL	ANALYSIS LABORATORY	antal.com	Albuquerque, NM 87109	505-345-4107	equest		LOB.8	(\		AOV) 80858 9260B (VOA- -imə2) 0728 -ima2) 0738								Enelyze to The	ds/tolfe
	ANALYSIS	www.hallenvironmental.com	4901 Hawkins NE - Albuquer	Tel. 505-345-3975 Fax 50	Analysis Request		(SM	(1.8 (1.4 8 07S8 1,50N,8	d 41 d 50 sls	TPH (Metho PAH's (8310 RCRA 8 Me Anions (F,Cl								1 He then	20/DE0/A- US
				Tel. 5			gas o) нат	+ 3E	7	× ×	×	∠	×				Remarks:	She
60	□ Rush		lander Fed #1E					IMONA Contractor		Preservative FEAU No.	1 / Hone (301	- June	1/20mg -	your -out				Date Time 5/6/13 1749	Date Time
Turn-Around Time:	Ŋ Standard	Project Name:	Energen Ju	Project #:		Project Manager:	u words	Sampler: L. Lav		Container Pre Type and #	6 VORS 14		600A 140	6 vorg Ha				Received by:	Received by:
	Client: Animas Environmental Services		Mailing Address: 1224 E. Coman Cha	NM BAYO!	-2281		☐ Level 4 (Eul) Validation)			Sample Request ID	MW-3	mm-4	mw-1	mw-2				ished by.	quished by:
nain-of-Cu	nimas Enum		ddress: 624 E	Farmington . N	Phone #: 205-564-	Fax#:	ackage:	ation		Time Matrix	02H H21	1345-1120	1203 1120	1500 Hil				Time: Relinguished by	Time: Relinquished by:
ັວ	Client: $A_{f i}$		Mailing A	Far	Phone #:	email or Fax#:	QA/QC Package:	Accreditation	□ EDD (Type)	Date	-6-2017							2	Date: 7



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

August 27, 2013

Ross Kennemer
Animas Environmental Services
624 East Comanche
Farmington, NM 87401

TEL: (505) 486-1776 FAX (505) 324-2022

RE: Energen Julander Federal #1E OrderNo.: 1308877

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/20/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1308877

Date Reported: 8/27/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-5 @ 35'-36.5'

Project: Energen Julander Federal #1E

Collection Date: 8/15/2013 9:12:00 AM

Lab ID: 130

1308877-001

Matrix: SOIL

Received Date: 8/20/2013 9:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analys	st: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/23/2013 5:30:23 PM	8973
Surr: DNOP	92.8	63-147	%REC	1	8/23/2013 5:30:23 PM	8973
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/22/2013 4:11:49 PM	8964
Surr: BFB	91.6	80-120	%REC	1	8/22/2013 4:11:49 PM	8964
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.047	mg/Kg	1	8/22/2013 4:11:49 PM	8964
Toluene	ND	0.047	mg/Kg	1	8/22/2013 4:11:49 PM	8964
Ethylbenzene	ND	0.047	mg/Kg	1	8/22/2013 4:11:49 PM	8964
Xylenes, Total	ND	0.094	mg/Kg	1	8/22/2013 4:11:49 PM	8964
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1	8/22/2013 4:11:49 PM	8964

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

- 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
- Page 1 of 7
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1308877

Date Reported: 8/27/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-6 @ 35'-36.5'

Energen Julander Federal #1E

Collection Date: 8/15/2013 1:17:00 PM

Lab ID: 1308877-002 Matrix: SOIL

Received Date: 8/20/2013 9:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analy	st: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/23/2013 7:00:43 PM	1 8973
Surr: DNOP	104	63-147	%REC	1	8/23/2013 7:00:43 PM	8973
EPA METHOD 8015D: GASOLINE R	ANGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/22/2013 4:40:24 PN	1 8964
Surr: BFB	91.6	80-120	%REC	1	8/22/2013 4:40:24 PM	1 8964
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.047	mg/Kg	1	8/22/2013 4:40:24 PM	1 8964
Toluene	ND	0.047	mg/Kg	1	8/22/2013 4:40:24 PM	1 8964
Ethylbenzene	ND	0.047	mg/Kg	1	8/22/2013 4:40:24 PM	1 8964
Xylenes, Total	ND	0.094	mg/Kg	1	8/22/2013 4:40:24 PM	1 8964
Surr: 4-Bromofluorobenzene	103	80-120	%REC	1	8/22/2013 4:40:24 PM	1 8964

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

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Not Detected at the Reporting Limit Page 2 of 7 Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

Lab Order 1308877

Date Reported: 8/27/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-7 @ 35'36.5'

Project: Energen Julander Federal #1E

Collection Date: 8/14/2013 1:45:00 PM

Lab ID: 1308877-003

Matrix: SOIL

Received Date: 8/20/2013 9:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analys	t: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	8/23/2013 7:31:00 PM	8973
Surr: DNOP	87.6	63-147	%REC	1	8/23/2013 7:31:00 PM	8973
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	8/22/2013 5:09:06 PM	8964
Surr: BFB	91.1	80-120	%REC	1	8/22/2013 5:09:06 PM	8964
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.048	mg/Kg	1	8/22/2013 5:09:06 PM	8964
Toluene	ND	0.048	mg/Kg	1	8/22/2013 5:09:06 PM	8964
Ethylbenzene	ND	0.048	mg/Kg	1	8/22/2013 5:09:06 PM	8964
Xylenes, Total	ND	0.096	mg/Kg	1	8/22/2013 5:09:06 PM	8964
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1	8/22/2013 5:09:06 PM	8964

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

- 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
 - Page 3 of 7
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1308877

Date Reported: 8/27/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-8 @ 35'-36.5'

Project: Energen Julander Federal #1E

Collection Date: 8/16/2013 1:37:00 PM

Lab ID: 13

1308877-004

Matrix: SOIL

Received Date: 8/20/2013 9:50:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	Analy	st: JME			
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1 8/23/2013 8:01:13 PI	M 8973
Surr: DNOP	83.3	63-147	%REC	1 8/23/2013 8:01:13 PI	vi 8973
EPA METHOD 8015D: GASOLINE R	ANGE			Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1 8/22/2013 5:37:51 PI	M 8964
Surr: BFB	91.3	80-120	%REC	1 8/22/2013 5:37:51 PI	M 8964
EPA METHOD 8021B: VOLATILES				Analy	st: NSB
Benzene	ND	0.048	mg/Kg	1 8/22/2013 5:37:51 Pi	M 8964
Toluene	ND	0.048	mg/Kg	1 8/22/2013 5:37:51 PI	M 8964
Ethylbenzene	ND	0.048	mg/Kg	1 8/22/2013 5:37:51 PI	M 8964
Xylenes, Total	ND	0.096	mg/Kg	1 8/22/2013 5:37:51 Pl	M 8964
Surr: 4-Bromofluorobenzene	103	80-120	%REC	1 8/22/2013 5:37:51 PI	M 8964

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

- 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 Page 4 of 7
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1308877

27-Aug-13

Client:

Animas Environmental Services

Project:

Energen Julander Federal #1E

Result

Result

Result

48

4.9

Sample ID MB-8973

SampType: MBLK

TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: PBS

Batch ID: 8973

RunNo: 12805

SeqNo: 366788

Units: mg/Kg

Analyte

Prep Date: 8/21/2013

Analysis Date: 8/23/2013 PQL

%REC

HighLimit

RPDLimit Qual

Diesel Range Organics (DRO)

Surr: DNOP

ND 8.4

83.8

63 147 %RPD

Sample ID LCS-8973

SampType: LCS

Client ID: LCSS

TestCode: EPA Method 8015D: Diesel Range Organics

Batch ID: 8973

RunNo: 12805

92.0

147

Analyte

Prep Date: 8/21/2013

Analysis Date: 8/23/2013 **PQL**

10

SeqNo: 366789

Units: mg/Kg

Diesel Range Organics (DRO) Surr: DNOP

50 10 4.6

SPK value SPK Ref Val %REC 50.00 0

SPK value SPK Ref Val

10.00

5.000

50.05

5.005

SPK value SPK Ref Val

LowLimit 101 77 1

63

LowLimit

HighLimit 128 %RPD **RPDLimit** Qual

Sample ID 1308877-001AMS

SampType: MS

TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: Prep Date: 8/21/2013

MW-5 @ 35'-36.5'

Batch ID: 8973 Analysis Date: 8/23/2013

PQL

10

RunNo: 12805

%REC

96.9

SeqNo: 366790

LowLimit

61.3

63

138

147

Units: mg/Kg HighLimit %RPD **RPDLimit** Qual

Analyte Diesel Range Organics (DRO) Surr: DNOP

97.2

TestCode: EPA Method 8015D: Diesel Range Organics

Sample ID 1308877-001AMSD

Client ID: MW-5 @ 35'-36.5'

SampType: MSD Batch ID: 8973

PQL

10

RunNo: 12805

Units: mg/Kg

Analyte

Prep Date:

8/21/2013

Analysis Date: 8/23/2013

SeqNo: 366791

RPDLimit %RPD Qual

20

0

Diesel Range Organics (DRO) Sur: DNOP

52 4.7

Result

50.20 5.020

SPK value SPK Ref Val 0

%REC LowLimit 104

92.9

HighLimit 61.3

63

138 147

7.11 0

Oualifiers:

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

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1308877

27-Aug-13

Client:

Animas Environmental Services

Project:

Energen Julander Federal #1E

Sample ID MB-8964

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

LowLimit

80

Client ID: **PBS** Batch ID: 8964

Result

RunNo: 12836

Units: mg/Kg

Prep Date: 8/21/2013

Analysis Date: 8/22/2013

PQL

5.0

SeqNo: 365870 %REC

RPDLimit Qual

Analyte Gasoline Range Organics (GRO)

ND

SPK value SPK Ref Val

HighLimit

Sum: BFB

890

1000

88.6

120

Sample ID LCS-8964

SampType: LCS

Batch ID: 8964

RunNo: 12836

TestCode: EPA Method 8015D: Gasoline Range

%RPD

Client ID: LCSS Prep Date:

8/21/2013 Analysis Date: 8/22/2013

SeqNo: 365871

Units: mg/Kg

HighLimit

RPDLimit Qual

Analyte

Result

22

930

SPK value SPK Ref Val 25.00

%REC LowLimit 86.4 92.9

74.5 80 %RPD

Gasoline Range Organics (GRO) Surr: BFB

5.0 1000 0

126 120

Dualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

Sample pH greater than 2 for VOA and TOC only.

Not Detected at the Reporting Limit

Reporting Detection Limit RL

P

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1308877

27-Aug-13

Client:

Animas Environmental Services

Project:

Energen Julander Federal #1E

Sample ID MB-8964	SampT	ype: ME	BLK	TestCode: EPA Method 8021B: Volatiles											
Client ID: PBS	Batch	n ID: 89	64	F	RunNo: 1	2836									
Prep Date: 8/21/2013	Analysis D)ate: 8/	22/2013	8	SeqNo: 3	66022	Units: mg/K	(g							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Benzene	ND	0.050													
Toluene	ND	0.050													
Ethylbenzene	ND	0.050													
Xylenes, Total	ND	0.10													
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120								

Sample ID LCS-8964	Samp	Гуре: LC	s	TestCode: EPA Method 8021B: Volatiles												
Client ID: LCSS	Batc	h ID: 89	64	F	RunNo: 1											
Prep Date: 8/21/2013	Analysis D	Date: 8/	22/2013	S	SeqNo: 3	66023	Units: mg/h									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Benzene	1.0	0.050	1.000	0	102	80	120									
Toluene	1.0	0.050	1.000	0	99.9	80	120									
Ethylbenzene	1.0	0.050	1.000	0	101	80	120									
Xylenes, Total	3.1	0.10	3.000	0	102	80	120									
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120									

Sample ID MB-8998	SampTy	/pe: M E	BLK	TestCode: EPA Method 8021B: Volatiles									
Client ID: PBS	Batch	ID: 89	98	F	RunNo: 1	2857							
Prep Date: 8/22/2013	Analysis Da	Analysis Date: 8/23/2013			SeqNo: 3	66600	Units: %RE	С					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Surr: 4-Bromofluorobenzene	1.0		1.000		102 80								

Sample ID LCS-8998	SampT	ype: LC	s	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch	n ID: 89	98	F	RunNo: 1	2857						
Prep Date: 8/22/2013	Analysis D	ate: 8/	23/2013	8	SeqNo: 3	66601	Units: %RE					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120					

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

Page 7 of 7



Tau 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: **Animas Environmental** Work Order Number: 1308877 RcptNo: 1 Received by/date:_ anne Sham 8/20/2013 9:50:00 AM Logged By: **Anne Thorne** anne Sham Completed By: 8/20/2013 Anne Thorne Reviewed By: Chain of Custody Not Present Yes 🗌 1. Custody seals intact on sample bottles? No 🗌 Yes 🗸 Not Present 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In No 🗆 Yes 🗸 NA \square 4. Was an attempt made to cool the samples? Yes 🗸 NA 🗌 5. Were all samples received at a temperature of >0° C to 6.0°C No 🗌 Yes 🗸 Sample(s) in proper container(s)? Yes 🗸 7. Sufficient sample volume for indicated test(s)? Yes 🗸 Nο 8. Are samples (except VOA and ONG) properly preserved? Yes No 🗸 NA 🗌 9. Was preservative added to bottles? Yes 🗌 No 🗌 No VOA Viais 10.VOA vials have zero headspace? Yes No 🗹 11. Were any sample containers received broken? # of preserved bottles checked Yes 🗸 No 🗌 for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? Yes 🔽 No 🗆 13. Are matrices correctly identified on Chain of Custody? Yes 🗸 No 🗆 14. Is it clear what analyses were requested? 15. Were all holding-times able to be met? Yes 🗸 No 🗆 Checked by: (If no, notify customer for authorization.) Special Handling (if applicable) Yes 🗌 NA 🗹 16. Was client notified of all discrepancies with this order? No 🗌 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 1.0 Good

HALL ENVIRONMENTAL	·Ľ	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request		S, ₄ O9,	(f.40 3 0758 5 00,60 5 808 \ (A	or 5 bor 50 or 0.0 or 0	TPH (Methoritoday) HPT (Methoritoday) a'HA9 (Methoritoday) BM8 AROR (T, T) anoina (Methoritoday) BOSCOB (VO) (Semisimals) 0\text{TSO}												
			4901 H	Tel. 50						TM + XEITB 88108 H9T	×	X	X	X			_	-	_ <u> </u>	Kemarks.		
										357/3 + X∃T8	×	X	X	メ						E 2 2		
rime:	□ Rush		Julander Federal #1E			jer.	nome	Weds/A. Riling	一 《	Preservative Type		730-	500-	102 -					other C	1. pete 8/19/17 1450	Darle Time	3
Tum-Around Tim	M Standard	Project Name:	£	Project #:		Project Manager	R. Kenner	Sampler: 片.	Samplefillembela	Container Type and #	1-402	1-402	1-402	1-402					Donaless C	Am the	Received by:	
-	Client: Animas Environmental Services		Mailing Address: 624 E. Comanche		Phone #: 505-564-2281		☐ Level 4 (Full Validation)	Other		Matrix Sample Request ID	50:1 MW-58 35-36.5'		50,1 KM MW-7835-36.5'							Hether W. Warr)
hain-	Inimas		Address:	mina h	# 508-	r Fax#:	QA/QC Package: X Standard	tation AP	(Type)_	Time	412	1317	-		_						I	
ပ	Client:		Mailing	Par	Phone #	email or Fax#:	QA/QC Packa	Accreditation	□ EDD (Type)	Date	8/15/18	8/11/13	B114/13 1345	8/110/13						8/19/15/1450	Date:	7



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

October 22, 2013

Ross Kennemer
Animas Environmental Services
624 East Comanche
Farmington, NM 87401
TEL: (505) 486 1776

TEL: (505) 486-1776 FAX (505) 324-2022

RE: Energen Julander #1E OrderNo.: 1310665

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/12/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1310665

Date Reported: 10/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander #1E

Lab ID: 1310665-001

gen Julander #1E

Client Sample ID: Well Gas MW-4

Collection Date: 10/10/2013 3:45:00 PM

Received Date: 10/12/2013 10:15:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	1.2	1.1	PPM-V	1	10/15/2013 1:21:15 P	M R14105
Surr: BFB	104	26.3-265	%REC	1	10/15/2013 1:21:15 P	M R14105
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068	PPM-V	1	10/15/2013 1:21:15 Pi	M R14105
Benzene	0.17	0.031	PPM-V	1	10/15/2013 1:21:15 PI	M R14105
Toluene	0.22	0.026	PPM-V	1	10/15/2013 1:21:15 PI	M R14105
Ethylbenzene	ND	0.023	PPM-V	1	10/15/2013 1:21:15 PI	M R14105
Xylenes, Total	0.063	0.045	PPM-V	1	10/15/2013 1:21:15 PI	M R14105
Surr: 4-Bromofluorobenzene	115	74-118	%REC	1	10/15/2013 1:21:15 PI	M R14105

Matrix: AIR

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

- 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 Page
 - P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1310665

Date Reported: 10/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander #1E

Lab ID: 1310665-002

Project:

Client Sample ID: Well Gas MW-4

Collection Date: 10/11/2013 1:05:00 PM

Received Date: 10/12/2013 10:15:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RAI	NGE				Anal	yst: NSB
Gasoline Range Organics (GRO)	6.5	1.1	PPM-V	1	10/15/2013 12:53:42	PM R14105
Surr: BFB	108	26.3-265	%REC	1	10/15/2013 12:53:42	PM R14105
EPA METHOD 8021B: VOLATILES					Anal	yst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.068	PPM-V	1	10/15/2013 12:53:42	PM R14105
Benzene	0.17	0.031	PPM-V	1	10/15/2013 12:53:42	PM R14105
Toluene	0.35	0.026	PPM-V	1	10/15/2013 12:53:42	PM R14105
Ethylbenzene	0.036	0.023	PPM-V	1	10/15/2013 12:53:42	PM R14105
Xylenes, Total	0.14	0.068	PPM-V	1	10/15/2013 12:53:42	PM R14105
Surr: 4-Bromofluorobenzene	120	75.4-151	%REC	1	10/15/2013 12:53:42	PM R14105

Matrix: AIR

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

- * 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 Page 2 of 3
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1310665

Date Reported: 10/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-4

Project: Energen Julander #1E

Collection Date: 10/11/2013 1:15:00 PM

Lab ID: 1310665-003

Matrix: AQUEOUS

Received Date: 10/12/2013 10:15:00 AM

Result	RL Q	ıal Units	DF Date Analyzed	Batch
			Analys	st: NSB
ND	250	μg/L	100 10/15/2013 4:49:41 P	M R14105
9300	100	μg/L	100 10/15/2013 4:49:41 P	M R14105
16000	500	μg/L	500 10/15/2013 4:19:24 Pi	M R14105
720	100	μg/L	100 10/15/2013 4:49:41 PI	M R14105
6800	200	μg/L	100 10/15/2013 4:49:41 PI	M R14105
340	100	μg/L	100 10/15/2013 4:49:41 PI	M R14105
140	100	μg/L	100 10/15/2013 4:49:41 PI	M R14105
124	85-136	%REC	100 10/15/2013 4:49:41 PI	M R14105
	ND 9300 16000 720 6800 340 140	ND 250 9300 100 16000 500 720 100 6800 200 340 100 140 100	ND 250 μg/L 9300 100 μg/L 16000 500 μg/L 720 100 μg/L 6800 200 μg/L 340 100 μg/L 140 100 μg/L	Analys ND 250 μg/L 100 10/15/2013 4:49:41 Pl 9300 100 μg/L 500 10/15/2013 4:49:41 Pl 16000 500 μg/L 500 10/15/2013 4:49:41 Pl 720 100 μg/L 100 10/15/2013 4:49:41 Pl 6800 200 μg/L 100 10/15/2013 4:49:41 Pl 340 100 μg/L 100 10/15/2013 4:49:41 Pl 140 100 μg/L 100 10/15/2013 4:49:41 Pl

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

- 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



4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com

Animas Environmental RcptNo: 1 Client Name: Work Order Number: 1310665 Received by/date: ame Show Logged By: 10/12/2013 10:15:00 AM **Anne Thorne** anne Am Completed By: **Anne Thorne** 10/15/2013 10/15/13 Reviewed By: Chain of Custody Not Present No 🗌 Yes \square 1. Custody seals intact on sample bottles? No 🗌 Yes 🗸 Not Present 2. Is Chain of Custody complete? 3 How was the sample delivered? Courier Log In No 🗆 NA 🗀 Yes 🗹 4. Was an attempt made to cool the samples? NA 🗌 No 🗔 5. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 Yes 🗸 No 🗔 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 🗸 NA 🗌 9. Was preservative added to bottles? No 🗆 No VOA Vials Yes 🗹 10. VOA vials have zero headspace? Yes No V 11. Were any sample containers received broken? # of preserved bottles checked Yes 🗸 No 🗌 for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 Yes 🔽 13. Are matrices correctly Identified on Chain of Custody? No 🗌 Yes 🗸 14. Is it clear what analyses were requested? Checked by: Yes 🗹 No 🔲 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (If applicable) Yes 🗌 NA 🗹 16. Was client notified of all discrepancies with this order? No 🗌 Person Notified: Date By Whom: eMail Phone Fax In Person Via: Regarding: **Client Instructions:** 17. Additional remarks: 18. Cooler Information Condition | Seal Intact | Seal No Cooler No Temp ℃ Seal Date 1.3 Good Yes

	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	([†] O)	(SV	ORIO SIN	(1.81) (1.81) (1.40) (1.40) (1.40) (1.40)	A bo bod 5 no 00 or ni, No ni, No esbii	TH + STE BTEX + MT TPH 8015B TPH (Methored) EDB (Methored) EDB (Methored) EDB (Methored) EDB (Methored) EDB (Methored) RCRA 8 Methored Anions (F,C 8081 Pestic 8081 Pestic 8081 Pestic		-202 X X X	The second secon					Time Remarks: BIEX/ IN PD IN FOU WILL CAS, 1656	Time	If recessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
Turn-Around Time:	Standard 🗆 Rush	Project Name: ロードイト	Energen Julander + +	Project #:		Project Manager:	Rock Vouverse	PARTITION FOOL	Sampler: J. Christophuson/R. Kann Onlosi: "XX6	Sample stemperature: //	Container Preservative FEALE Type and # Type	2-talurbass	\	2-40 MLVOH HG					Received by: Charles Calles Philes	Received by: Date 1	ontracted to other accredited laboratories. This serves as
Chain-of-Custody Record	Animas Environmental	Covvices 11C	Mailing Address: 624 E Comanche	Tarnington NA 87401	524 228		ige:	☐ Level 4 (Full Validation)	□ Other		Matrix Sample Request ID	1545 Air Well Gas MW-4	Well Gasmw-4	4-MN 0					Time: Relinquished by:	Time: Relinquished by:	cessary, samples submitted to Hall Environmental may be subo
ວິ	Client: A		Mailing Ad	Fig	Phone #: 505	email or Fax#;	QA/QC Package:	Standard Standard	Accreditation	□ EDD (Type)	Date T	10-10-13		10-11-13					Date: Tin 19/11/17 1	Date: Time:	If nec



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

OrderNo.: 1311460

November 15, 2013

Heather Woods
Animas Environmental Services
624 East Comanche
Farmington, NM 87401
TEL: (505) 716-2787

FAX

RE: Energen Julander #1E

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 9 sample(s) on 11/12/2013 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

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order: 1311460

Date Reported: 11/15/2013

1311460

Hall Environmental Analysis Laboratory, Inc.

CLIENT:

Animas Environmental Services

Project:

Energen Julander #1E

Lab ID: 1311460-001

Client Sample ID: MW-1

Client Sample ID: MW-2

Client Sample ID: MW-3

Collection Date: 11/11/2013 1:20:00 PM

Lab Order:

Matrix: AQUEOUS

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES					Ana	alyst: NSB
Benzene	ND	5.0	μg/L	5	11/13/2013 4:22:4	5 PM R14766
Toluene	92	5.0	μg/L	5	11/13/2013 4:22:4	5 PM R14766
Ethylbenzene	360	5.0	μg/L	5	11/13/2013 4:22:4	5 PM R14766
Xylenes, Total	3200	100	μg/L	50	11/13/2013 3:52:30	PM R14766
Surr: 4-Bromofluorobenzene	133	85-136	%REC	5	11/13/2013 4:22:4	5 PM R14766

Lab ID:

1311460-002

Collection Date: 11/11/2013 3:24:00 PM

Matrix: AQUEOUS

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES					Ana	alyst: NSB
Benzene	ND	1.0	μg/L	1	11/13/2013 8:24:23	3 PM R14766
Toluene	ND	1.0	μg/L	1	11/13/2013 8:24:23	3 PM R14766
Ethylbenzene	ND	1.0	µg/L	1	11/13/2013 8:24:23	3 PM R14766
Xylenes, Total	ND	2.0	μg/L	1	11/13/2013 8:24:23	3 PM R14766
Surr: 4-Bromofluorobenzene	101	85-136	%REC	1	11/13/2013 8:24:23	3 PM R14766

Lab ID:

1311460-003

Collection Date: 11/11/2013 2:25:00 PM

Matrix: AQUEOUS

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES				An	alyst: NSB
Benzene	2300	100	μg/L	100 11/13/2013 9:24:4	DPM R14766
Toluene	320	100	μg/L	100 11/13/2013 9:24:40	DPM R14766
Ethylbenzene	170	100	μg/L	100 11/13/2013 9:24:40	DPM R14766
Xylenes, Total	910	200	μg/L	100 11/13/2013 9:24:4	DPM R14766
Surr: 4-Bromofluorobenzene	105	85-136	%REC	100 11/13/2013 9:24:40	DPM R14766

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Page 1 of 4
- Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

Lab Order: 1311460

Date Reported: 11/15/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT:

Animas Environmental Services

Project:

Lab ID:

Energen Julander #1E

1311460-004

1311460

Client Sample ID: MW-4

Collection Date: 11/11/2013 1:54:00 PM

Matrix: AQUEOUS

Lab Order:

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES					Ana	alyst: NSB
Benzene	89	5.0	μg/L	5	11/14/2013 3:52:3	2 PM R14824
Toluene	87	5.0	μg/L	5	11/14/2013 3:52:3	2 PM R14824
Ethylbenzene	8.8	5.0	μg/L	5	11/14/2013 3:52:32	2 PM R14824
Xylenes, Total	68	10	μg/L	5	11/14/2013 3:52:32	2 PM R14824
Surr: 4-Bromofluorobenzene	103	85-136	%REC	5	11/14/2013 3:52:32	2 PM R14824

Lab ID:

Client Sample ID: MW-5

Client Sample ID: MW-6

1311460-005

Collection Date: 11/11/2013 11:06:00 AM

Matrix: AQUEOUS

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES			11.00		Ana	alyst: NSB
Benzene	ND	1.0	μg/L	1	11/13/2013 11:55:2	23 PM R14766
Toluene	ND	1.0	μg/L	1	11/13/2013 11:55:2	23 PM R1476€
Ethylbenzene	ND	1.0	μg/L	1	11/13/2013 11:55:2	23 PM R14766
Xylenes, Total	ND	2.0	μg/L	1	11/13/2013 11:55:	23 PM R14766
Surr: 4-Bromofluorobenzene	100	85-136	%REC	1	11/13/2013 11:55:2	23 PM R14766

Lab ID:

1311460-006

Collection Date: 11/11/2013 10:27:00 AM

Matrix: AQUEOUS

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES	.,,,				An	alyst: NSB
Benzene	ND	1.0	μg/L	1	11/14/2013 12:25:	27 AM R14766
Toluene	ND	1.0	μg/L	1	11/14/2013 12:25:	27 AM R14766
Ethylbenzene	ND	1.0	μg/L	1	11/14/2013 12:25:	27 AM R14766
Xylenes, Total	ND	2.0	μg/L	1	11/14/2013 12:25:	27 AM R1476€
Surr: 4-Bromofluorobenzene	94.8	85-136	%REC	1	11/14/2013 12:25:	27 AM R14766

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

- Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- o RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND

- P Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

Lab Order: 1311460

Date Reported: 11/15/2013

1311460

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Project:

Animas Environmental Services

Energen Julander #1E

Lab ID: 1311460-007

Client Sample ID: MW-7

Collection Date: 11/11/2013 12:34:00 PM

Lab Order:

Matrix: AQUEOUS

Analyses Result **RL Qual Units DF** Date Analyzed **Batch ID EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene 5.0 8.6 μg/L 5 11/14/2013 12:55:39 AM R14766 Toluene 500 20 20 11/14/2013 4:22:44 PM R14824 μg/L Ethylbenzene 160 5.0 µg/L 11/14/2013 12:55:39 AM R14766 Xylenes, Total 1200 10 µg/L 11/14/2013 12:55:39 AM R14766 Surr: 4-Bromofluorobenzene 120 85-136 %REC 11/14/2013 12:55:39 AM R14766

Lab ID:

1311460-008

Collection Date: 11/11/2013 11:49:00 AM

Matrix: AQUEOUS

Client Sample ID: MW-8

Client Sample ID: Trip Blank

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES					Ana	alyst: NSB
Benzene	ND	1.0	μg/L	1	11/14/2013 1:56:08	3 AM R14766
Toluene	ND	1.0	μg/L	1	11/14/2013 1:56:08	3 AM R14766
Ethylbenzene	ND	1.0	μg/L	1	11/14/2013 1:56:08	3 AM R14766
Xylenes, Total	ND	2.0	µg/L	1	11/14/2013 1:56:08	3 AM R14766
Surr: 4-Bromofluorobenzene	104	85-136	%REC	1	11/14/2013 1:56:08	3 AM R14766

Lab ID:

1311460-009

Collection Date:

Matrix: TRIP BLANK

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES					Ana	alyst: NSB
Benzene	ND	1.0	μg/L	1	11/14/2013 2:26:2	1 AM R14766
Toluene	ND	1.0	μg/L	1	11/14/2013 2:26:2	1 AM R14766
Ethylbenzene	ND	1.0	μg/L	1	11/14/2013 2:26:2	1 AM R14766
Xylenes, Total	ND	2.0	μg/L	1	11/14/2013 2:26:2	1 AM R14766
Surr: 4-Bromofluorobenzene	103	85-136	%REC	1	11/14/2013 2:26:2	1 AM R14766

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Page 3 of 4
- Sample pH greater than 2 for VOA and TOC only. P
- Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1311460

15-Nov-13

Client:

Animas Environmental Services

Project:

Energen Julander #1E

Sample ID 5ML RB	SampT	ype: ME	BLK	Tes						
Client ID: PBW	Batch	1D: R1	4766	F	RunNo: 1	4766				
Prep Date:	Analysis D	ate: 11	1/13/2013	8	SeqNo: 4	25689	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Foluene	ND	1.0								
Ethylbenzene	ND	1.0								
Kylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	20		20.00		101	85	136			
Sample ID 100NG BTEX I	SamnT	vne: LC	• •	Tee	tCode: E	PA Method	8021B: Volat	ilos		

Sample ID TOUNG BI	EX LCS Sa	mp rype: L	US .	168	icode. El	PA Method	6021B; Volati	ies		
Client ID: LCSW	E	Batch ID: R	14766	F	RunNo: 1	4766				
Prep Date:	Analys	sis Date: 1	1/13/2013	5	SeqNo: 4	25690	Units: µg/L			
Analyte	Resu	ilt_PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3enzene	1	9 1.0	20.00	0	94.2	80	120			
Toluene	1	9 1.0	20.00	0	96.2	80	120			
Ethylbenzene	1	9 1.0	20.00	0	95.6	80	120			
Kylenes, Total	5	9 2.0	60.00	0	98.0	80	120			
Surr: 4-Bromofluorobenze	ne 2	:1	20.00		105	85	136			

Sample ID 5ML RB	SampType: MBLK TestCode: EPA Method 8021B: Vo						8021B: Volat	iles		
Client ID: PBW	Batch	1D: R1	4824	F	RunNo: 1	4824				
Prep Date:	Analysis D	ate: 11	1/14/2013	8	SeqNo: 4	27266	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3enzene	ND	1.0		-						
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
(ylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	20		20.00		98.5	85	136			

	Total and the state of the stat									
Client ID: LCSW	Bato	ch ID: R1	4824	F	RunNo: 1	4824				
Prep Date:	Analysis	Date: 1	1/14/2013	8	SeqNo: 4	27268	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.9	80	120			
Toluene	18	1.0	20.00	0	92.3	80	120			
Ethylbenzene	18	1.0	20.00	0	90.5	80	120			
Xylenes, Total	55	2.0	60.00	0	92.3	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	85	136			

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range

Sample ID 100NG BTEX LCS

SampType: LCS

- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits * R
 - Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В

TestCode: EPA Method 8021B: Volatiles

- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

Page 4 of 4



4901 Hawkins NE Albuquerque, NM 87109

Albuquerque, NM 8/105
TEL: 505-345-3975 FAX: 505-345-4107

mirri osuminai ariatysis lauvi utoty

Sample Log-In Check List

EL: 505-545-5975 FAX: 505-545-410/ Website: www.hallenvironmental.com

Client Name:	Animas Envir	ronmental	Work Order	Number: 13	11460			RcptNo	: 1
Received by/date	e:		11 12 13						
Logged By:	Lindsay Mai) ngin	11/12/2013 10	0:00:00 AM		July 1	Hayo)	
Completed By:	Lindsay Ma		11/12/2013 1:			Amely	Herico)	
Reviewed By:	W/A		Mish	3		ν	U		
Chain of Cus	tody		77/100/1	/					
1. Custody sea	lls intact on sar	mple bottles?		Y	es 🗌	No		Not Present 🗹	
2. Is Chain of C	Custody comple	ete?		Ye	es 🗹	No		Not Present	
3. How was the	sample delive	red?		<u>C</u> c	<u>ourier</u>				
<u>Log In</u>									
4. Was an atte	mpt made to c	ool the sample	es?	Y	es 🔽	No		na 🗆	
5. Were all san	nples received	at a temperati	ure of >0° C to 6.0)°C Ye	s 🗸	No		NA 🗆	
6. Sample(s) in	n proper contai	ner(s)?		Y	es 🗹	No			
7. Sufficient sa	mple volume fo	or indicated tes	st(s)?	Ye	es 🗸	No			
8. Are samples	(except VOA	and ONG) proj	perly preserved?	Ye	s 🗸	No		•	
9. Was preserv	ative added to	bottles?		Ye	es 🗌	No	V	NA 🗆	
10.VOA vials ha	ave zero heads	pace?		Ye	es 🗹	No		No VOA Vials	
11. Were any sa	ample containe	rs received br	oken?	Y	es 🗆	No	V	# of preserved	
40 -						Na		bottles checked for pH:	
12. Does paperv (Note discret	work match bot pancies on cha			Ye	s 🗹	No	LJ		or >12 unless noted)
13. Are matrices			of Custody?	Υe	s 🗹	No		Adjusted?	
14. Is it clear wh				Ye	s 🗸	No			
. 15. Were all hold (If no, notify	ding times able customer for a			Ye	s 🗹	No		Checked by:	
		·							
Special Hand	iling (if appl	<u>licable)</u>							
16. Was client n	otified of all dis	crepancies wi	th this order?	Ye	s 🗆	No		NA 🗹	_
Persor	n Notified:	1. 11. 11. 11.		Date:					
By Wh	iom:			Via: ☐ e	Mail _] Phone [Fax	☐ In Person	
Regard	ding:	and the state of t	alle a Philade and Alle School and State and	that a track and a subsection of the subsection	a character and a second	labare - 1995 Aboutton de		The View & Same were a second of the second	
Client	Instructions:		Same and the same		a restaure .				
17. Additional re	emarks:								
18. <u>Cooler Info</u>	o Temp ℃	Condition	Seal Intact Sea	l No Seal	Date	Signed E	Ву	!	
[1	1.0	Good	/es						

HALL ENVIRONMENTAL	LABORATORY								(14)			aldd⊓A †iA															al report.
ME	ORA	_	Albuquerque, NM 87109	107						AC) } }	mə2) 0728							4	-	-	-	-				ne analytica
Ó	ğ	www.hallenvironmental.com	ΣX	505-345-4107	est				`	_		8260B (VO	-		_			\dashv	\neg	-	十	\dagger	1-				d on th
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			4901 Hawkins NE	Tel. 505-345-3975								TPH (Metho	<u> </u>						_	_	_	+					sub-α
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	□ Rush	á	Julane			ger:	_	Word>	(1 / DX		oeranine yek	Preservative Type	HLI		H	11/1	Hel	HU	HU	1161	-	Ę			Thebot		coredited laboratorle
!	Standard	Project Name:	Energen	Project #		Project Manage	-	±	1		Selendiculture	Container Type and #	3-tenlaps							Ħ	7 7	e formation		Received by:	("houst	Received by:	contracted to other a
	Client: Animas Environmental Services		Mailing Address: 624 E Comarche	10/18 MM 05	Phone #: 505 - 564-2281	email or Fax#:	QA/QC Package:	☐ Level 4 (Full Validation)	no	☐ NELAP ☐ Other	☐ EDD (Type)	Date Time Matrix Sample Request ID	11-11-12 1320 Hz MW-1	1524 I			1106 MW-5	9-1711	1234	D)		420 12 Danks		Date: Time: Relinquished by:	2	~	if necessary, sain



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

November 22, 2013

Heather Woods
Animas Environmental Services
624 East Comanche
Farmington, NM 87401
TEL: (505) 716-2787

TEL: (505) 716-2787 FAX (505) 324-2022

RE: Energen Julander Fed #1E OrderNo.: 1311677

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/15/2013 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

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1311677

Date Reported: 11/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander Fed #1E

Lab ID: 1311677-001

Project:

Client Sample ID: MW-1

Collection Date: 11/14/2013 11:19:00 AM

Received Date: 11/15/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analy	/st: NSB
Benzene	ND	10	μg/L	10	11/19/2013 8:44:14	PM R14894
Toluene	85	10	μg/L	10	11/19/2013 8:44:14	PM R14894
Ethylbenzene	220	10	μg/L	10	11/19/2013 8:44:14	PM R14894
Xylenes, Total	2300	100	μg/L	50	11/19/2013 8:14:05 F	PM R14894
Surr: 4-Bromofluorobenzene	116	85-136	%REC	10	11/19/2013 8:44:14 F	PM R14894

Matrix: AQUEOUS

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

- 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 Page 1 of 9
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1311677

Date Reported: 11/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Fed #1E

1311677-002

Lab ID:

Client Sample ID: MW-3

Collection Date: 11/14/2013 11:45:00 AM

Matrix: AQUEOUS Received Date: 11/15/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Analy	st: RAA
Benzene	1500	20	μg/L	20	11/20/2013 1:37:57 F	PM R14955
Toluene	280	20	μg/L	20	11/20/2013 1:37:57 F	PM R14955
Ethylbenzene	54	20	μg/L	20	11/20/2013 1:37:57 F	PM R14955
Xylenes, Total	550	40	μg/L	20	11/20/2013 1:37:57 F	PM R14955
Surr: 4-Bromofluorobenzene	107	85-136	%REC	20	11/20/2013 1:37:57 F	PM R14955

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

- * 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 Page 2 of 9
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1311677

Date Reported: 11/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-4

Energen Julander Fed #1E **Project:**

Collection Date: 11/14/2013 12:14:00 PM

1311677-003 Lab ID:

Matrix: AQUEOUS Received Date: 11/15/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analy	st: RAA
Benzene	ND	5.0	μg/L	5	11/20/2013 2:08:10 P	M R14955
Toluene	140	5.0	μg/L	5	11/20/2013 2:08:10 P	M R14955
Ethylbenzene	350	5.0	μg/L	5	11/20/2013 2:08:10 P	M R14955
Xylenes, Total	3500	100	μg/L	50	11/20/2013 4:09:20 P	M R14955
Surr: 4-Bromofluorobenzene	130	85-136	%REC	5	11/20/2013 2:08:10 P	M R14955

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

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P
- RL Reporting Detection Limit

Lab Order 1311677

Date Reported: 11/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: TRIP BLANK

Project: Energen Julander Fed #1E

Collection Date: 11/14/2013

Lab ID: 1311677-004

Matrix: TRIP BLANK

Received Date: 11/15/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	1.0	μg/L	1	11/20/2013 1:48:14 A	M R14894
Toluene	ND	1.0	μg/L	1	11/20/2013 1:48:14 A	M R14894
Ethylbenzene	ND	1.0	μg/L	1	11/20/2013 1:48:14 A	M R14894
Xylenes, Total	ND	2.0	μg/L	1	11/20/2013 1:48:14 A	M R14894
Surr: 4-Bromofluorobenzene	96.4	85-136	%REC	1	11/20/2013 1:48:14 A	M R14894

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

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

Page 4 of 9

- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1311677

Date Reported: 11/22/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Fed #1E

Lab ID:

1311677-005

Matrix: AIR

Client Sample ID: Well Gas MW-1, 3, & 4

Collection Date: 11/14/2013 10:11:00 AM Received Date: 11/15/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Anal	yst: NSB
Benzene	0.18	0.10	μg/L	1	11/18/2013 10:53:01	AM R14877
Toluene	0.51	0.10	μg/L	1	11/18/2013 10:53:01	AM R14877
Ethylbenzene	0.36	0.10	μg/L	1	11/18/2013 10:53:01	AM R14877
Xylenes, Total	2.3	0.20	μg/L	1	11/18/2013 10:53:01	AM R14877
Surr: 4-Bromofluorobenzene	112	75.4-151	%REC	1	11/18/2013 10:53:01	AM R14877

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

P

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - Page 5 of 9
- Sample pH greater than 2 for VOA and TOC only. RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1311677

22-Nov-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Sample ID 1311677-005ADUP

SampType: DUP

TestCode: EPA Method 8021B: Volatiles

Client ID: Well Gas MW-1, 3,

Batch ID: R14877

RunNo: 14877

Prep Date:	Analysis Date: 11/18/2013			8	SeqNo: 4	28944	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.18	0.10						2.48	20	
Toluene	0.59	0.10						14.0	20	
Ethylbenzene	0.37	0.10						2.56	20	
Xylenes, Total	2.3	0.20						0.416	20	
Surr: 4-Bromofluorobenzene	2.2		2.000		112	75.4	151	0	0	

Qualifiers:

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

Page 6 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1311677

22-Nov-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Sample ID 5ML RB	SampT	ype: ME	BLK	TestCode: EPA Method 8021B: Volatiles							
Client ID: PBW	Batch	1D: R1	4877	F	RunNo: 1	4877					
Prep Date:	Analysis D	Analysis Date: 11/18/2013			SeqNo: 4	28941	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									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
Surr: 4-Bromofluorobenzene	20		20.00		101	85	136				

Sample ID 100NG BTEX LO	CS SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSW	Batch	1D: R1	4877	F	RunNo: 1	4877				
Prep Date:	Analysis D	ate: 1	1/18/2013	S	SeqNo: 4	28942	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.3	80	120			
Toluene	19	1.0	20.00	0	95.9	80	120			
Ethylbenzene	19	1.0	20.00	0	95. 4	80	120			
Xylenes, Total	58	2.0	60.00	0	97.4	80	120			
1,2,4-Trimethylbenzene	19	1.0	20.00	0	94.8	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	98.2	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		105	85	136			

Sample ID 5ML RB	SampT	ype: ME	BLK	Tes	TestCode: EPA Method 8021B: Volatiles						
Client ID: PBW	Batch	ID: R1	4894	F	RunNo: 1	4894					
Prep Date:	Analysis D	ate: 11	1/19/2013	8	SeqNo: 4	30248	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Xylenes, Total	ND	2.0									
Surr: 4-Bromofluorobenzene	22		20.00		110	85	136				

Sample ID	100NG BTEX LCS	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID:	LCSW	Batch	ID: R1	4894	F	RunNo: 1	4894				
Prep Date:		Analysis D	ate: 11	1/19/2013	8	SeqNo: 4	30252	Units: µg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		17	1.0	20.00	0	86.0	80	120			
Toluene		18	1.0	20.00	0	88.2	80	120			
Ethylbenzene		18	1.0	20.00	0	89.1	80	120			

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

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·Hall Environmental Analysis Laboratory, Inc.

WO#: 1311677

22-Nov-13

Client: Animas Environmental Services
Project: Energen Julander Fed #1E

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSW Batch ID: R14894 RunNo: 14894 SeqNo: 430252 Units: µg/L Prep Date: Analysis Date: 11/19/2013 %REC HighLimit %RPD **RPDLimit** Qual SPK value SPK Ref Val LowLimit Analyte PQL 94.6 80 120 Xylenes, Total 57 2.0 60.00 85 20.00 106 136 Surr: 4-Bromofluorobenzene 21

Sample ID 1311677-001AMS SampType: MS TestCode: EPA Method 8021B: Volatiles RunNo: 14894 Batch ID: R14894 Client ID: Analysis Date: 11/19/2013 SeqNo: 430255 Units: µg/L Prep Date: SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result PQL Analyte 73.4 200.0 0 93.0 119 Benzene 190 10 260 10 200.0 85.02 89.3 80 120 Toluene 80 Ethylbenzene 380 10 200.0 216.3 84.2 120 230 200.0 116 85 136 Surr: 4-Bromofluorobenzene

TestCode: EPA Method 8021B: Volatiles Sample ID 1311677-001AMSD SampType: MSD Client ID: MW-1 Batch ID: R14894 RunNo: 14894 Prep Date: Analysis Date: 11/19/2013 SeqNo: 430256 Units: µg/L %RPD **RPDLimit** Qual **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit Analyte Result 93.3 73.4 0.333 20 190 10 200.0 0 119 Benzene 90.8 80 120 1.09 20 270 10 200.0 85.02 Toluene 20 82.2 120 1.04 216.3 80 Ethylbenzene 380 10 200.0 230 200.0 85 136 0 Surr: 4-Bromofluorobenzene

TestCode: EPA Method 8021B: Volatiles Sample ID 100NG BTEX LCS SampType: LCS Client ID: Batch ID: R14955 RunNo: 14955 LCSW Analysis Date: 11/20/2013 SeqNo: 431606 Units: µg/L Prep Date: %RPD **RPDLimit** Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit Qual Analyte 1.0 20.00 Λ 93.9 80 120 19 3enzene 19 20.00 0 94.9 80 120 **Foluene** 1.0 0 94.6 80 120 19 1.0 20.00 Ethylbenzene 59 2.0 60.00 0 97.8 80 120 Xylenes, Total 108 85 136 22 20.00 Surr: 4-Bromofluorobenzene

TestCode: EPA Method 8021B: Volatiles Sample ID 5ML-RB SampType: MBLK Client ID: PRW Batch ID: R14955 RunNo: 14955 Prep Date: Analysis Date: 11/20/2013 SeqNo: 431612 Units: µg/L Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte ND 1.0 **3enzene**

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

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1311677

22-Nov-13

Client:

Animas Environmental Services

Project:

Energen Julander Fed #1E

Sample ID 5ML-RB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBW	Batch	Batch ID: R14955			RunNo: 1	4955				
Prep Date:	Analysis D)ate: 1	1/20/2013	S	SeqNo: 4	31612	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		107	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

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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: Animas Environmental Work Order	Number: 1311677		RcptNo:	_
Received by/date	12013			
Logged By: Ashley Gallegos 11/15/2013 10):00:00 AM	A		:
Completed By: Ashley Gallegos 11/15/2013/12		AZ		·
Reviewed By: 70 11/15/1	3	540		
Chain of Custody				
Custody seals intact on sample bottles?	Yes	No ·	Not Present ✓	
Substance of sample bottles? Is Chain of Custody complete?	Yes 🗸	No :	Not Present	
		140	NOT Present	
3. How was the sample delivered?	<u>Courier</u>			
<u>Log In</u>				
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	0°C Yes ✓	No :	NA	
6. Sample(s) in proper container(s)?	Yes 🗸	No .		
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No LL		
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗸	No 🗔		
9. Was preservative added to bottles?	Yes 🗔	No 💟	NA L.	
10.VOA vials have zero headspace?	Yes 🗸	No : !	No VOA Vials	
11. Were any sample containers received broken?	Yes	No 🗸	# of preserved bottles checked	
12.Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗸	No	for pH:	>12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes 🗸	No 🔝	Adjusted?	•
14 Is it clear what analyses were requested?	Yes 🗹	No LJ		
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🔽	No []	Checked by:	
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this order?	Yes :	No	NA 🗸	
Person Notified:	Date:	A STATE OF THE STA		
By Whom:	,	Phone Fax	In Person	
Regarding:				
Client Instructions:		2.2. W. W. v.		
17. Additional remarks:				
18. Cooler Information				
	I No Seal Date	Signed By		
1 1.0 Good Yes				

FNVTRONMENTAL	ANALYSIS LABORATORY	www.hallenvironmental.com	E - Albuquerque, NM 87109	5 Fax 505-345-4107	Analysis Request		S'*C)d' ²	808	(A(N,l:	PK-R's (8316) PK-R's (8716) PK-R's (PK-R's) Pestic (VV) (86minus) 0728													1 1.2 1 CALLON CALLON CALLON CONTROLL OF A SUbcontracted to Attac according Laboratories of this possibility. Any subcontracted data will be pleady included on the analytical record
	AN	MMM	4901 Hawkins NE	Tel. 505-345-3975		uly)		ව)	η η (ι.	HC	9) b	BTEX + MT TPH 8015B TPH (Metho			×	×	×						Remarks:		A Section of the Contraction
			Fed #15							$\mathbb{R}^{ \mathcal{A} }\mathbb{N}(\mathfrak{g}^{x} + \mathfrak{d}^{x})$		TEAL NO	100-	-002 X	, 500-	< h00-	700						Date Time R	Date Time	
Turn-Around Time:	X Standard ☐ Rush_	Project Name:	Energen Julander			Project Manager:	:	H. Woods	Sampler:	Onlice Z Z Yes	Ten.	Container Preservative Type and # Type	3 tengha HCI	dearen	4	2. Particles HCI	24 langes -	Vanciš	18/2018				Received by:	Received pay	
ord			Mailing Address: 1024 E. Comenche		505-564-2281			□ Level 4 (Full Validation)			Sa	Sample Request ID C	MW-1-32	NW-3	NW-4		17.16			0			1	1. 20 4.	M. Warner
ain-of-Cus	Client: Mitmas Frui von mental	Sevices	dress: 624 E	Farmington A	\$-505,		kage:			□ Other	ype)	Time Matrix	1119 Hzs	-	* 4/2/	120 120	AY						Time: Reinquished by:		11.2 / 11/10/2
Ch	Client:	53	Mailing Ad	Jam	Phone #:	email or Fax#:	QA/QC Package:	☐ Standard	Accreditation		□ EDD (Type))ate	TARE .	7	1	1413	11-14-B 1011	_					Date: Tr		2



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

OrderNo.: 1402362

February 18, 2014

Heather Woods
Animas Environmental Services
624 East Comanche
Farmington, NM 87401
TEL: (505) 716-2787

FAX

RE: Energen Julander Federal #1E

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 9 sample(s) on 2/11/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andel

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-1

Project: Energen Julander Federal #1E

Collection Date: 2/10/2014 1:37:00 PM

Lab ID: 1402362-001

Matrix: AQUEOUS

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	st: JMP
Benzene	ND	5.0	μg/L	5	2/13/2014 1:24:12 PM	R16743
Toluene	42	5.0	μg/L	5	2/13/2014 1:24:12 PM	R16743
Ethylbenzene	470	50	μg/L	50	2/13/2014 12:53:54 PI	M R16743
Xylenes, Total	4100	100	μg/L	50	2/13/2014 12:53:54 PI	M R16743
Surr: 4-Bromofluorobenzene	127	85-136	%REC	5	2/13/2014 1:24:12 PM	R16743

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

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

Page 1 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Energen Julander Federal #1E

Lab ID: 1402362-002 Client Sample ID: MW-2

Collection Date: 2/10/2014 3:21:00 PM

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analy	st: JMP
Benzene	ND	1.0	μg/L	1	2/13/2014 3:25:08 PM	1 R16743
Toluene	ND	1.0	μg/L	1	2/13/2014 3:25:08 PM	1 R16743
Ethylbenzene	ND	1.0	µg/L	1	2/13/2014 3:25:08 PM	1 R16743
Xylenes, Total	ND	2.0	µg/L	1	2/13/2014 3:25:08 PM	1 R16743
Surr: 4-Bromofluorobenzene	102	85-136	%REC	1	2/13/2014 3:25:08 PM	1 R16743

Matrix: AQUEOUS

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit

Page 2 of 11

Sample pH greater than 2. RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-3

Project: Energen Julander Federal #1E

Collection Date: 2/10/2014 2:47:00 PM

Lab ID: 14

1402362-003

Matrix: AQUEOUS

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analy	st: JMP
Benzene	9100	500	µg/L	500	2/14/2014 1:23:16 PM	R16771
Toluene	8800	500	μg/L	500	2/14/2014 1:23:16 PM	R16771
Ethylbenzene	670	50	μg/L	50	2/13/2014 3:55:17 PM	R16743
Xylenes, Total	5300	100	μg/L	50	2/13/2014 3:55:17 PM	R16743
Surr: 4-Bromofluorobenzene	115	85-136	%REC	50	2/13/2014 3:55:17 PM	R16743

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

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

Page 3 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Federal #1E

Lab ID: 1402362-004

Client Sample ID: MW-4

Collection Date: 2/10/2014 2:09:00 PM

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	t: JMP
Benzene	1300	50	μg/L	50	2/14/2014 1:53:21 PM	R16771
Toluene	1100	50	μg/L	50	2/14/2014 1:53:21 PM	R16771
Ethylbenzene	150	5.0	μg/L	5	2/13/2014 4:25:34 PM	R16743
Xylenes, Total	1300	100	μg/L	50	2/14/2014 1:53:21 PM	R16771
Surr: 4-Bromofluorobenzene	127	85-136	%REC	5	2/13/2014 4:25:34 PM	R16743

Matrix: AQUEOUS

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

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

Page 4 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-5

Project: Energen Julander Federal #1E

Collection Date: 2/10/2014 11:43:00 AM

Lab ID:

1402362-005

Matrix: AQUEOUS

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES					Analys	t: JMP
Benzene	1.1	1.0	μg/L	1	2/13/2014 4:55:49 PM	R16743
Toluene	ND	1.0	µg/L	1	2/13/2014 4:55:49 PM	R16743
Ethylbenzene	ND	1.0	µg/L	1	2/13/2014 4:55:49 PM	R16743
Xylenes, Total	110	2.0	µg/L	1	2/13/2014 4:55:49 PM	R16743
Surr: 4-Bromofluorobenzene	89.4	85-136	%REC	1	2/13/2014 4:55:49 PM	R16743

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

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

Page 5 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Federal #1E

Lab ID: 1402362-006

Client Sample ID: MW-6

Collection Date: 2/10/2014 9:48:00 AM

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Analy	st: JMP
Benzene	ND	1.0	μg/L	1	2/13/2014 5:25:57 PM	R16743
Toluene	ND	1.0	μg/L	1	2/13/2014 5:25:57 PN	f R16743
Ethylbenzene	ND	1.0	μg/L	1	2/13/2014 5:25:57 PN	f R16743
Xylenes, Total	ND	2.0	μg/L	1	2/13/2014 5:25:57 PM	1 R16743
Surr: 4-Bromofluorobenzene	103	85-136	%REC	1	2/13/2014 5:25:57 PN	f R16743

Matrix: AQUEOUS

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

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

Page 6 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-7

Project: Energen Julander Federal #1E

Collection Date: 2/10/2014 12:26:00 PM

Lab ID: 1402362-007

Matrix: AQUEOUS Re

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Analys	: JMP
Benzene	14	5.0	μg/L	5	2/13/2014 5:56:04 PM	R16743
Toluene	870	50	μg/L	50	2/14/2014 2:23:24 PM	R16771
Ethylbenzene	200	5.0	μg/L	5	2/13/2014 5:56:04 PM	R16743
Xylenes, Total	1600	100	μg/L	50	2/14/2014 2:23:24 PM	R16771
Surr: 4-Bromofluorobenzene	129	85-136	%REC	5	2/13/2014 5:56:04 PM	R16743

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

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

Page 7 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Energen Julander Federal #1E

Lab ID: 1402362-008

Client Sample ID: MW-8

Collection Date: 2/10/2014 10:41:00 AM

Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Analys	t: JMP
Benzene	ND	1.0	μg/L	1	2/13/2014 6:56:29 PM	R16743
Toluene	ND	1.0	μg/L	1	2/13/2014 6:56:29 PM	R16743
Ethylbenzene	ND	1.0	μg/L	1	2/13/2014 6:56:29 PM	R16743
Xylenes, Total	ND	2.0	μg/L	1	2/13/2014 6:56:29 PM	R16743
Surr: 4-Bromofluorobenzene	101	85-136	%REC	1	2/13/2014 6:56:29 PM	R16743

Matrix: AQUEOUS

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

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.

Page 8 of 11

RL Reporting Detection Limit

Lab Order 1402362

Date Reported: 2/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: Trip Blank

Collection Date:

Project: Energen Julander Federal #1E **Lab ID:** 1402362-009

Matrix: TRIP BLANK Received Date: 2/11/2014 10:04:00 AM

Analyses	Result	RL Qu	al Units	DF	Batch	
EPA METHOD 8021B: VOLATILES					Analy	st: JMP
Benzene	ND	1.0	μg/L	1	2/13/2014 7:26:51 PM	R16743
Toluene	ND	1.0	μg/L	1	2/13/2014 7:26:51 PM	R16743
Ethylbenzene	ND	1.0	μg/L	1	2/13/2014 7:26:51 PM	1 R16743
Xylenes, Total	ND	2.0	μg/L	1	2/13/2014 7:26:51 PM	R16743
Surr: 4-Bromofluorobenzene	100	85-136	%REC	1	2/13/2014 7:26:51 PM	R16743

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

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

Page 9 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1402362

18-Feb-14

Client: Animas Environmental Services Energen Julander Federal #1E **Project:**

TestCode: EPA Method 8021B: Volatiles Sample ID 5ML RB SampType: MBLK Client ID: **PBW** RunNo: 16743 Batch ID: R16743 SeqNo: 481947 Units: µg/L Prep Date: Analysis Date: 2/13/2014 %RPD **RPDLimit** Qual Analyte SPK value SPK Ref Val %REC HighLimit PQL LowLimit Benzene ND 1.0 Toluene ND 1.0 Ethylbenzene ND 1.0 Xylenes, Total ND 2.0 107 85 136 Surr: 4-Bromofluorobenzene 21 20.00

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles RunNo: 16743 Client ID: LCSW Batch ID: R16743 Analysis Date: 2/13/2014 SeqNo: 481948 Units: µg/L Prep Date: Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 20.00 105 80 120 21 1.0 0 Benzene 80 21 1.0 20.00 0 106 120 Toluene Ethylbenzene 21 1.0 20.00 0 105 80 120 0 80 120 64 2.0 60.00 107 Xylenes, Total 20.00 136 Surr: 4-Bromofluorobenzene 22

TestCode: EPA Method 8021B: Volatiles Sample ID 1402362-001AMS SampType: MS Client ID: Batch ID: R16743 RunNo: 16743 Prep Date: Analysis Date: 2/13/2014 SeqNo: 481951 Units: µg/L %RPD **RPDLimit** SPK value SPK Ref Val %REC HighLimit Qual Analyte Result **PQL** LowLimit Benzene 110 5.0 100.0 0 108 71 129 68.4 135 Toluene 150 5.0 100.0 41.78 112 ES 506.9 136 69.4 135 640 5.0 100.0 Ethylbenzene 300.0 3662 133 72.4 135 Ε Xylenes, Total 4100 10 s 100.0 147 85 136 Surr: 4-Bromofluorobenzene 150

Sample ID 1402362-001AM	ISD SampT	D SampType: MSD TestCode: EPA Method 8021B: Volatiles								
Client ID: MW-1	Batcl	Batch ID: R16743 RunNo: 16743								
Prep Date:	Analysis D	Date: 2/	e: 2/13/2014 SeqNo: 48195				Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	100	5.0	100.0	0	105	71	129	3.32	20	
Toluene	150	5.0	100.0	41.78	109	68.4	135	1.83	20	
Ethylbenzene	640	5.0	100.0	506.9	129	69.4	135	0.990	20	E
Xylenes, Total	4000	10	300.0	3662	125	72.4	135	0.603	20	E
Surr: 4-Bromofluorobenzene	150		100.0		148	85	136	0	0	S

*Oualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Sample pH greater than 2.
- RL Reporting Detection Limit

Page 10 of 11

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1402362

18-Feb-14

Client:

Surr: 4-Bromofluorobenzene

Animas Environmental Services

Project:

Energen Julander Federal #1E

21

Sample ID 5ML RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBW Batch ID: R16771 RunNo: 16771 Prep Date: Analysis Date: 2/14/2014 SeqNo: 482806 Units: µg/L **RPDLimit** Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD Qual Benzene ND 1.0 Toluene ND 1.0 ND 2.0 Xylenes, Total

105

85

136

Sample ID 100NG BTEX LO	CS Samp	Type: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSW	Bate	ch ID: R1	6771	F	RunNo: 1	6771					
Prep Date:	Analysis	Date: 2/	14/2014	\$	SeqNo: 4	82807	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	20	1.0	20.00	0	98.4	80	120				
Toluene	20	1.0	20.00	0	98.2	80	120				
Xylenes, Total	61	2.0	60.00	0	101	80	120				
Surr: 4-Bromofluombenzene	22		20.00		108	85	136				

20.00

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.
- RL Reporting Detection Limit

Page 11 of 11



nau Environmeniai 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

Animas Environmental RcptNo: 1 Client Name: Work Order Number: 1402362 Received by/date: 2/11/2014 10:04:00 AM Logged By: Lindsay Mangin Completed By: Lindsay Mangin 2/11/2014 10:45:29 AM Reviewed By: Chain of Custody No 🗌 Not Present 1. Custody seals intact on sample bottles? No 🗌 Yes 🗸 Not Present 2. Is Chain of Custody complete? 3. How was the sample delivered? **UPS** Log In Yes 🗸 No 🗌 NA 🗌 4. Was an attempt made to cool the samples? No 🗆 NA 🗌 Yes 🔽 5. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 No 🗌 Sample(s) in proper container(s)? No \square Yes 🗸 7. Sufficient sample volume for indicated test(s)? No 🗆 Yes 🗸 8. Are samples (except VOA and ONG) properly preserved? NA 🗆 No 🗹 Yes 🗌 9. Was preservative added to bottles? Yes 🗸 No 🗔 No VOA Vials 10.VOA vials have zero headspace? Yes 🗆 No 🗹 11. Were any sample containers received broken? # of preserved bottles checked Yes 🗸 No 🗌 for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 Yes 🔽 13. Are matrices correctly identified on Chain of Custody? No 🗆 V 14. Is it clear what analyses were requested? Yes No 🗌 Checked by: Yes 🗹 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes 🗌 No 🗌 NA 🔽 16. Was client notified of all discrepancies with this order? Person Notified: Date: Phone Fax In Person By Whom: Via: eMail Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information CoolenNo. Stemp: Chit/Condition: (Sea Lines): Sea (No.): (Seal Date): (Sea Senechby, 1.9 Good Yes

4	RY								(N 70	Y) s	Air Bubble	_													1
HALL ENVIRONMENTAL	LABORATORY		6		-												1	1							s. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report
Σ	0	-	Albuquerque, NM 87109	107	Ė				(A(<u>-</u>	me2) 0728		_	-	1	7	1	7	7					j	the an
ō	AB	www.hallenvironmental.com	ΣŽ	505-345-4107	lest					(A	8260B (VC]	ated on
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	B		4		1	Project Manager:		4	٢	Sample Temperati					-	-				7			-	1	Scontracted to other accredit
	Standard	Nar	Endam	#		Man			<u>ا</u>	e Têr	Container Type and #	2-420/10A								2-Brillian				ved by:	to of
	Sta	oject	2	oject		oject			Sampler: On lee	Jduir	Conta	140							7	100				Received by:	層
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	٠.		2ct	74				☐ Level 4 (Full Validation)			Sample Request ID	MW	MW-7	Mm -3	MW-4	MW-5	MW-6	1	MW-8	TND Blank				1/2	ig i
	mta		ma	<i>3</i> ≤				4 (eldı	2	Ę	ξ	ろう	7	MΝ	-MM	3	10	-			3 7	를 교
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	2		74	178	204				□ Other		Matrix	70			-					-1				Relinquished by:	yples s
	25	3	s.	Farmington NM 97401	515-524-228							┼		_		~	S	_	_	•		_	-	10 P	If necessary samples submitted to Hall Environmental may b
	<u>j</u>	SANA'Z E.	Idres	13	公	ax#:	kage	ā	fion	(ype	Time	125	1251	7447	40	1143	844Q	1226	1601					Time:	Secess
	± ₹	3	Jg Ac			or F	СРа	anda	Accreditation	000	σ		· ·	-			٢	=	-		_			三三	7
	Client: Animas Enmonmenta		Mailing Address: 1074 E. Psm anch		Phone #:	email or Fax#:	QA/QC Package:	Standard	Accr	□ EDD (Type)	Date	holit	-		-				-)1					late:	<u>a</u>

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

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

roject:	Groundwater S	Sampling		Project No.:
Site:	Julander	FED #1	.E	Date: 5-3-2013
Location:				Time: 0830
Tech:	, lanu	~4_		Form:
Well	Depth to	Depth to	NAPL	
I.D.	NAPL	Water (ft.)	Thickness (ft.)	Notes / Observations
1.0.	(ft.)	water (it.)	Tillekiless (it.)	
i		41.89		50.73 TOW 2" WEY 5/1+
2	0	ED0000 38.60		42.31 TOW - 1" Well
3		40.49		48.43 TOW 2" well sit
4		40.21		46.90 TOW 2" Well Silt
,				

				<u>la constitución de la constituc</u>

V	Monitor W	/ell Developme	ent Rec	ord	Animas Environmental Services						
Mon	itor Well No	o: <u>2</u>		-		che, Farmington NM 87401 -2281 Fax (505) 324-2022					
Site:	Jula	inder Feb 1	#1E		Project No.:						
Location:	_ the	rgen				5-3-2013					
Project:		j; l·L·				1323					
	echnician(s Diameter (in				Air Temp:						
		t): 38.60	Time:	-		ial gauging of all wells)					
		t): 39,20	_			development of well)					
If N	APL Presen	nt: D.T.P.:		W.:	Thickness:	Time:					
Developn	nent Method	d:									
	Water Quality Parameters - Recorded During Well Purging										
~·	Temp	Conductivity			Purged	Notes/Observations					
Time	(deg C)	(mS)	рН	DO mg/L	Volume	(color, clarity, and odor)					
				·	(gallons)						
1345	17.92	1.039	7.29	3.27	1st Few Bailey	Dark Brown Hza					
1420	19,68	1.046	7.30	3.45	1/2 Bogal.						
1512	18.85	0.558	7.46	3.42	1 gal	It Tan Itro					
			-								
Analy	tical Paran	neters (include	analysi	s method a	nd number and type	e of sample containers)					
	D	isposal of Purge	d Water:	PER Ene	agen, into pit-	tank on site					
Collect		Stored on Ice in			NIA						
		stody Record Co	•		1						
			•		nental Analysis Labora	itory, Albuquerque, NM					
Fauinme	Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter										
-dark	and New Disposable Bailer										
Notes/Com	ments:	1" wal	. IN	. 11	ery is slow	to none					
10100,00111					- 1 1 6	2 more					
		MILER	Bailer refusal after 1 gal purge.								

٨	/lonitor We	ll Developme	ent Reco	ord	Animas Environmental Services				
Mon	itor Well No:			-		anche, Farmington NM 87401 64-2281 Fax (505) 324-2022			
Site:	Julander	FED 13	E		Project No	o.:			
Location:	Energo					e: 5-3·2013			
Project:					Arrival Time				
	echnician(s): Diameter (in):			7	Air Temp: 48° F Total Well Depth (ft): 4343 /44.54				
	al D.T.W. (ft):		Time:	0920		nitial gauging of all wells)			
	al D.T.W. (ft):			1115		r development of well)			
If N	APL Present:	D.T.P.:	D.T <i>.</i> '	W.:		Time:			
Developn	nent Method:	Surging	a Baili	nig					
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity		M9,	Purged	Notes/Observations			
Time	(deg C)	(mS)	рН	DO 1/2	Volume (gallons)	(color, clarity, and odor)			
0955	14.65	1.465	Ce.42	- W	1.0	silt, brown of Paleshaving,			
1006	16.07	1.533	6.63	1	3.5	Silt brown - PVCShavings			
1023	15.12	1.534	6.63		(e-0	light brom Hzo silt.			
1034	16.23	1.5 39	6.63	- 1.97	9.0	light brum Hzo some silt			
1052	15.14	1.560	6.76	2,10	13.0	light brow Hzo som silt			
1100	15:13	1.547	6.69	2.70	15.0	light Tan min.silt			
1107	15.26	1.554	4.66	2.80	17.0	light tan min, silt			
1115	15.13	1.556	6.67	2.62	20.0	Gene			
·····									
A I-									
Analy	riicai Param	eters (include	anaiysi	s method ar	id number and ty	pe of sample containers)			
			**						
				W. Haler C	A-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				
	Di-	nesel of Dynamic	d 18/545 m.	Des C	2	- Junt			
Callage	UIS Lad Camples	posal of Purge	u vvater:	TEIZ CACI	GEN into	pit on site.			
		Stored on Ice in							
	Chain of Custody Record Complete: Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM								
Equipm	ont Head Du	_	•						
Equipm	eur osea pui			osable Bailer	son interrace Level,	YSI Water Quality Meter			
Notes/Com	ments:	ana	1	P.L	at site o -	Li Iluu (6 ana			
	, , ,	o wlumn		product order of suraing & bailing continued					
1.36	· · · · · · · · · · · · · · · · · · ·	m/ 2" vell	PVC	oder was still present, however strant					
6.50	· · ·		<u> </u>	f,	dor subside 0, 13-20 am/s.				
- V					· · · · · · · · · · · · · · · · · · ·	3			

	Monitor We	II Developme	ent Rec	ord	Animas En	vironmental Services			
Mon	itor Well No:	-4		-	1	nche, Farmington NM 87401 4-2281 Fax (505) 324-2022			
Site:	Julande	er FED 1	E		Project No.:				
Location:	ENERG	15~			Date	5.3.2013			
Project:					Arrival Time: 1/30				
	echnician(s):				Air Temp: 50° F				
•	Diameter (in):				Total Well Depth (ft): 44.90 /47.84				
	al D.T.W. (ft):		Time:		(taken at initial gauging of all wells)				
Fin	al D.T.W. (ft):	45.01	_ Time:	1301		development of well)			
	APL Present:		D.I.	W.:	I hickness:	Time:			
Developi	nent Method:								
Water Quality Parameters - Recorded During Well Purging									
~ ,	Temp	Conductivity			Purged	Notes/Observations			
Time	(do# C)	(0)	-11	Dong/	Volume	(color, clarity, and odor)			
	(deg C)	(mS)	pН	' 170	(gallons)	(**************************************			
แฮง	16-20	(.136	7.00	4.82	1.0	Dark berown Her sheen odo			
1210	16.51	1.208	694	4.17	4.0	Derk brown Hzo shavings			
1226	16.91	1.131	7.01	4.42	7.0	don Sheen Brown 120			
1238	16.50	1.120	4.97	4.24	10.0	Lt. Tan Hzo gome sheen			
1252	16.54	1.102	6.95	4.08	13.0	Lt Tan Hzo gome sheen Lt Tan-Clearing Up			
1305	16.51	1,103	697	3.95	15.0	Clean			
		,							
Analy	tical Parame	eters (include	analysi	method a	nd number and typ	e of sample containers)			
		-							
	*								
	Dis	posal of Purge	d Water:	Per Fuer	esson into pit	tank on site			
Collect	ed Samples S	Stored on Ice in	1 Cooler:	<u> </u>	JA				
		tody Record Co							
					-	atory, Albuquerque, NM			
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter									
				osable Bailer					
Notes/Com	ments:	N. I	well wa	s slow to	recover dur	M Purama			
Notes/Comments: well was slow to below the column the had sheen, od 1,09 volume to 8 apls. Here dea					der suc shour	n non 1st bailer			
_	volum,	tos	3 04/5.	1-120 de	ary 0: 9 - 10	5 aas			
			J	1,,,,	0 -	0			
			···· · · · · · · · · · · · · · · · · ·		~				

Animas Environmental Services DEPTH TO GROUNDWATER 624 E. Comanche, Farmington NM 87401 **MEASUREMENT FORM** Tel. (505) 564-2281 Fax (505) 324-2022 Project: **Groundwater Monitoring** Project No.: Site: Energen Julander Fed #1E Date: 5-6.2013 Location: 😿 Time: 1040 Tech: Form: 1 of 1 L. Lamon F. Well Depth to NAPL Depth to Water NAPL Time **Notes / Observations** I.D. (ft.) (ft.) Thickness (ft.) MW-1 41.87 1042 50.63 DW 38.48 MW-2 46.84 MW-3 40.47 1100 MW-4 40.17 47.84 1106

MONI	TORING W	ELL SAMPLI	NG REC	ORD	Animas Environmental Services				
Mon	itor Well No:	MW	-1	-		24 E. Comanche, Farm Fel. (505) 564-2281 Fax			
Location: Project: Sampling Purge Well I Initis		Monitoring and L.L. Purge 3 u 2" 41.87 41.88	Time: Time: Time:	50100 1134 1204	(taken after sample collection)				
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	PURGED VOLUME						
Time	(deg C)	(µS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations		
1147	15.67	1.282	4.36	6.82	-70.1	1st Bailer	Clear H20		
1153	15.09	1.5 85	2.12	690	-85.4	1.5 gul	gray Hzo		
1200	14.91	1.593	2.70	6.92	We.1	1.5 gul 2.5 gal	gray Hav odor		
1203	14.61	0.265	4.80	6.95	\$59.4	4.5 gal	gray How odor		
Analytical Parameters (include analysis method and number and type of sample containers)									
	Full VOCs no	er EPA Method 8	3021 (3 - 40	ml Vials	w/ HCL	oreserve) and TPH as G	RO/DRO		
						e, 1 - 40 mL Vial Nonpre			
Disposal of Purged Water: Per Energen into pit twok at site Collected Samples Stored on Ice in Cooler: Yes Chain of Custody Record Complete: Yes Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer									
Notes/Com	ments:	1 ac	24 H20	العما	has	silt. slight f	roduct oder		
	75 colum	n 41	aht 5	heen	re com	ery is a bit	glow.		
1.0	43 1/1/14	, , , , , , , , , , , , , , , , , , ,	5						
4.5	50 To be f	wyed							

MONI	TORING W	ELL SAMPLI	NG REC	ORD	Animas Environmental Services				
Mon	itor Well No:	MW-	-2		624 E. Comanche, Farmington NM 87401				
]7	ГеІ. (505) 564-2281 Fax	_		
		nder Fed #1E				Project No.:			
Location:		Manitoring and	Compline		Date: 5-6.7013				
		Monitoring and			Arrival Time: 1400 1500 Sampline Air Temp: 570 =				
					T.O.C. Elev. (ft):				
Well D	Diameter (in):	Purge			Total Well Depth (ft): 42.28				
l Initia	al D.T.W. (ft):	28-48	Time:			(taken at initial gauging	g of all wells)		
Confir	m D.T.W. (ft):	38.42	Time:	1405		(taken prior to purging			
I Fina	aι υ. ι.w. (π): APL Present:	38.90 DIP:	Time:	1502	Thi	(taken after sample col	ime:		
Water Quality Parameters - Recorded During Well Purging Temp Conductivity DO ORP PURGED VOLUME									
	Temp	Conductivity			ORP	·			
Time	(deg C)	(µS) (mS)	(mg/L)	pH	(mV)	(see reverse for calc.)	Notes/Observations		
1451	15.93	1.021	5.32	7.66	-21.5	3 cups	TANH ZO		
1500	16.85	0.542	4.22	7.44	-18.6	3 cyps	TANHZO		
	•					•			
	- 1001111111111111111111111111111111111								
		-							
Analyt	ical Parame	ters (include	analysis n	nethod a	and nun	nber and type of sar	mple containers)		
	Full VOCs pe	er EPA Method 8	302,1 (3 - 40	mL Vials	w/ HCl j	preserve) and TPH as C	GRO/DRO		
	per EPA l	Method 8015 (2	- 40 mL Via	als w/ HC	preserve	e, 1 - 40 mL Vial Nonpre	eserve)		
		,				•			
	D	isposal of Purg	ged Water:	PER TO	1691 h	, into pit tank	on site		
Colle	cted Samples	s Stored on Ice	in Cooler:	V.C		, , , , , , , , , , , , , , , , , , , ,			
		ustody Record		•					
	Julii Oi Ot	_		**************************************		al Analysis I aboratory	Albuquerque NM		
F	Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter								
Equipm	ient Used Dui					terrace Level, YSI VVate	a Quality Meter		
		and	New Dispo	sable Bal	ier				
Notes/Com									
	3.86 Hz	o Column							
	2440400								
revised. 00	3/10/09								

MON	TORING W	ELL SAMPL	ING REC	ORD	Animas Environmental Services				
Mon	itor Well No:	MW	/-3	-	1	24 E. Comanche, Farm Tel. (505) 564-2281 Fax	-		
Site:	Energen Jula	nder Fed #1E			'	Project No.:			
Location:					-	Date: 5.6.20	013		
Project:	Groundwater	Monitoring and	Sampling			Arrival Time: 1222	1244 Sample		
		L. LAMONE			Air Temp: 56°F				
1		Purge #3			T.O.C. Elev. (ft):				
Well L	Diameter (in):	<u> </u>	Times	-	Total Well Depth (ft): 낙영 용부 (taken at initial gauging of all wells) (taken prior to purging well) (taken after sample collection)				
Confir	al D.T.VV. (it):	40.47	_ Time:	11.00		_(taken at Initial yauying _(taken prior to puraina	i Oi ali Wells) woll)		
Fin	al D.T.W. (ft):	40.40	_ Time:	12.41		_(taken prior to purging _(taken after sample col	lection)		
If N	APL Present:	D.T.P.:	D.T.W].:	Th	ickness:T	ime:		
Water Quality Parameters - Recorded During Well Purging									
Temp Conductivity DO					ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L.)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1229	14.99	1575	2.86	6.85	24.7	Ft Bailer	Clear H20 Odor		
1233	14,94	1,588	2.24	6:72	-4.3	1.0 000			
	14.88	1.500			27.1	200	Hear Idea		
1238	14.80	1.575	2.06		-43.5	1.0 gal, 20 gal 3.5 gal	Clear Hzo Hearz Hzo Cha Hzo		
1219	19.00	1.512	2.06	4.10	17.5	3.8 gae	1720		
Analyt	ical Parame	ters (include	analysis n	nethod a	and nun	nber and type of san	nple containers)		
	Full VOCs pe	er EPA Method	8021 (3 - 40	mL Vials	w/ HCI	oreserve) and TPH as G	GRO/DRO		
	per EPA N	Method 8015 (2	- 40 mL Via	ls w/ HCl	preserve	e, 1 - 40 mL Vial Nonpre	eserve)		
	D	isposal of Pur	ged Water:	PER E	rergen	, into pit tank	on site		
Colle		Stored on Ice				· .			
		stody Record		, ,					
		-	- '			al Analysis Laboratory, A	Albuquerque, NM		
Equipm	ant Head Dur	-							
Equipin	Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer								
Notes/Com	ments:		Hao			sty "clean" Slig	ht odor		
6.43	column		Nn «	digen.	State 2	slight silt.	3 3 - 10 - 3		
1.04	1.04 volume perovers								
354	dal hola	DUNGER	re ~	• • • •	7				
).70	14 1. 10 DR	Purger		***************************************					
revised AA	/////								

MONI	TORING W	ELL SAMPLI	NG REC	ORD	Animas Environmental Services				
Mon	itor Well No:	MW-	-4		624 E. Comanche, Farmington NM 87401				
				-		Геl. (505) 564-2281 Fax	(505) 324-2022		
Site: Location:	Energen Jula	nder Fed #1E			-	Project No.:	0.2		
	Groundwater	Monitoring and	Sampling			Date: 5.6.20	(345 sample)		
Sampling	Technician:	LAMONA			•	Arrival Time: 1313 Air Temp: 56° F			
Purg	e / No Purge:	Punge				.C. Elev. (ft):			
Well L	Diameter (in):	Purge	Z '		Total We	ll Depth (ft): 식구. 8년 (taken at initial gauging			
Confirm D.T.W. (ft): 40.17 Time: 1316						(taken prior to purging	•		
Initial D.T.W. (ft): 40.17 Time: 100.00 Time: 1316 Final D.T.W. (ft): 42.25 Time: 1344						(taken after sample col			
Confirm D.T.W. (ft): 4p.(1 Time: 1316 (taken prior to purging well) Final D.T.W. (ft): 42.25 Time: 1344 (taken after sample collection) If NAPL Present: D.T.P.: D.T.W.: Thickness: Time:									
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations		
1323	14.81	1.200	2.34	7.10	-5.0	1st Builer	Clear HZO		
1329	14.78	1-264	2.07	7.03	-9.9	1.0 gal.	Tan Hzu Cloudy		
1334	14.86	1.219	1.92	7.02	-14.3	2.0 gol	Clary Hol		
1340	14.84	1.150	1.87	7.02	-23.4	3.0 gal	cloudy Hzo Sheer		
1345	14.94	1.123	2.26	7.03	-28.7	1.0 gal. 2.0 gal 3.0 gal 3.75 gal	Clarky Hob Clarky Hoo Sheer		
Analyt	ical Parame	ters (include a	analysis n	nethod a	and nun	nber and type of sar	nple containers)		
	Full VOCo no	or EDA Mothod 9	2024 /2 40	ml Viole	w/ UCL	processos and TDH as C	PO/DPO		
						preserve) and TPH as C			
	per EPA I	vietnoù ou 15 (2	- 40 IIIL VIA	is W/ HU	preserve	e, 1 - 40 mL Vial Nonpre	5351VE)		
	D	isposal of Puro	ed Water:	Per s		· Ido sitta	l us et E		
Colle	cted Samples	Stored on Ice	in Cooler:	1012	c surge	n into pittan	SE 01 51. E		
300		stody Record		L.					
	Chain of Ot	-				al Analysis Laboratory,	Albuquerque NM		
Fauinm	ent ilead Dui	•	٠,						
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer									
Notes/Com	ments:		iton Biopo.	odolo bal					
71.7									
1.25									
3.75							7700		
revised 06	revised: 00/10/09								

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

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

Project:	Groundwater	Sampling		Project No.:
Site:	Energen Julan	der Fed #1E		Date: 8.2/.2013
Location:				Date: 8 · Z/ · Z0 / 3 Time: 0745
Tech:	L.lamen	e		Form:
Well	Depth to	Depth to	NAPL	
I.D.	NAPL	Water (ft.)	Thickness (ft.)	Notes / Observations
1.0.	(ft.)	water (it.)	Thickness (it.)	•
MW-7		37.19		TOW: 48.53
MW. 8 MW. 6		35.43		TOW: 46.97
MW.5		36.08		TDW: 46.13
111W.6		34.58		TOW: 48.30
		<u> </u>		
· · · · · · · · · · · · · · · · · · ·				
	•		*	

V	Ionitor We	I Developme	nt Rec	ord	Animas Environmental Services				
Mon	itor Well No:	5		-		iche, Farmington NM 87401 4-2281 Fax (505) 324-2022			
Project: T Well I Initi Fin: If N	Julan	2 36.0B	Time:	pment	Project No.: Date: 8-21-2013 Arrival Time: //24 Air Temp: Total Well Depth (ft): 46.13 (taken at initial gauging of all wells) (taken after development of well) Thickness: Time:				
	Water Quality Parameters - Recorded During Well Purging								
Time Temp Conductivity (deg C) (mS) pH					Purged Volume (gallons)	Notes/Observations (color, clarity, and odor)			
1130					3605'H20 1-17 gals	Dank Grown modely the PVC Shavings Bugs sed neak			
					17-20-	Tan H20			
					20-28 gl. 28-31 gm	Tun Lite Hzo			
					28-31 gm	dein			
Analy	tical Parame	eters (include	analysi	s method a	nd number and typ	e of sample containers)			
Disposal of Purged Water: Tank pt on site Collected Samples Stored on Ice in Cooler: MA Chain of Custody Record Complete: MA Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer. Mo Samples Notes/Comments: 10.08 Hzo Column									

1	Monitor Well Development Record					Animas Environmental Services			
Monitor Well No:					1	624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022			
Site:	Julander	FED #15	7		Project No.:				
14:	_					Date:	8.21.2013		
Project:	Gronda	Moni	tory u	ell Develo	paent Arrival	Time:	0837		
Т	echnician(s):	L. lonn	L		Air	Temp:			
Well	Diameter (in):	2			Total Well Dep	th (ft):	4830		
		34.58	Time:	0825	(taken	n at initi	al gauging of all wells)		
Fin	al D.T.W. (ft): APL Present:	47.75	Time:	1117	(taken	n after d	levelopment of well)		
			D.T.\	N.:	Thickness:		Time:		
Development Method: Bailen									
	Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity			Purged		Notes/Observations		
Time					Volume		(color, clarity, and odor)		
	(deg C)	(mS)	рН		(gallons	•)			
					5 9	al	DARK muddy Hao		
						ĝal	Tan Ho		
						gol	16 Tan		
.,					15=17	-l	Muz cooking in		
						0	bailer of Hro		
						0	Silica Sand in		
							builen Tan		
						Hno			
					79 - 0	,			
					23 gol	ź•	lite Tan-Clear HED Uf some solker SAND		
	,								
·H17					31 ga	٠.	Click H20 NO Sediments.		
							Sediments.		
	b								
Analy	tical Param	eters (include	analysis	s method a	nd number ar	nd typ	e of sample containers)		
	Dis	posal of Purge	d Water:	Into i	pit tank .	on sid	۶		
Collec		Stored on Ice ir		N/A					
	•	tody Record C	•	101	<u> </u>				
	Chain of Ous	•	٠ .	t-		Lahoro	ntory, Albuquerque, NM		
Equipm	ont Hood De-		٠.						
Equipm	ieni Osea Dül						SI Water Quality Meter		
N-45-10		•		osable Bailer		N	o samples		
Notes/Com	ments: 13	8.18 of	th2 (Column					
		- Warner							

Monitor Well Developme	ent Record	Animas En	Animas Environmental Services						
Monitor Well No: 7		• • • • • • • • • • • • • • • • • • •	che, Farmington NM 87401 1-2281 Fax (505) 324-2022						
Site: Julander Fed Location: Energy Project: Monitarna well de Technician(s): La Well Diameter (in): 2 Initial D.T.W. (ft): 57,19 Final D.T.W. (ft): 47,50 If NAPL Present: D.T.P.: Development Method:	Time: D.T.W.:	Date: Arrival Time: Air Temp: Total Well Depth (ft): (taken at init	Project No.: Date: 3-2/2013 Arrival Time: /72-/ Air Temp: 83/F Total Well Depth (ft): 48.53 (taken at initial gauging of all wells) (taken after development of well) Thickness: Time:						
Water Quality Parameters - Recorded During Well Purging									
Time Temp Conductivity (deg C) (mS)	pН	Purged Volume (gallons)	Notes/Observations (color, clarity, and odor)						
Analytical Parameters (include	analysis met	1-10 gal: 10-15 gul 15-25 25-35	Dark Arown Hao Shean Shean Shean Shean Shean Shean Shean Clock. Shean e of sample containers)						
Disposal of Purged Water: Collected Samples Stored on Ice in Cooler: Chain of Custody Record Complete: Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM Equipment Used During Sampling: Keek-Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer Notes/Comments:									
11.34 ft 1/10 C	Olumn								

I.	/lonitor Wel	l Developme	nt Reco	ord	Animas Environmental Services					
Mon	itor Well No:					nche, Farmington NM 87401 4-2281 Fax (505) 324-2022				
Site: Location: Julander Fed & JE					Project No.:					
Project:	Monitor 1	uell Develop	ment		Arrival Time:	8.21.2013				
T	echnician(s):̈́:	L. Lann			Air Temp:	110T 910P				
Initi	Diameter (in): al D.T.W. (ft):	35.43	Time:	-	Total Well Depth (ft): (taken at init	tial gauging of all wells)				
Fin	al D.T.W. (ft):	45.21	Time:	1702	(taken after	tial gauging of all wells) development of well) Time:				
Developn	nent Method:	D.T.P.:		vv.:	Inickness:	rime:				
	Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity			Purged	Notes/Observations				
Time	(deg C)	(mS)	рН		Volume (gallons)	(color, clarity, and odor)				
					1-15 gal	DARK brown, sedenous				
					15-25 gM.	Tan some sedenits Ut Tan to clear				
					25-35-	Tan some sedenuts				
					35-40	It Tax to clear				

		14.44 (Application 1		<u> </u>						
Analy	tical Param	eters (include	analysi	s method a	nd number and typ	oe of sample containers)				
			11-4							
				-D 1		/				
0	Dis	posal of Purge	d Water:	14	Yank on	s etc.				
	ted Samples :	Stored on Ice in	Cooler:		114					
	Chain of Cus				$oldsymbol{\iota}$	ratory, Albuquerque, NM				
Fauinm	ent Used Du	•	-			SI Water Quality Meter				
	ioni ogca bui			osable Bailer		o. Tracer equally motor				
Notes/Com	ments: //.	54 /120								

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

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

		1 /		
Project:	Groundwater Sampling	Project No.: AES	130411	
Site:	Energen Resouces Corporation	Date:	3-23-13	_
Location:	Julander Federal #1E	Time: 0	915	
Tech:	C. Lamernan	Form:		_

Well I.D.	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	-	37.50	S. Commercial Control of Control	
Mw-2		34.29	- ADDRESSAN	
MW- 3		36.16		
MW-4		35.93	-	
MW-5		36.00	•••	
MW-6		34.56	-	
MW-7		37.11	****	
MW-8		35.41		

MON	NITORING V	VELL SAMPL	ING REC	Animas Environmental Services					
Mon	nitor Well No:	MW	/-1	6	624 E. Comanche, Farmington NM 87401				
						Tel. (505) 564-2281 Fax (505) 324-2022			
Site	Groundwate	r Sampling			Project No.: AES 130411				
Location:	Energen Res	ources Corporat	tion		_		23-13		
Project:	Julander Fed	eral #1E			-	Arrival Time: i34			
Samplir	ng Technician:	C.La	meinan		_	Air Temp: 86			
Purg	e / No Purge:				T.C	O.C. Elev. (ft): 544	4.89		
Well I	Diameter (in):	2		-	Total We	ell Depth (ft):	1.75		
	al D.T.W. (ft):	PROPERTY AND ADDRESS OF THE PARTY OF THE PAR	Time:			_(taken at initial gaugin	g of all wells)		
	m D.T.W. (ft):		Time:		0	_(taken prior to purging	·		
	al D.T.W. (ft):		_ Time:			_(taken after sample co	· .		
If N	NAPL Present:	D.T.P.:	D.T.W	·:	Thic	ckness: Tim	e:		
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рH	(mV)	(see reverse for calc.)	Notes/Observations		
1354	1614	1.692	1.85	7.00	-114.0	0,25	Clear organic		
1359	15,53	1.693	0.82	6.84	-96.6	/	SI. & 1/4 Brn/ oragon		
1462	15.10	1.677	1.39	6.87	-96.0	2	11		
İ405	14.87	1.673	1.01	6.82	-80.7	3	/'		
1408	15.11	1.460	0.73	6.83	-63.5	4	Sed Gray ofgange odor		
1411	15.04	1.401	0.80	6.84	-82.6.	5	Sed (SIDE Compl organiz		
1416	15,10	1. Vb1	1.03	4-86	-84.9	6	11		
1425							Samples Collected		
,									
A	Analytical Para	ameters (includ	e analysis ı	method a	nd numl	per and type of sample	containers)		
		USEPA	Method 80	021 (BTEX	() - Three	40 mL VoA			
			- Land Control		•				
	Į	Disposal of Purg	ged Water:			Waste Tank Onsite			
Col	lected Sample	es Stored on Ice	in Cooler:			Yes			
	Chain of C	ustody Record	Complete:			Yv			
		Analytical La	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM		
Equip	nent Used Du					erface Level, YSI Water			
_		•	w Disposab						
lotes/Com	ments:								
brug Book									
7									
revised: 08	/10/09								

MONITORING WELL SAMPLING RECORD						Animas Environmental Services				
Mon	itor Well No:	MW	-2		624 E. Comanche, Farmington NM 87401					
				-	Tel. (505) 564-2281 Fax (505) 324-2022					
Site:	Groundwate	r Sampling				Project No.: AES 130411				
Location:	Energen Reso	ources Corporati	ion		•	Date: 8-73				
Project:	Julander Fed	eral #1E	M.		-	Arrival Time: 09 8	70			
Samplin	g Technician:	_ Clam	eman		_	Air Temp: 75	o F			
Purg	e / No Purge:	Purge	9	_	T.C	O.C. Elev. (ft): 5441	l.51			
Well [Diameter (in):	1			Total We	ell Depth (ft):0	42.30			
	al D.T.W. (ft):		Time:			_(taken at initial gaugin				
	m D.T.W. (ft):		Time:	093	5	_(taken prior to purging				
	al D.T.W. (ft):		Time:			_(taken after sample co				
If N	IAPL Present:	D.T.P.:	_ D.T.W.	·:	Thic	ckness: Tim	e:			
		Water Qualit	ty Paramet	ers - Reco	orded Du	uring Well Purging				
	Temp	Conductivity	DO		ORP	PURGED VOLUME				
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations			
1001	18.06	1.058	2.00	7.54	4.0	416	Clear No Odor			
1008	16.12	1.109	2.95 Rois	7.39	89.3	0.25	le			
1018	ルフつ	1.114	3.68	7.22	59.4	6.5	и			
1026	W.52	1.126	4.36	7.20	72.8	0.75	1/			
1036	16.34	1.124	3,69	7.19	52,5	1	"			
1042							Samples Collected			
							-			
4										
	Inalytical Par	ameters (includ	a analysis r	method a	nd num	ber and type of sample	containers)			
	anarytical ran						containers			
		USEPA	Method 80	021 (BTEX	() - Three	e 40 mL VoA				
										
		Disposal of Purg	ed Water			Waste Tank Onsite	2			
Col		es Stored on Ice				Yes				
		Custody Record				yes				
		_		Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque, NM			
Equip	ment Used Du		-			terface Level, YSI Water				
			w Disposab							
Notes/Com	ments:									
revised: 08	3/10/09									

MON	IITORING V	NELL SAMPL	ING REC	Animas Environmental Services					
Mon	itor Well No:	MW	'-3		624 E. Comanche, Farmington NM 87401				
				_	1	Tel. (505) 564-2281 Fax (505) 324-2022			
Site:	Groundwate	r Sampling			Project No.: AES 130411				
Location:	Energen Res	ources Corporat	ion		- _	Date: 2 -2 ⁻²	3-13		
	Julander Fed				_	Arrival Time: 16)	Ζ		
		C.Lame			-	Air Temp: 90			
	Purge / No Purge: Purge					D.C. Elev. (ft): 544			
	Diameter (in):			-	Total We	ell Depth (ft): 46.			
Initia	al D.T.W. (ft):		Time:			_(taken at initial gaugin			
Contiri	າາ ປ. ເ.w. (ft): al D.T.W. (ft):	310.16	Time:		4	_(taken prior to purging			
	• •		Time:	•	Thi	_(taken after sample co			
If NAPL Present: D.T.P.: D.T.W.: Thickness: Time: Water Quality Parameters - Recorded During Well Purging									
Time	Temp (deg C)	(μS) (mS)	DO (mg/L)	pH	(mV)	(see reverse for calc.)	Notes/Observations		
1439	15.63	1.742	0.56	6.81	-89.1	0.25	, .		
1643	15.08	1.772	0.95	6.67		1	St. Gray St. odor		
1646	14,99	1.777	0.78	6.61	-62.4	2	11. Gray 51. Oax		
1651	14,49	1.787	0.71	600	-55.0	3	& Brun St. Odo		
1700	14.4-8	1.797	0.93	6.63	-50.6	4	11		
1705	14.79	1.783	1.33	4.76	-48.7	15	11		
1905	Commence of the second	The state of the s	place to the second	_{ng man kerapi sanah lidar jagah kermanan meladi dalah dal}	ya sindan 150 mm "Prikeladaa dhiladaa dhiladaa	mada 100 met Vinnforderine und Pauloselotado integrando definidado la Republica de persona paga paga la labar i vina a mined	Sample Collected		
А	nalytical Para	ameters (includ	e analysis r	nethod a	nd numl	per and type of sample	containers)		
		USEPA	Method 80	21 (BTEX	() - Three	40 mL VoA			
				· · · · · · · · · · · · · · · · · · ·					
		Disposal of Purg	•			Waste Tank Onsite)		
Coll	· ·	es Stored on Ice	•			Jes			
	Chain of C	ustody Record (yes	- 11		
			•	······································		al Analysis Laboratory,			
Equipn	ient Used Du	-			Keck Int	erface Level, YSI Water	Quality Meter		
		and Nev	w Disposab	le Baller					
lotes/Comr	nents:								
				-					
		· · · · · · · · · · · · · · · · · · ·					**************************************		
revised: 08/	10/09								

MONITORING WELL SAMPLING RECORD						Animas Environmental Services			
Monitor Well No: MW-4					6	624 E. Comanche, Farmington NM 87401			
				-	٦	ГеІ. (505) 564-2281 Fax	(505) 324-2022		
Site:	Groundwater	Sampling				Project No.: AES 1304:	11		
Location:	Energen Reso	ources Corporat	ion			Date: 8-23	-13		
Project:	Julander Fede	eral #1E				Arrival Time: 1536 Air Temp: 90	·		
Samplin	g Technician:	C. La	areman	1	•				
_	e / No Purge:		е	_		.C. Elev. (ft): 544			
	Diameter (in):			_ 7	Total We	ell Depth (ft): 47			
	al D.T.W. (ft):		Time:			(taken at initial gaugin			
		35.93		153	<u>v</u>	(taken prior to purging			
	al D.T.W. (ft):	D.T.P.:	Time:		This	taken after sample col			
11 10	APL Present:						e		
		Water Quali	ty Paramet	ers - Reco	orded Du	iring Well Purging			
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1340	110.360	1.388	1,00	7.12	-93.0	0.25	slight odor Clear		
1344	15,84	1,450	0.95	10.93	-70.0		11. brown, odor		
1348	15.48	1.442	0.67	6.85	-67.6	2	1t. brown, St. oder		
1353	15,40	1,445	1.00	6.82	-62.0	3	It brown, St. odor		
1357	15.26	1,438	0.98	6.80	- 58.B	4	11		
1601	15.51	1.460	1.57	6.80	-55.4	5	11		
1604	15.30	1.409	1.09	6.80	-63.0	6	1/		
1609			THE RESIDENCE OF THE CHARLES STREET, S	many made comments and a second state of the s	dengge (1996 dilenteral per de la general per dela general per de la general per de la general per de la general per des	The foreign of the state of the	Samples Collected		
1									
	Analytical Para	ameters (includ	e analysis r	nethod a	nd numl	per and type of sample	containers)		
		LISEDA	Method 80	121 /RTFX	\ - Three	40 mL VoA			
		OSLIA	Wicthou oc	ZI (DILA	, mee	. 40 IIIE VON			
		The state of the s							
		Disposal of Purg	ged Water:			Waste Tank Onsite	2		
Col	lected Sample	es Stored on Ice	in Cooler:	-		Yes			
	Chain of C	Custody Record	Complete:			Yes			
		Analytical L	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM		
Equipr	ment Used Du	ring Sampling:	Keck Wate	r Level or	Keck Int	erface Level, YSI Water	Quality Meter		
		and Ne	w Disposab	le Bailer					
Notes/Com	ments:								
revised: 08	3/10/09			100					

MON	IITORING V	VELL SAMPL	ING REC	Animas Environmental Services				
Mon	itor Well No:	MW	'-5		624 E. Comanche, Farmington NM 87401			
						Tel. (505) 564-2281 Fax (505) 324-2022		
Site:	Groundwate	r Sampling				Project No.: AES 130411		
Location:	Energen Reso	ources Corporat	ion		_	Date: ピーク	13-13	
Project:	Julander Fed	eral #1E			_	Arrival Time: /28	1235	
Samplin	g Technician:	C. La	meman		-	Air Temp: <i>§S</i>	P	
_	e / No Purge:		е	_		D.C. Elev. (ft):		
	Diameter (in):			_	Total We	ell Depth (ft): 40		
	al D.T.W. (ft):		Time:			_(taken at initial gaugin		
	n D.T.W. (ft):	70.0		124	-2	(taken prior to purging	•	
	al D.T.W. (ft):		. Time:			_(taken after sample co	•	
11 1	IAPL Present:	D.T.P.:	D.T.W	·\$	Thic	kness: Tim	e:	
		Water Quali	ty Paramet	ers - Rec	orded Du	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
1302	1603	1.684	2.53	4.95	109.2	0,25	Cleay No Bor	
1308	1556	1,649	4.34	6.90	108.0	1	St. H.Brn No Odr	
1311	15.14	1.650	4.80	6.92	105.9	2	~ <i>l</i> t	
1314	14.67	1.056	5.04	4,93	108.2	3	11	
1319	15.23	1.659	\$4.04	6.87	108.3	4	1.1	
1322	15.14	1.686	2.70	6.82	113.2	5	//	
1325							Samples Collected	
Α	nalytical Para	ameters (include	e analysis n	nethod a	nd numl	per and type of sample	containers)	
			-				•	
		USEPA	Method 80	ZI (BIEX	y - mree	40 mL VoA		
		Disposal of Purg	ed Water:			Waste Tank Onsite		
Col		es Stored on Ice	•			Yes		
	_	Custody Record	•			Ves		
			•	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque. NM	
Eguipn	nent Used Du		•			erface Level, YSI Water		
-4		-	w Disposab		TO COLUMN	0.1.400 2010, 70. 11410.	Quality Weter	
Notes/Comi	ments:							
-								

revised: 08	/10/09							

MON	ITORING W	/ELL SAMPLI	NG RECO	Animas Environmental Services					
Moni	itor Well No:	MW	-6		624 E. Comanche, Farmington NM 87401				
					7	Tel. (505) 564-2281 Fax	(505) 324-2022		
Site:	Groundwater	Sampling				Project No.: AES 1304			
		ources Corporati	ion		•	Date: 8-25	3-13		
Project:	Julander Fede					Arrival Time: 118	19		
-	g Technician:		memas	٨.		Air Temp: 85	ot_		
	e / No Purge:		е).C. Elev. (ft):			
	Diameter (in):			- 7	rotal We	ell Depth (ft): 57			
	al D.T.W. (ft):		Time:			(taken at initial gaugin			
Confirm	n D.T.W. (ft):	34.56		114	سل	(taken prior to purging			
	al D.T.W. (ft):	D.T.P.:	Time:	•	Thic	(taken after sample co			
11 14	APL Pleseilt.	***************************************							
	Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1201	16.03	1,682	6.31	7.26	90.2	0,25	Clear		
1204	15.17	1.697	6.49	7.13	97.5	1	Sed HBm/ No Odos		
1200	15:64	1.62	4.17	7.65	104.1	2	11		
1214	15.47	1.670	6.30	7-05	106.6	3	c i		
1218	15.72	1648	5.64	7.62	106.8	4	17		
1223	15.63	1.638	L.01	7.07	103.5	5	1 '		
1227	15.58	1.648	6.42	7.05	107.8	6	11		
1230	15.32	1.634	6.59	7.07	108,9	フ	t<		
1233	15.54	1.638	6.19	7.01	108.8	7.5	11		
1238							Samples Collected		
			<u> </u>						
,	Analytical Par	ameters (includ	le analysis ı	method a	nd num	ber and type of sample	containers)		
	•	USEPA	Method 80	021 (BTE)	() - Three	e 40 mL VoA			
		Disposal of Pur				Waste Tank Onsite	5		
Co	•	es Stored on Ice				Yes			
	Chain of	Custody Record	-		·	yes			
		•	_			tal Analysis Laboratory,			
Equip	ment Used Di				Keck In	terface Level, YSI Water	Quality Meter		
	<u></u>	and Ne	w Disposak	oie Bailer					
Notes/Com	ments:								
	0/40/00								
revised: 0	0/10/09								

MONITORING WELL SAMPLING RECORD						Animas Environmental Services			
Mon	itor Well No:	MW	-7		ϵ	524 E. Comanche, Farmi	ington NM 87401		
						Tel. (505) 564-2281 Fax			
Site:	Groundwater	r Sampling				Project No.: AES 1304			
		ources Corporat	ion			Date: 8-2	3-13		
_	Julander Fede					Arrival Time: 14-2			
	ng Technician:		a uremoi	n		•	Jost		
_	e / No Purge:					O.C. Elev. (ft):			
	Diameter (in):			_	Total We	· · · · —	3,10'		
	al D.T.W. (ft):	37.4	_ Time:	14.2	0	_(taken at initial gaugin			
	m D.T.W. (ft): al D.T.W. (ft):		_ Time: Time:	143	78	taken prior to purging_ (taken after sample co	•		
	• • •	D.T.P.:	_	/. <u>•</u>	Thi	_(taken after sample co ckness: Tim	•		
						uring Well Purging			
	Temp	Conductivity	DO		ORP	PURGED VOLUME	1		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	1	Notes/Observations		
1457	15.95	1.368	0.57	7.28	10.4	0,25	Chay/SI. can		
1500	16:77	1,381	1.09	7,04	26,7	/	L+BRN/		
1504	15.87	1,388	1.73	6-95	34.5	2	C+BRN/ SI. ODER		
1589	15.73	1.354	1.56	7.03	20.2		(1		
1513	15.37	1.37/	1.43	7.01	77.5	4	Gray (SI. Odor		
1515	15.80	1.356	1.54	7.02	11.5		4		
1518	15,64	1.337	1-00	7.06	-3.6	5.25	10		
1524	-						Samples Collected		
, p	Analytical Para	ameters (includ	e analysis r	method a	nd numi	ber and type of sample	containers)		
		USEPA	Method 80	021 (BTEX	() - Three	e 40 mL VoA			
						7			
	1	Disposal of Purg	ed Water:			Waste Tank Onsite	е		
Col		es Stored on Ice	•			Yes			
	•	Custody Record	•			Yes			
	-	-	•		ronment	tal Analysis Laboratory,	Albuaueraue, NM		
Equipr	ment Used Du	-	•			terface Level, YSI Water	· · · · · · · · · · · · · · · · · · ·		
	Home 22	-	w Disposab		Nos.	Action Later, 12	county more		
Notes/Com	ments:				· · · · · · · · · · · · · · · · · · ·				
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
revised: 08	2/10/09								

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-8				6	624 E. Comanche, Farmington NM 87401			
				l	Tel. (505) 564-2281 Fax			
Site:	Groundwater	Sampling			<u> </u>	Project No.: AES 1304		
		ources Corporat	ion		•	Date: 8-23		
	Julander Fede					Arrival Time: /64		
Samplin	g Technician:	CL	aurema	^	•	Air Temp: 80°		
Purg	e / No Purge:	Purg).C. Elev. (ft):		
Well D	Diameter (in):	2		_ 1	Γotal We	ell Depth (ft): 47	.25	
Initia	al D.T.W. (ft):		Time:			(taken at initial gaugin	g of all wells)	
	n D.T.W. (ft):		Time:	104	5	_(taken prior to purging	-	
	al D.T.W. (ft):		Time:			(taken after sample co	-	
If N	IAPL Present:	D.T.P.:	_ D.T.W.	· !	Thic	ckness: Tim	e:	
Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
1104	16.49	1.240	6.70	7.80	77.1	0.25	Chai Jab Odor	
1109	16.24	1.216	6.98	7.56	85.2	1	Li Brn/No ada	
1115	16.11	1.253	5,44	7.37	81.0	2	ų	
11/20	16,28	1.247	5.82	7.35	79.4	3	<i>''</i>	
1124	14.93	1.250	5.71	7.34	78.8	4	"1	
1130	16.07	1.262	5,09	7.28	79.7	5	"	
1134	16.13	1.261	5.18	7.29	89.4	5.75	"	
1138							Samples Collected	
		· · · · · · · · · · · · · · · · · · ·						
			14,000					
P	Analytical Para	ameters (includ	le analysis r	nethod a	nd num	ber and type of sample	containers)	
		USEPA	Method 80	021 (BTEX	() - Three	e 40 mL VoA		
		Disposal of Pur	ged Water:			Waste Tank Onsite	2	
Col	lected Sample	es Stored on Ice	in Cooler:			Yes		
	Chain of C	Custody Record	Complete:			Yes		
		Analytical L	aboratory:	Hall Envi	ronmen	tal Analysis Laboratory,	Albuquerque, NM	
Equipr	ment Used Du	ring Sampling:	Keck Wate	r Level or	Keck In	terface Le v el, YSI Water	Quality Meter	
		and Ne	w Disposab	le Bailer				
Notes/Com	ments:							
revised: 08	3/10/09							

DEPTH TO GROUNDWATER

Animas Environmental Services

	MEAS	UREMENT F	ORM	Tel. (505) 564-2281 Fax (505) 324-2022
Project:	Groundwater	Sampling		Project No.: AES 130411
Site:	· · · · · · · · · · · · · · · · · · ·	uces Corporatio	n	Date: // /////
Location:	Julander Fede			Time: 9:33
Tech:	CUD	P		Form:
Well	Depth to	Depth to	NAPL	
I.D.	NAPL	Water (ft.)	Thickness (ft.)	Notes / Observations
	(ft.)		(,	
MWI		36.97		
MW-2		33.3 5		possible root blockage possible sheen
MW-3		35.53		possible sheen
MW.4		35,20		
MW-5		35,44		
MW-6		33.84		
MW-6 MW-7 MW-8		36.42		
MW-8		34.31		
<i>-</i>				
	<u> </u>			
		, ,		

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-1			\mid	524 E. Comanche, Farmi	ngton NM 87401			
				Tel. (505) 564-2281 Fax (505) 324-2022				
Site: Groundwater Sampling						Project No.: AES 130411		
Location	Energen Reso	ources Corporat	ion		-	Date:		
_	Julander Fed				_		12:41	
	ng Technician:				_	Air Temp: S8°		
	ge / No Purge:			_		D.C. Elev. (ft): 544		
	Diameter (in):	at the same of the		_	Total We	ell Depth (ft): 50.80		
	al D.T.W. (ft):			12:43		_(taken at initial gaugin		
	m D.T.W. (ft):		Time:			_(taken prior to purging	-	
i	al D.T.W. (ft):		Time:		Th:	_(taken after sample co		
11.6	NAPL Present:	D.1.P.:	D.I.W.	• •		ckness: Tim	e:	
		Water Quali	ty Paramet	ers - Rec	orded D	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations	
12:47	13.75	-0.30	13.56	6.79	-80.9	4 991	dear, odor	
13:51	13.67	-0.31	12.17	6.76	-77.5	1 gal	milky slight ofor	
12:55	13.82	-0.31	11.96	6.72	-77.3	2 991	1 37	
13:58	14.06	-0.30	12.28	6.76	-74.4	3 991	J	
13:00	13.84	-0.30	12.16	6.74	-72.7	4 911	slight grey, cloudy, od	
13:04	13.86	-0.30	12.81	6.80	-69,6	5 991	grey, cloudy, strong o	
13:08	13.73	- 6 .30	12,30	6.84	67.8	6 991		
13:15	13.69	-0.29	16,80	6.80	-47.3	7 gal	\downarrow	
13,20							Sample	
							7.5	
	Analytical Para	ameters (includ	e analysis r	method a	nd num	ber and type of sample	containers)	
	and y thear i are							
		USEPA	Method 80)21 (BTE)	() - Three	e 40 mL VoA		
		Disposal of Purg	•			Waste Tank Onsite)	
Co	•	es Stored on Ice	•					
	Chain of C	Custody Record	Complete:					
		Analytical L	aboratory:	Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque, NM	
Equip	ment Used Du	ring Sampling:	Keck Water	r Level or	Keck Int	terface Level, YSI Water	Quality Meter	
		and Ne	w Disposab	le Bailer				
Notes/Com	ments: CD	nductivity p	robe Qr	nalfynct	ioning			
		7			<i></i>			
revised: 08	3/10/09							

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-2				6	624 E. Comanche, Farmington NM 87401			
					-	Tel. (505) 564-2281 Fax (505) 324-2022		
Site:	Groundwater	r Sampling				Project No.: AES 130411		
Location:	Energen Resc	ources Corporat	ion		•	Date: 11/11/13		
Project:	Julander Fede	eral #1E				Arrival Time: 14:157		
i -	ng Technician:				_	Air Temp: 62°		
_	ge / No Purge:			_	T.C	D.C. Elev. (ft): 5441	1.51	
	Diameter (in):					ell Depth (ft):		
Initi	al D.T.W. (ft):	33,3 5	_ Time:	14:58		_(taken at initial gaugin		
Contiri	m D.T.W. (ft):		Time:			_(taken prior to purging _(taken after sample set		
	al D.T.W. (ft):		Time:	•	Thic	_(taken after sample col ckness: Time	·	
11 1	TAPL Present.	D.1.P.i	D.1.vv.			:Kness: init	e:	
		Water Quali	ty Paramet	ers - Reco	orded Du	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
15:07	14.08	-0,19	36.29	7.40	7.1	18 991	clear, no odor	
15:10	14,02	-0.19	29,02	7.14	40.8	y gal		
15:16	14.05	-0.19	25.15	7.02	1	2 99/		
15:/9	13.46	-0.19	24.79	6.97	65.9	1/2 99/ 1/3 99/	1	
15:24						7 7	sample	
19.71							7.7	
					-			
				<u> </u>	 			
				<u> </u> '				
,	Analytical Para	ameters (includ	le analysis ı	method a	ınd num	ber and type of sample	containers)	
		USEPA	Method 80	021 (BTE)	ر) - Thre	e 40 mL VoA		
	ſ	Disposal of Purg	ged Water:		I	Waste Tank Onsite	e	
Co'		es Stored on Ice	-					
-	-	Custody Record	,				:	
	Oliulii O. S	•	-		ironmen	tal Analysis Laboratory,	Albuquerque NM	
Equip		•	- '					
Equipi	ment Oseu Du		w Disposab			terface Level, YSI Water	Quality Meter	
-1-+/Com								
Notes/Com	ments: c	conductivity p	probe maj	Itunction	<u>ing</u>			
			<u>passible</u>	1001 plo	ckage			
	· · · · · · · · · · · · · · · · · · ·							
revised: 08	9/40/00							
reviseu. ur	3/10/09						· ·	

MONITORING WELL SAMPLING RECORD						Animas Environmental Services		
Monitor Well No: MW-3					6	624 E. Comanche, Farmington NM 87401		
						Tel. (505) 564-2281 Fax (505) 324-2022		
Site: Groundwater Sampling						Project No.: AES 130411		
Location:	Energen Reso	ources Corporat	ion		-	Date: / //3		
Project:	Julander Fed	eral #1E			-	Arrival Time: 13: S	7	
Samplin	ng Technician:	c L/OR			- -	Air Temp: 62		
Purg	e / No Purge:	Purg	je	_	T.C	O.C. Elev. (ft): 544	3.47	
Well Diameter (in): 2 To						ell Depth (ft): <u>46.</u>		
						_(taken at initial gaugin		
	m D.T.W. (ft):		Time:		· · · · · · · · · · · · · · · · · · ·	(taken prior to purging		
	al D.T.W. (ft):		Time:			_(taken after sample co	· .	
If N	NAPL Present:						e:	
		Water Quali	ty Paramet	ers - Rec	orded Du	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations	
14:04	14.16	-0.44	15,06	6.48	17.0	4 991	clear, with odor	
14:06	13.94	-0.44	14.17	6.52	4.4	1 901	light tan, slight od	
14:10	13.78	-0.44	11.87	6,52	2.7	1 gg/ 2 gg/	1911 144, 11910 00	
14:13	13.69	-0,44	10.91	6.51	3,4	3 99/		
14:16	13.74	-0.44	11.01	6,53	0.1	4 991		
14:20	13.73	-0.44	10,86	6,52	2.1	5 001		
7:	10.75	0.77	10,00		-	S 991	50 1	
(14:25)							59mple	
				ļ				
	Analytical Para	ameters (includ	e analysis r	nethod a	nd numi	per and type of sample	containers)	
		USEPA	Method 80)21 (BTEX	() - Three	e 40 mL VoA		
	[Disposal of Pure	ged Water:			Waste Tank Onsite)	
Col	lected Sample	es Stored on Ice	in Cooler:					
	Chain of C	Custody Record	Complete:					
		Analytical L	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM	
Equipr	ment Used Du	ring Sampling:	Keck Water	r Level or	Keck Int	erface Level, YSI Water	Quality Meter	
			w Disposab			4		
Notes/Com	ments: (6	nductivity pr	obe mala	unctionin	ò			
	PC	nductivity pr assible sheen		/	/			
	V							
revised: 08	/10/09		, , , , , , , , , , , , , , , , , , , ,					

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-4					6	624 E. Comanche, Farmington NM 87401		
				-	Tel. (505) 564-2281 Fax (505) 324-2022			
Site: Groundwater Sampling						Project No.: AES 130411		
Location:	Energen Reso	ources Corporat	ion		-	Date: (3		
Project:	Julander Fed	eral #1E			-	Arrival Time: 13:23		
Samplin	g Technician:	CLIDR			_	Air Temp: 6/°		
Purg	e / No Purge:	, Purg	e	•		O.C. Elev. (ft):544		
	Diameter (in):			_	Total We	ell Depth (ft): <u>47,8</u> 8		
	al D.T.W. (ft):			13:25		_(taken at initial gaugin	· · · · ·	
	m D.T.W. (ft):		Time:			(taken prior to purging		
	al D.T.W. (ft):	N-M-M-MARKET	Time:			_(taken after sample co		
If N	IAPL Present:	D.T.P.:	D.T.W.	·:	Thic	ckness: Tim	e:	
		Water Quali	ty Paramet	ers - Rec	orded Dı	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
13:29	14.58	-0.30	18.62	7.03	-10,2	4 991	Clear, Slight odor	
13:33	14.65	-0.3/	13.08	6.91	-0.4	1 991	Clear, Slight odor slightly murky, Slight	
13:36	14.77	-0.31	11.82	6,92	6.9	2 991		
13: 39	14.62	-0.3/	10.17	6.84	12.5	3 991		
13:42	14.58	-0.31	10.43	6.79	16.6	9 991	T	
13:45	14.89	70.31	10,88	6.84	14.8	5 99/	cloudy, slight offer	
13:50	14.52	-0:31	10.67	6.74	21,0	6 99	Cloudy, slight odor	
(13:54)							Sample	
' /							7	
				 				
	Analytical Day	amatara (inglud	l	mothod s	nd num	har and tune of cample	containers	
	Analytical Par					ber and type of sample	containers	
	***************************************	USEPA	Method 80	021 (BTE)	K) - Three	e 40 mL VoA		
					· · · · · · · · · · · · · · · · · · ·			
		Diamage I - CD				Masta Tank O!t	_	
		Disposal of Pur						
Co		es Stored on Ice						
	Chain of C	Custody Record	-		· /w///			
					· · · · · · · · · · · · · · · · · · ·	tal Analysis Laboratory,		
Equip	ment Used Du				···	terface Level, YSI Water	Quality Meter	
			w Disposal	****				
Notes/Com	ments: (oriductivity p	nobe malt	unction	ing			
		<i>y</i> ,						
rovine de O	P/4.0/00							
revised: 08	0/10/09							

MONITORING WELL SAMPLING RECORD					Animas Environmental Services					
Monitor Well No: MW-5					624 E. Comanche, Farmington NM 87401					
			-	Tel. (505) 564-2281 Fax (505) 324-2022						
Site: Groundwater Sampling					<u> </u>	Project No.: AES 130411				
Location: Energen Resources Corporation					Date:					
1	Project: Julander Federal #1E					Arrival Time: 10:29				
	CLIDR		Air Temp: 44°							
Purg	e / No Purge:	Purg	e		Т.О	o.C. Elev. (ft):				
	Diameter (in):					ell Depth (ft): 45.96				
		35.44	Time:	10:37		(taken at initial gaugin				
Confir	m D.T.W. (ft):		Time:			taken prior to purging	• •			
	al D.T.W. (ft):		Time:			taken after sample co	llection)			
If N	IAPL Present:	D.T.P.:	D.T.W.	:	Thic	kness: Tim	e:			
		Water Quali	ty Paramet	ers - Rec	orded Du	iring Well Purging				
	Temp	Conductivity	DO		ORP	PURGED VOLUME				
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations			
10:38	13.41	-0.31	18.01	6,88	228.9	4 991	Milky, No odor			
10:43	13.25	-0.31	14.52		236.0	1 991	milky no odor			
10:46	13.24	-0.31	14.88	6.67	232.4	2	mity, no olor, tan			
10:49	13,56	-0.31	14.98	6.72	\$30.1	3	milky, no ador milky, no odor, tan milky, no odor, kin			
10:53	13,52	-0.31	17.72	6.72	229.9	У	+ '			
10:56	13,71	-0.31	17.79	6.75	729, 5	S	<u> </u>			
11:01	13.18	-0.31	20.21	6,68	234.3	5.75	milky, no odor			
11:06							milky, no odor sample			
							, .			
ļ	Analytical Para	ameters (includ	e analysis r	nethod a	nd numb	per and type of sample	containers)			
		USEPA	Method 80)21 (BTEX) - Three	40 mL VoA				
	I	Disposal of Purg	ed Water:			Waste Tank Onsite)			
Coi	lected Sample	es Stored on Ice	in Cooler:	M						
	Chain of C	Custody Record	Complete:							
		Analytical L	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM			
Equipa	ment Used Du	ring Sampling:	Keck Wate	r Level or	Keck Int	erface Level, YSI Water	Quality Meter			
		and Ne	w Disposab	le Bailer						
Notes/Com	ments:	conductivity	probe 1	nalfuna	tionina					
			V		ノ					
revised: 08	/10/09									

MONITORING WELL SAMPLING RECORD					4	Animas Environmental Services		
Monitor Well No: MW-6			6	24 E. Comanche, Farmi	ngton NM 87401			
				1				
Site:	Groundwate	r Sampling			<u>.i</u>	Tel. (505) 564-2281 Fax (505) 324-2022 Project No.: AES 130411		
		ources Corporat	ion		-	Date: 11/11/13		
i	Julander Fed					Arrival Time: 9:42		
Samplin	ng Technician:	CU/ DR			-	Air Temp: 42		
Purg	e / No Purge:		e		т.с).C. Elev. (ft):		
Well I	Diameter (in):	2		-	Total We	ell Depth (ft):	49.50	
Initi	al D.T.W. (ft):	33.84	Time:	9:44		(taken at initial gaugin		
	m D.T.W. (ft):		Time:			(taken prior to purging	well)	
	al D.T.W. (ft):		Time:			(taken after sample co	llection)	
If N	IAPL Present:	D.T.P.:	_ D.T.W.	:	Thic	ckness: Tim	e:	
		Water Quali	ty Paramet	ers - Rec	orded Du	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mṢ)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
A;53	13.45	-0.37 (38.26	3220A	6.65	245.6	1/4 99/	milky, no odor	
9.56	13, 91	- 0.39	37.33	6,79	237.1	1 971	1	
9:59	13.70	-0,39	41.53	6.84	235.2			
10:03	13.48	- 0.39	37.91	6.81	235.4	3 99/		
10:06	13.72	-6.39	36.36	6.83	233.6	4 31		
10:09	13.76	- 0.38	36,06	6.87	233.8	5991		
10:12	13.78	-0.38	35,99	6,85	232.4	6 91		
10:15	13.39	-0.39	37.77	6.81	234,5	7 991		
10:22	13.16	-0.38	36,24	6,79	236,4	590pt 7.75 gal	Signate	
10:27							samples collected	
F	Analytical Para	ameters (includ	e analysis n	nethod a	nd numl	per and type of sample	containers)	
		USEPA	Method 80	21 (BTEX	() - Three	40 mL VoA		
		Disposal of Purg	ed Water:			Waste Tank Onsite)	
Col	lected Sample	es Stored on Ice	in Cooler:					
	Chain of C	Custody Record	Complete:					
		Analytical La	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM	
Equipr	nent Used Du	ring Sampling:	Keck Water	Level or	Keck Int	erface Level, YSI Water	Quality Meter	
		and Nev	w Disposab	le Bailer				
Notes/Com	ments: Co	aductivity prob	e malfy	nctioning				
		/ '		<u> </u>				
rovicod: 08	// 0/00							

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-7					6	624 E. Comanche, Farmington NM 87401		
						Tel. (505) 564-2281 Fax (505) 324-2022		
Site: Groundwater Sampling						Project No.: AES 130411		
Location:	Energen Res	ources Corporat	ion		_	Date: 11/11/13		
Project:	Julander Fed	eral #1E			_	Arrival Time: 12:03		
Samplin	ng Technician:	CLIPR			_	Air Temp:		
Purg	ge / No Purge:	Purg	е	_		D.C. Elev. (ft):		
	Diameter (in):			-		ell Depth (ft): <u>48,5</u> 5		
	al D.T.W. (ft):		Time:	12:06		(taken at initial gaugin		
	m D.T.W. (ft):		Time:			(taken prior to purging		
	al D.T.W. (ft): VAPI Present:		_ Time: D.T.W.	•	Thic	_(taken after sample co ckness: Tim	·	
	VAI ET TOSCITO					uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	1	'	i	ημ	(mV)	(see reverse for calc.)	Notes/Observations	
	(deg C)	(μS) (mS)	(mg/L)	pH		· · · · · · · · · · · · · · · · · · ·	,	
12:11	14.58	-0.26	(2.01	6.77	20.1	4 99/	< kar, slight briganic z	
13:15	14.56	-0.26	11,13	6.86	-16.2	1991	gray, slight ofor	
13:18	14,43	-0.26	9.19	6.84	-36.8	2 99/		
12:21	14,79	-0,26	8.63	6.84	-45.5	3 94		
13:24	14.39	-0.26	10.81	6.82	-50.6	4 gal		
12:26	14. 39	-0.26	12.21	6.87	-51.4	5 gal		
13:29	14.40	-0.26	10.53	6,89	-48.9	6 991	1 samples	
12:34						J	Sample	
					<u> </u>			
<i></i>	Analytical Para	ameters (includ	e analysis r	method a	ind numi	ber and type of sample	containers)	
		USEPA	Method 80	21 (BTEX	() - Three	e 40 mL VoA		
		Disposal of Purg	ed Water:			Waste Tank Onsite		
Col	lected Sample	es Stored on Ice	in Cooler:					
	•	Custody Record						
		•	•	Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque NM	
Earline	ment Head De	•						
Equipr	nent Osea Du		··		VECK IUI	erface Level, YSI Water	Quality Weter	
			w Disposab					
Notes/Com	ments: Co	inductivity p	nobe malfi	unctionin	9			
	The second secon							
roulead: 00	2/4.0/00							
revised: 08	/ I U/U S							

MONITORING WELL SAMPLING RECORD						Animas Environmental Services		
Monitor Well No: MW-8						24 E. Comanche, Farmi	ngton NM 87401	
						Tel. (505) 564-2281 Fax (505) 324-2022		
Site: Groundwater Sampling						Project No.: AES 1304		
Location:	Energen Reso	ources Corporat	ion		-	Date: 11/11/13		
	Julander Fed				_	Arrival Time: 11://		
Samplin	g Technician:	-L/DR		4.5000	- -	Air Temp: 50°		
	e / No Purge:			_	T.C	D.C. Elev. (ft):		
	Diameter (in):			_	Total We	ell Depth (ft): <u>47.16</u>		
Initia	al D.T.W. (ft):	34.31	Time:	11:13		_(taken at initial gaugin		
Confiri	m D.T.W. (ft):					_(taken prior to purging		
	al D.T.W. (ft):		Time:		Thi	(taken after sample co		
11 1	APL Present:					ckness: Tim	e:	
		·	,	ters - Rec		uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations	
11:18	14.15	-0.21	41.68	7.27	222.9	4 99	clear, no odor	
11:22	14.98	-0.4	42.16	7.30	220.5	1 991	clear, no odor tan, sediments, no o	
11:25	14.88	-0.21	42,37	7.26	222.8	2 99		
11:28	14.87	-0.21	41.80	7.20	276.5	3 gal	. 4	
11:31	14.89	-0.21	42.48	7.17	226.9	9 91		
11:35	14.97	-0.21	40. SZ	7.22	725.3	5 gal	Milky nowlor	
(1:39	14.83	-0.21	41.05	7.20	226.4	6 91		
11:42	14.73	-0,21	41.62	7.22	226,1	7 gal		
11:44	14.94	-0.21	41.47	7.28	724	8 991		
11:49						8.25 gal	sample sample	
							Sample	
A	Analytical Para	ameters (includ	e analysis ı	method a	nd numl	ber and type of sample	containers)	
		USEPA	Method 80)21 (BTE)	() - Three	e 40 mL VoA		
		Disposal of Pure				Waste Tank Onsite)	
Col		es Stored on Ice						
	Chain of C	Custody Record	Complete:					
		Analytical L	aboratory:	Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque, NM	
Equipr	ment Used Du				Keck Int	erface Level, YSI Water	Quality Meter	
		and Ne	w Disposab	le Bailer				
Notes/Com	ments: 🦽	nductivity prol	e malfyn	ctioning				
					4			
	W	ell cap brok	ien and	not polt	red			
revised: 08	2/10/00							
revised: 08	s/1 <i>0/0</i> 9							

Animas Environmental Services DEPTH TO GROUNDWATER 624 E. Comanche, Farmington NM 87401 **MEASUREMENT FORM** Tel. (505) 564-2281 Fax (505) 324-2022 Project No.: AES 130411 Project: **Groundwater Sampling** Site: **Energen Resouces Corporation** Date: 11-14-13 Julander Federal #1E Location: Time: Clameman Tech: Form: Depth to NAPL Well Depth to NAPL **Notes / Observations** I.D. Water (ft.) Thickness (ft.) (ft.) 34.63 MW-1 Possille sheen 35.61 35.62 Mw-3 0,01 35.07 MW-4

MON	IITORING V	VELL SAMPL	ING RECO	ORD	Animas Environmental Services			
Mon	itor Well No:	MW	-1		6	24 E. Comanche, Farmi	ngton NM 87401	
				-	Tel. (505) 564-2281 Fax (505) 324-2022			
Site: Groundwater Sampling						Project No.: AES 130411		
Location:	Energen Reso	ources Corporat	ion		-	Date: //~/9	4-13	
Project:	Julander Fede	eral #1E			Arrival Time: /0//			
Sampling Technician: C. Lameman						Air Temp:		
Purg	e / No Purge:	Purg	е	_	T.C	O.C. Elev. (ft): 544	4.89	
Well [Diameter (in):	2			Total We	ell Depth (ft): 50.	80	
	al D.T.W. (ft):		Time:			_(taken at initial gaugin	g of all wells)	
Confir	m D.T.W. (ft):	36.63	Time:	10:14		_(taken prior to purging	•	
	al D.T.W. (ft):		Time:			(taken after sample co		
If N	IAPL Present:	D.T.P.:	_ D.T.W.	•	Thic	kness: Tim	e:	
₩S ₩2 Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
1000 1032	13.95	0.935	2.75	6.87	28.4	0.25	Clear	
1047	/3,81	0.937	2.59	6.96	-3.9		SI grayfeed SI oddr	
1050	13.79	0.935	1.93	6.96	-19.8	2	J 11'11	
1055	13.45	0.927	1.42	7.07	-29.1	3	įt.	
1101	/3.58	0.926	1.62	7.04	-39.7	4	ч	
1107	13.57	0,9/9	1.78	7.09	-42.0	5	11.	
1110	13.64	0,917	2.21	7.14	-40.9	Ų	u ·	
1114	13 85	0.916	1.34	7.12	-50.6	7		
1119							Samples Collected	
ļ	Analytical Para	ameters (includ	e analysis r	nethod a	nd numl	ber and type of sample	containers)	
		USEPA	Method 80	21 (BTEX	() - Three	40 mL VoA		
	ı	Disposal of Purg	ged Water:			Waste Tank Onsite	2	
Col	lected Sample	es Stored on Ice	in Cooler:			Yes	***************************************	
	Chain of C	Custody Record	Complete:			Yes		
		Analytical L	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM	
Equipr	ment Used Du	ring Sampling:	Keck Water	Level or	Keck Int	erface Level, YSI Water	Quality Meter	
		and Ne	w Disposab	le Bailer				
Notes/Com	ments:							
revised: 08	140/00							

MON	ITORING V	ELL SAMPLI	NG RECO	Animas Environmental Services			
Mon	itor Well No:	MW	-3		624 E. Comanche, Farmington NM 87401		
				•	Tel. (505) 564-2281 Fax (505) 324-2022		
Site:	Groundwater	Sampling			Project No.: AES 130411		
Location:	Energen Reso	ources Corporati	ion		Date: <u>11-14~/</u> 3		
	Julander Fede				_	Arrival Time: 1106	
	g Technician:				•	Air Temp:	
_	e / No Purge:		е			O.C. Elev. (ft): 5443	
	Diameter (in):		~	•	Total We		.53
	al D.T.W. (ft): m D.T.W. (ft):		Time:			(taken at initial gaugin (taken prior to purging	• •
	al D.T.W. (ft):		Time:	3011.	<u> </u>	taken prior to parying (taken after sample co	·
		D.T.P.: 35.64		: 35.63	Thic	ckness: bot Tim	·
	,						
YSI	#2	Water Qualit	ty Paramet	ers - Rec	orded Du	ring Well Purging	
	Temp	Conductivity	DO		ORP	PURGED VOLUME	
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations
1125	13.16	1.347	247	7.07	11.0	0.25	Charlstonpda
1128	13.40	1.318	1.09	6.90	1.2	1	Charlstonpdar 51. Gray Stroda.
1131	13.73	1,385	1.36	6.90	3.6	2	()1
1134	13.72	1,370	1.41	6.94	0.9	3	31
1137	13.72	1.376	1.32	6.91	1.0	4	
1140	13.61	1.393	1.06	6.59	1.2	5	4
1143							Samples Collected

	A I Day					h	acatainara\
	Analytical Par	ameters (includ	e analysis i	metnod a	ina num	ber and type of sample	containers)
		USEPA	Method 80	021 (BTE)	() - Three	e 40 mL VoA	
							All the second s
		Disposal of Purg	ged Water:			Waste Tank Onsite	e
Co	llected Sampl	es Stored on Ice	in Cooler:			Yus	
	Chain of (Custody Record	Complete:			Yes	
		Analytical L	aboratory:	Hall Env	ironmen	tal Analysis Laboratory,	Albuquerque, NM
Equip	ment Used Du	uring Sampling:	Keck Wate	r Level o	r Keck In	terface Level, YSI Water	Quality Meter
•			w Disposal				
Notes/Com	ments: Prss	ible Sheen					
		in oracle					
revised: 0	8/10/00						

MON	ITORING V	WELL SAMPLI	ING RECU	JKD	Animas Environmental Services			
Mon	itor Well No:	MW	-4		6	624 E. Comanche, Farmi	ngton NM 87401	
						Tel. (505) 564-2281 Fax	(505) 324-2022	
	Groundwater					Project No.: AES 1304		
		ources Corporati	ion		_	Date: //-/4		
	Julander Fede				_	Arrival Time: // 33	}	
_	g Technician:				_	Air Temp:		
_	e / No Purge:		е	_		D.C. Elev. (ft): 544		
	Diameter (in):			_	Total We	ell Depth (ft): 47.		
	al D.T.W. (ft):		_ Time:	4.26	<i>j</i> —	_(taken at initial gaugin		
	m D.T.W. (ft):		Time: Time:	1138		_(taken prior to purging _(taken after sample co		
	al D.T.W. (ft):	D.T.P.:	_		Thi	_(taken after sample co ckness: Tim	•	
							С	
Y51		7	T	ers - Keco	T	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рH	(mV)	(see reverse for calc.)		
1151	14,42	0.906	2.86	7.36	35.4	0.25	Clear / S1.020	
1154	14.66	0.934	1.68	7.19	17.9	(St. Gray/ St. ados	
1/57	14.53	0.933	1.34	7.17	13.0	2	/1	
1200	14.63	0.934	1.21	7.15	9.8	3	11	
1203	14.51	0.930	1.26	7.20	10.9	4	11	
1206	14.48	0.932	1.03	7.15	8.9	5	Clear 1St. Odor	
1209	14,36	0.936	1,08	7,14	7.9	6		
12.14							Samples Collected	
A	nalytical Para	ameters (includ	e analysis r	method a	nd num	ber and type of sample	containers)	
		USEPA	Method 80)21 (BTE)	۲) - Thre	e 40 mL VoA		
	1	Disposal of Purg	ged Water:			Waste Tank Onsite	3	
Col	lected Sample	es Stored on Ice	in Cooler:			Yen		
	-	Custody Record	•			Vec		
			•		ronmen	tal Analysis Laboratory,	Albuquerque, NM	
Equipr	nent Used Du	•				terface Level, YSI Water		
		-	w Disposab		1100			
Notes/Com	ments:							
10100/ 001111	Tions.							
dr. A	NOW HA	1/						
revised: 08	110/09	<u>, </u>						

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

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

Project:	Groundwater Sampling	Project No.: AES 130411
Site:	Energen Resouces Corporation	Date: 02/10/14
Location:	Julander Federal #1E	Time: 0805
Tech:	C. Lameman/ S. Glasses	Form: GW SAMPLING

Well I.D.	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	-	40.10		
MW-2	~	36.71	_	
MW-3		38.70		
MW-4		38.41		
MW-5		38,45		
MW-6	-	37.06	-	
MW-7	_	39.66		
MW-8		37.86	-	Well Cap Broken
			\$ 	
·			:	
· · · · · · · · · · · · · · · · · · ·				
				
	<u> </u>	1	1	

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

MON	IITORING V	VELL SAMPL	ING RECO	Animas Environmental Services					
l Mon	itor Well No:	MW	-1		624 E. Comanche, Farmington NM 87401				
					1	Tel. (505) 564-2281 Fax (505) 324-2022			
Site:	Groundwate	r Sampling			<u> </u>	Project No.: AES 1304			
Location:	Energen Rese	ources Corporat	ion		_	Date:			
Project:	Julander Fed	eral #1E			_	Arrival Time: 1258			
		CL/S			_	Air Temp:			
_	e / No Purge:		e	-		O.C. Elev. (ft): 5444			
	Diameter (in):			.	Total We	ell Depth (ft): 49.			
	al D.T.W. (ft):		Time:			(taken at initial gaugin			
	m D.T.W. (ft):		Time:	1300) 	_(taken prior to purging	•		
	al D.T.W. (ft):		Time:		Thi	_(taken after sample co ckness: Tim			
11 11	APL Present:						e:		
		T	,	ers - Reco	·	uring Well Purging			
	Temp	Conductivity	DO *		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)			
1307	14.45	0.803	2.15	7.69	-168.0	8,25	Clen/odor		
1311	13.95	0,810	1.51	7.55	-163.2	/	It Gray Strong. Odor		
1318	14.16	0,807	1.41	7,50	-1623	2	Gray Strong Ofor		
1323	14.16	0.810	2.26	7.49	-159.3	3	u '		
1328	14.13	6.811	3.94	7.51	-/57. 3	4	11		
1337	14.10	0,813	4.22	7.54	-145.0	5	t i		
1337							Samples Collected		
				-					
							. /		
	nalytical Par	ameters (includ	e analysis r	nethod a	nd num	ber and type of sample	containers)		
	analytical ran	-	-				containers		
		USEPA	Method 80	21 (BTEX	() - Three	e 40 mL VoA			
		Disposal of Purg	od Water			Waste Tank Onsite			
Col		es Stored on Ice	•			\			
Coi			•			J.			
	chain of C	Custody Record	-	Hall For !	***	Analysis Laboratory	Albuqueggue		
.		-	•			al Analysis Laboratory,			
Equipr	nent Used Du			······································	Keck Int	erface Level, YSI Water	Quality Meter		
N-4- 10		and Nev	w Disposab	ie pailer					
Notes/Comi که ک		so malfunc	h n						
7). 1 0 3 /	· (m majure	71.64						
revised: 08	/10/09								

MON	IITORING V	VELL SAMPLI	NG RECO	ORD	Animas Environmental Services				
Mon	itor Well No:	MW-	-2		6	24 E. Comanche, Farmi	ngton NM 87401		
				-	Tel. (505) 564-2281 Fax (505) 324-2022				
Site:	Groundwate	r Sampling		Project No.: AES 130411					
		ources Corporati	on	* - - - - - - - - -	•	Date: 210			
	Julander Fed				Arrival Time: 810				
Samplin	g Technician:	CLI	SHG		•	Air Temp:			
		Purge			т.с	O.C. Elev. (ft): 544:	1.51		
		1		•		ell Depth (ft): 42			
	al D.T.W. (ft):		Time:			(taken at initial gaugin	g of all wells)		
		36.71	Time:	817	>	(taken prior to purging	well)		
	al D.T.W. (ft):		Time:			_(taken after sample co	·		
if N	IAPL Present:	D.T.P.:	_ D.T.W.	:	Thic	ckness: Tim	e:		
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	DO ∜		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1454	14.26	0.552	6.35	7.76	-30,8	1/16	acay/No Odor.		
1500	14:27	0.536	4.62		-19,3		SI. Sed Tan No Odor		
1516	14,85	0.537	4,95	7.62	-16.6	۸	tt '		
1521					74.0		Samples Collected		
7,50-1	Colucta								
	-								
			:						
	The same and								
	:								
	habitical Dar	amotors (includ	a analysis r	nothod a	nd numl	har and tune of cample	containers		
	Midiyucai Para	ameters (include	e analysis r	nethod a	na numi	ber and type of sample	containers		
		USEPA	Method 80	21 (BTEX	() - Three	e 40 mL VoA			
		Disposal of Purg	ed Water:			Waste Tank Onsite	9		
Col	lected Sample	es Stored on Ice	in Cooler:			Yes	:		
		Custody Record	•			Yes			
		•		Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque NM		
Earlinn	nant Haad Du		•						
Equipr	ווכווג טגפט טע				NECK IIII	terface Level, YSI Water	Quality Weter		
NI-4- /C		and ive	w Disposab	ie Baller					
Notes/Com	(. (1							
* 1000	nble Do se	noor malfu	netion						
revised: 08	710/09								

MON	NITORING V	NELL SAMPL	ING REC	ORD	Animas Environmental Services			
Mor	nitor Well No:	MW	'-3		624 E. Comanche, Farmington NM 87401			
				⊶	1	Tel. (505) 564-2281 Fax (505) 324-2022		
Site	Groundwate	r Sampling			. L 	Project No.: AES 1304		
Location	Energen Res	ources Corporat	ion		_	Date: 2/10	114	
Project	Julander Fed	eral #1E			Arrival Time: 1410			
Samplir	ng Technician:	CLIS	HG		_	Air Temp:		
Purg	ge / No Purge:	Purg	e	_	Т.С	D.C. Elev. (ft): 544	3.47	
	Diameter (in):			Total W	ell Depth (ft): 46			
Initi	al D.T.W. (ft):	05:15	Time:		_(taken at initial gaugin			
		38,70		141	<u> </u>	_(taken prior to purging	•	
		D.T.D.			- 1.1	(taken after sample co		
\$T 1	NAPL Present:	D.1.P.:	D.I.W	•	I NI	ckness: Tim	e:	
		Water Qualit	ty Pararnet	ers - Rec	orded D	uring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/l.)	рH	(mV)	(see reverse for calc.)	Notes/Observations	
1418	14.43	0.977	1.72	7.5%	148,1	0.25	Clear Strong odor	
1422	14.26	0.992	1.02	7.32	-130.0	1	S1. Sed It tan/St. Odor	
1428	14.25	0.995	1.44	7.23	-117.5	2	Sellt tantogray Strodor	
1433	14.21	0.991	1.12	7.22	-115.2	3	11	
1442	14.19	6,993	1.11	7.17	111,5	4	ч	
1447							Samples Collected	
		-						
P	Analytical Para	meters (include	e analysis r	nethod a	nd numl	per and type of sample	containers)	
		USEPA	ivietiiou 80	721 (DIE/	() - Tifree	40 mL VoA		
	· · · · · · · · · · · · · · · · · · ·							
		Disposal of Purg	ed Water			Waste Tank Onsite		
Col		es Stored on Ice				Yes		
CO		ustody Record (•			Yes		
	Chain of C	-	•	Uall Envi	ronmont		Albuquerque AIA	
Equipp	nont Head Du		•			al Analysis Laboratory, a erface Level, YSI Water		
Equipi	Henr Osea Du	_	v Disposabl		Neck IIIt	eriace Level, 151 water	Quality Meter	
Notes/Com	ments	and ivev	· Dispusabl	Dailei				
10103/ 001111								

roviced: 00	/4.0/00		·					

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MON	IITORING W	VELL SAMPLI	NG RECO	ORD	Animas Environmental Services				
Mon	itor Well No:	MW	-4		6	24 E. Comanche, Farmii	ngton NM 87401		
			· · · · · · · · · · · · · · · · · · ·	-	-	Tel. (505) 564-2281 Fax	(505) 324-2022		
Site:	Groundwater	Sampling			Project No.: AES 130411				
		ources Corporati	ion		- -	Date: 2(10)	14		
_	Julander Fede				. '	Arrival Time: 1340)		
_	g Technician:				•	Air Temp:			
Purge / No Purge: Purge						O.C. Elev. (ft): 544			
•	Diameter (in):			•	Fotal We	ell Depth (ft): 4			
	al D.T.W. (ft):		Time: Time:	17 /	(taken at initial gauging of all wells) 134((taken prior to purging well)				
Fin:	al D.T.W. (ft):	38.41	Time:		<u> </u>	taken after sample col. (taken	· ·		
	· ·		•	:	Thic	• '	· · · · · · · · · · · · · · · · · · ·		
If NAPL Present: D.T.P.: D.T.W.: Thickness: Time: Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	, DO ∜		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1348	14.67	6.913	1.85	7.45	-176.1	0.15	Clear Strong Odor		
1352	14.77	0.906	1.00	7.47		1	Cloudy St. Wor.		
1356	14.62	0.908	1,25		-149.6	2	11		
1401	14.47	0.907	1.19	7.36	-135,5	3	И		
1406	14,32	0.920	1.5%	7.32	-1/2.5	4	(1		
1409							Samples Collected		
,									
				,					
	1 1 .			-1 1					
<i>-</i>	Analytical Para	ameters (includ	e analysis r	nethod a	nd num	ber and type of sample	containers)		
		USEPA	Method 80	21 (BTEX	() - Three	e 40 mL VoA			
	<u> </u>	Disposal of Purg	ed Water:	<u> </u>	<u></u>	Waste Tank Onsite	<u> </u>		
Coi		es Stored on Ice	•	***		Yes			
	-	Custody Record	•			Yes			
		•	•	Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque, NM		
Equipa	ment Used Du		•			terface Level, YSI Water			
-41			w Disposab						
Notes/Com	ments:		•						
* Possib	······································	isor malfin	utim						
1,000,1	1.0 10 00V	voor proving							
revised: 08	3/10/09						<u></u>		

MON	IITORING V	VELL SAMPL	ING RECO	ORD	Animas Environmental Services				
Mon	itor Well No:	MW	-5		624 E. Comanche, Farmington NM 87401				
				-	1	Tel. (505) 564-2281 Fax	_		
Site:	Groundwate	r Sampling			Project No.: AES 130411				
		ources Corporat	ion		-	Date: 2/10/			
	Julander Fed				Arrival Time: 1150				
-	g Technician:		1546		-	Air Temp:			
Purg	e / No Purge:	Purg			т.с	D.C. Elev. (ft):			
	Diameter (in):			- -		ell Depth (ft): 4	6		
	al D.T.W. (ft):		Time:			_(taken at initial gaugin	g of all wells)		
Confir	m D.T.W. (ft):	38 /45	Time:	110) 2	_{taken prior to purging	·		
	al D.T.W. (ft):	**************************************	Time:			_(taken after sample co	· ·		
If N	IAPL Present:	D.T.P.:	D.T.W.	·:	Thic	ckness: Tim	e:		
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	DO∜		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1111	13.74	0.858	4.59	7.89	131.5	6.25	Clear/No odon		
1116	13.82	0.866	3,29	קהד	112.4	1	Clear No Coor		
1121	13.86	0.884	3.24	7,64	93.7	7	SI Sed 11 fam lodar		
1132	14.06	6.901	2.70	7.53	69.0	3	11		
1138	13.37	0.968	2.67	7.46	46.5	4	ŭ		
1143							Samplesoflected		
11. ()									
		····							
<u></u>	nalytical Pars	maters (includ	e analysis r	nethod a	nd numl	ber and type of sample	containers)		
F	Malytical Fala	•	-				Containers		
		USEPA	Method 80	21 (BTEX	() - Three	e 40 mL VoA			
		Disposal of Purg	ed Water:			Waste Tank Onsite	2		
Col		es Stored on Ice	•		, , , , , , , , , , , , , , , , , , , 	Yes			
	•	ustody Record	•			Yes			
		•	•	Hall Envi	ronment	tal Analysis Laboratory,	Albuquerque. NM		
Equipn	nent Used Du	-	•			terface Level, YSI Water			
			w Disposab						
Notes/Com	ments:								
æ Do	Malfuncti	on?							
					····				
revised: 08/	/10/09								

MON	IITORING V	VELL SAMPLI	NG RECO	ORD	Animas Environmental Services				
Mon	itor Well No:	MW	-6		624 E. Comanche, Farmington NM 87401				
				-	Tel. (505) 564-2281 Fax (505) 324-2022				
Site:	Groundwate	r Sampling			Project No.: AES 130411				
		ources Corporat	ion		Date: 2/10/14				
-	Julander Fed				Arrival Time: S44				
· ·	ng Technician:					Air Temp:			
Purge / No Purge: Purge Well Diameter (in): 2						D.C. Elev. (ft):5			
1	al D.T.W. (ft):	·	Time:	-	iotai we	ell Depth (ft): 50 (taken at initial gaugin			
		37,06		848		taken prior to purging (taken prior to			
	al D.T.W. (ft):		Time:		<u>, </u>	(taken after sample co			
				.:	Thic	ckness: Tim			
Water Quality Parameters - Recorded During Well Purging									
	Temp	Conductivity	DOX		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations		
854	13.83	0.932	11.41	8.55	121.2	0.25	Clean No. Sed.		
0902	13.78	0,929	8,89	7,38	142.1	1	SI. Sed. No Odor		
8908	13.96	0.927	6,90	7.23	134.5	2	Lt. Brn Sl. Sect. No Olar		
0911	13.86	0,931	7.92	7.55	126.7	4	11		
0916	13,67	0,927	7.97	7.56	114.1	4	{ {		
6926	(3, 78	6,919	7.22		106.6	5	1 f		
0943	13.24	0.922	7.21	7.38	798.7	6.25	ţ(
0948							Samples Collected		
			-trained and training and training						
	Analytical Par	ameters (includ	e analysis ı	method a	nd num	ber and type of sample	containers)		
		USEPA	Method 80	D21 (BTE)	۲) - Three	e 40 mL VoA			
			, , , , , , , , , , , , , , , , , , , 						
		Disposal of Purg	ged Water:			Waste Tank Onsite	2		
Co	llected Sampl	es Stored on Ice	in Cooler:		\	<u> </u>			
	Chain of C	Custody Record	Complete:		Ye	ς			
		•	•	***************************************		tal Analysis Laboratory,			
Equip	ment Used Dເ				r Keck Int	terface Level, YSI Water	Quality Meter		
		and Ne	w Disposat	ole Bailer					
Notes/Com				,					
- * DO	Rending	may be off	•						
Slo	w Rechard	je							
rouised: 0	0/4 0/00								
revised: 0	D/ I U/U S								

MON	ITORING V	VELL SAMPLI	ING RECO	ORD	Animas Environmental Services			
Mon	itor Well No:	MW-	-7		6	524 E. Comanche, Farmi	ngton NM 87401	
	10			-	Tel. (505) 564-2281 Fax (505) 324-2022			
Site:	Groundwater	r Sampling				Project No.: AES 130411		
		ources Corporati	ion		-	Date: 2 (0		
	Julander Fede	eral #1E			-	Arrival Time: 114		
•	ng Technician:		SHG		_	Air Temp:		
_	e / No Purge:	Purge				D.C. Elev. (ft):		
	Diameter (in):					ell Depth (ft): 48		
	al D.T.W. (ft):		Time:	.1)		_(taken at initial gaugin	- · · · · · · · · · · · · · · · · · · ·	
		39.66		117	He	_(taken prior to purging _(taken after sample co	· ·	
	al D.T.W. (ft):	D.T.P.:	Time:	_	Thi	_(taken after sample co ckness: Tim	•	
11 17	APL Present.	D.1.P.;		·i		Kuezzi iiii	e	
Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity	00米	1	ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)		
115%	14.10	0.711	1.54	7.72	-59.7	0.25	Chan/SI Odor	
1205	14.44	0.714	0,90	7.54	-182.1		Gray Odos	
1310	14.39	0.710	1.02	7.51	-186-6		h	
1214	14.46	0.709	୦.୪୩	7.50	-182.3		(I	
1221	14.45	0.698	1.02	7,50	-160.4	4	11	
1226							Samples Collected	
								
	 			 				
				\vdash				
P	Analytical Para	ameters (include	e analysis n	nethod a	nd numr	ber and type of sample	containers)	
		USEPA	Method 80)21 (BTEX	८) - Three	e 40 mL VoA		
	ſ	Disposal of Purg	ed Water:			Waste Tank Onsite	e	
Col		es Stored on Ice	-	***************************************		Ves		
	•	Custody Record (-			Yes		
	-	-	•		ironmen!	tal Analysis Laboratory,	Albuquerque, NM	
Fauin	ment lised Du	-	· -			terface Level, YSI Water		
-Maile	Hent Osca Sa		w Disposabl		NCOR III.	ierrade Levely 10. 11415.	Quality Wictor	
Notes/Com	monte	WIIW ITO	N DISPOSAD.	le banc.				
		22111	Laura tisa					
71 80	185112 DU -	Senson Mult	Imvolur					
revised: 08	3/10/09			 		A		

MONITORING WELL SAMPLING RECORD					Animas Environmental Services			
Monitor Well No: MW-8				624 E. Comanche, Farmington NM 87401				
				-	Tel. (505) 564-2281 Fax (505) 324-2022			
Site: Groundwater Sampling						Project No.: AES 130411		
Location: Energen Resources Corporation						Date: 2/10/2014		
Project: Julander Federal #1E Arrival Time: 0457								
Sampling Technician: CL/SHG						Air Temp:	*	
Purge / No Purge: Purge					T.O.C. Elev. (ft):			
Well Diameter (in): 2				Total Well Depth (ft): 47.25				
Initial D.T.W. (ft):			Time:	, , , , , , , , , , , , , , , , , , , ,				
Confirm D.T.W. (ft): 37.86			Time:					
Final D.T.W. (ft):				Time: (taken after sample collection) D.T.W.: Thickness: Time:				
11 1	NAPL Present:	D.T.P.:	_ D.T.W	· •	Thic	ckness: Tim	e:	
Water Quality Parameters - Recorded During Well Purging								
	Temp	Conductivity	ро¥		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
1006	14.46	6.554	12.26	8.19	136.6	0.25	Chem/No Oder	
1013	14.66	0547	11.43		140.0	1	SI. Sed Tan No. Par	
1021	14.64	0.550	11.00	802	136.7	2	ic	
1027	14.56	0.551	10.01	8.00	138.1	3	11	
1034	14.52	0. 553	10.07	8.01	126.3	4		
1038	14.51	0.552	10.54	8.01	126.4	4,5		
1041							Samples Collected	
1								
			-					
				-				
Analytical Parameters (include analysis method and number and type of sample containers)								
USEPA Method 8021 (BTEX) - Three 40 mL VoA								
Disposal of Purged Water: Waste Tank Onsite								
Collected Samples Stored on Ice in Cooler:								
Chain of Custody Record Complete:								
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM								
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter								
and New Disposable Bailer								
Notes/Comments:								
revised: 08/10/09								