

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

| | |
|---|-----------------------------|
| Name of Company: SJB Gathering LLC/WPX Energy LLC | Contact: Deborah Watson |
| Address: PO Box 640, Aztec, NM 87410 | Telephone No.: 505-386-9693 |
| Facility Name: NE Chaco Com 166H CDP Pipeline/Trunk 2-5 | Facility Type: Pipeline |

| | | |
|--------------------------------|--------------------------------|---------|
| Surface Owner: BLM/State of NM | Mineral Owner: BLM/State of NM | API No. |
|--------------------------------|--------------------------------|---------|

LOCATION OF RELEASE

30-039-31202

| | | | | | | | | |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|------------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
| A | 17 | 23N | 07W | 226 | South | 497 | East | Rio Arriba |

Latitude 36.231448 Longitude -107.590197

NATURE OF RELEASE

| | | |
|--|--|---|
| Type of Release: Crude Oil | Volume of Release: 22.7 bbls | Volume Recovered: 0 bbls |
| Source of Release: Human Error. Oil line connected to Produced Water line. | Date and Hour of Occurrence 11/04/15, unknown | Date and Hour of Discovery 11/04/15, approximately 13:15 |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Katherina Diemer, BLM-FFO Cory Smith, NMOCD | OIL CONS. DIV DIST. 3 DEC 06 2016 |
| By Whom? Deborah Watson | Date and Hour 11/04/15 approximately 13:30 | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*
An unnamed drainage was impacted.

Describe Cause of Problem and Remedial Action Taken.*

As a result of a mistake which occurred during construction of the NE Chaco Com 166H CDP facility, crude oil flowed from the NE Chaco Com 166H CDP within the produced water pipeline until it exited the pipeline at the NE Chaco Com 163H water can.

Immediate Actions Include:

- Installation of oil absorbent pads and booms in strategic locations along the release path.
- Hand shoveling of impacted soil into sand bags, collected impacted soil taken to landfarm on November 4, 2015.
- Spec truck called in to recover crude oil in water can.
- Hydrovac truck called in to remove any ponding crude oil liquids.

Describe Area Affected and Cleanup Action Taken.*

From the water can, the crude oil flowed north then east, approximately 1,070 feet.

- Impacted soils were excavated and transported to landfarm for disposal.
- Confirmation soil samples were collected from within the hydrocarbon impacted area. Representatives from BLM-FFO and/or NMOCD were in attendance for sampling events.
- All final laboratory results were reported below applicable NMOCD RRAL. Laboratory results are included within the attached report.
- Final report is attached.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | | |
|---|--|-----------------------------------|
| Signature: <i>Deborah Watson</i> | OIL CONSERVATION DIVISION | |
| Printed Name: Deborah Watson | Approved by Environmental Specialist: <i>[Signature]</i> | |
| Title: Environmental Specialist | Approval Date: 1/23/17 | Expiration Date: |
| E-mail Address: deborah.watson@wpenergy.com | Conditions of Approval: _____ | Attached <input type="checkbox"/> |
| Date: 12/5/2016 | Phone: 505-386-9693 | |

* Attach Additional Sheets If Necessary

NLS 15341 30251

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Trunk 2-5/NE Chaco Com 166H Pipeline Release Report
Section 17, Township 23N, Range 7W
Rio Arriba County, NM

December 5, 2016

1.0 Introduction

On November 4, 2015, a release of approximately 23 barrels of crude oil occurred along the 2-5 pipeline just north of the NE Chaco Com 163H/275H well pad. As a result of a mistake which occurred during construction of the NE Chaco Com 166H CDP facility, crude oil flowed from the NE Chaco Com 166H CDP within the produced water pipeline until it exited the pipeline at the NE Chaco Com 163H water can. From the water can, the crude oil flowed north then east, approximately 1,070 feet. The release point is located in Section 17, Township 23N, Range 7W, Rio Arriba County, New Mexico. Cleanup at the site included power-washing of sandstone outcrops and removal and disposal of impacted soil.

A topographic map of the location is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Release Summary

Location: NE Chaco Com 163H Water Can along Trunk 2-5 pipeline

Release Location Description: Section 17, Township 23N, Range 7W

Release Latitude/Longitude: N36.231448, W107.590197

Cause: Human Error, pipe connection error during facility construction

Land Jurisdiction: Bureau of Land Management (BLM) and State of New Mexico

Agency Notification: New Mexico Oil Conservation Division (NMOCD), BLM Farmington Field Office (BLM-FFO), and New Mexico State Land Office (NMSLO)

Source of Release: pipeline

Release Contents: crude oil

Volume Released: 23 barrels

Volume of Impacted Material Removed: approximately 621 cubic yards and 395 barrels

NMOCD Cleanup Site Ranking: 30

3.0 NMOD Site Ranking

In accordance with *New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), this site was assigned a ranking score of 30. Based on a ranking score of 30, Recommended Remediation Action Levels (RRAL) for impacted soils at the site are as follows: 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

4.0 Field Activities

Cleanup at the site consisted of a combination of hand digging and mechanical excavation of material from within the impacted area. In addition to digging, sandstone within the drainage was power-washed with and cleaned using Simple Green.

Cleanup activities occurred during November and December 2015. Following the release, the site was stabilized to prevent migration of any remaining contamination outside the already impacted area. Cleanup activities were halted in January 2016 due to unfavorable site conditions (frozen soil and snow). Cleanup activities resumed in March 2016, with a final power washing event at the site during May 2016. Approximately 621 cubic yards and 395 barrels of impacted soil were removed from the release area. Impacted material was transported to Envirotech Landfarm for disposal. The executed C-138s (copy) are attached.

5.0 Soil Sampling

Rule Engineering, LLC representatives collected confirmation samples on December 23 and 30, 2015, March 18 and April 11, 2016. A WPX representative collected the remaining confirmation sample on September 23, 2016. Representatives from BLM-FFO and/or NMOCD were present during each of the sampling events. Each confirmation sample was laboratory analyzed for the following:

- BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021, and
- TPH (as DRO/GRO) per USEPA Method 8015.

All soil samples composited for laboratory analysis were placed into laboratory supplied glassware, labeled, and shipped on ice to Hall Environmental Analysis Laboratory. Sample locations are presented on Figure 3.

6.0 Analytical Results

Laboratory analytical results for final confirmation soil samples reported benzene and total BTEX below laboratory detection limits. Concentrations of total TPH (GRO/DRO) were reported below 100 mg/kg in all final confirmation samples.

Laboratory analytical results (final) are summarized in Table 1. Analytical laboratory reports are attached.

7.0 Conclusions

On November 4, 2015, a release occurred along the Trunk 2-5 pipeline. Approximately 621 cubic yards and 395 barrels of impacted soils were removed from within the release area. Laboratory analytical results for confirmation samples reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below applicable NMOCD RRAL. Reclamation activities were completed on November 2 and 3, 2016.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended. For additional information or questions regarding site conditions, please contact me at 505-333-1880.

Sincerely,



Deborah Watson
Environmental Specialist

Attachments

Figure 1. Topographic Map

Figure 2. Aerial Site Map

Figure 3. Soil Sample Locations (E-1 through E-5)

Figure 4. Soil Sample Locations (SC-2 through SC-7)

Table 1. Final Soil Sampling Results

Executed C-138s

Hall Analytical Laboratory Reports (Report #1512B05, 1512C24, 1601029, 1601161, 1603A14, 1604491, and 1609D96)

Table 1. Final Soil Sampling Results Summary
TPH and BTEX
NE Chaco Com 166H Pipeline Release

| Sample Name | Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Total Xylenes mg/kg | Total BTEX (mg/kg) | TPH as GRO (mg/kg) | TPH as DRO (mg/kg) | TPH as GRO+DRO (mg/kg) |
|--|-----------|-----------------|-----------------|----------------------|---------------------|--------------------|--------------------|--------------------|------------------------|
| NMOCD RRAL-Based on Site Ranking of 30 | | 10 | NE | NE | NE | 50 | 100 | | 100 |
| E-1 | 30-Dec-15 | ND | ND | ND | ND | ND | ND | ND | ND |
| E-2 | 30-Dec-15 | ND | ND | ND | ND | ND | ND | ND | ND |
| E-3 (R) | 4-Jan-16 | ND | ND | ND | ND | ND | 5.1 | ND | 5.1 |
| E-4 | 30-Dec-15 | ND | ND | ND | ND | ND | ND | 11 | 11 |
| E-5 (R) | 6-Jan-16 | ND | ND | ND | ND | ND | ND | ND | ND |
| SC-2 | 11-Apr-16 | ND | ND | ND | ND | ND | ND | 58 | 58 |
| SC-3 | 11-Apr-16 | ND | ND | ND | ND | ND | ND | 34 | 34 |
| SC-4 | 23-Sep-16 | ND | ND | ND | ND | ND | ND | ND | ND |
| SC-5 | 11-Apr-16 | ND | ND | ND | ND | ND | ND | 51 | 51 |
| SC-6 | 18-Mar-16 | ND | ND | ND | ND | ND | ND | 31 | 31 |
| SC-7 | 18-Mar-16 | ND | ND | ND | ND | ND | ND | ND | ND |

NE-not established
ND-not detected above laboratory reporting limits



Figure 1. Topographic Map
 NE Chaco Com 166H CDP Pipeline Release
 Section 17, Township 23N, Range 07W
 N36.231448, W107.590197
 Rio Arriba County, NM
 Scale 1:24,000

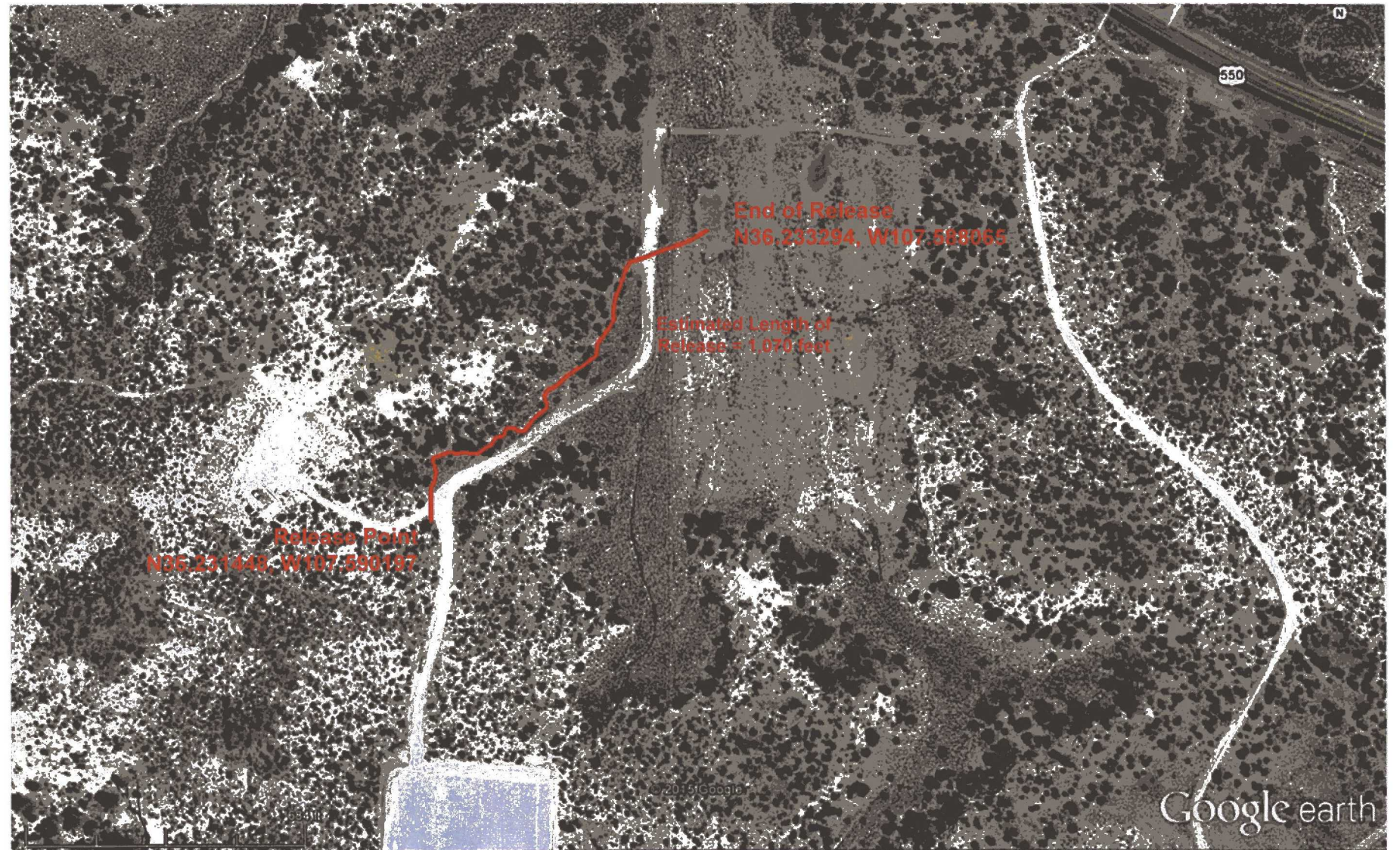


Figure 2. Aerial Site Map
NE Chaco Com 166H CDP Pipeline Release
Section 17, Township 23N, Range 07W
N36.231448, W107.590197
Rio Arriba County, NM



Figure 3. Soil Sample Locations (E-1 through E-5)
NE Chaco Com 166H CDP Pipeline Release
Section 17, Township 23N, Range 07W
N36.231448, W107.590197
Rio Arriba County, NM

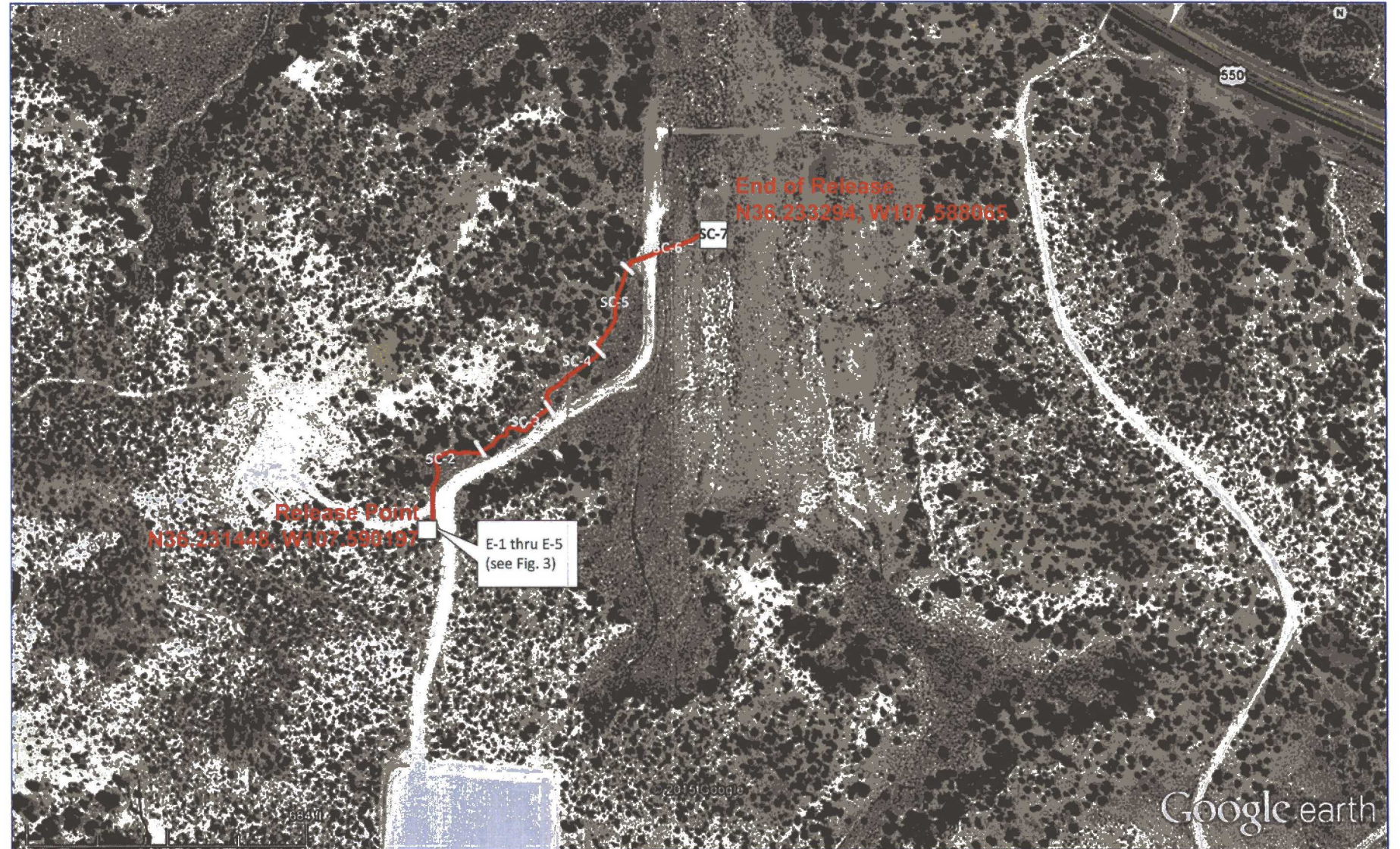


Figure 4. Soil Sample Locations (SC-2 through SC-7)
NE Chaco Com 166H CDP Pipeline Release
Section 17, Township 23N, Range 07W
N36.231448, W107.590197
Rio Arriba County, NM

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Energy Minerals and Natural Resources

Oil Conservation Division
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Santa Fe, NM 87505

04/108-0528 Form C-138
Revised August 1, 2011
*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

| |
|--|
| 1. Generator Name and Address: WPX Energy, PO Box 640, Aztec NM Requested by: Deborah Watson |
| 2. Originating Site: NE Chaco Com 166H Pipeline Release Rio Arriba County, NM |
| 3. Location of Material (Street Address, City, State or ULSTR): Section 17, T23N, R7W |
| 4. Source and Description of Waste: Crude oil pipeline release impacted soil. |
| Estimated Volume _____ yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) <u>134/80</u> yd ³ / bbls |

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Deborah Watson, representative or authorized agent for WPX Energy do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☒ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Deborah Watson, representative for WPX Energy do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:
Halo, Adobe, CNJ, Kelly Oilfield Services, Badger, Turnco, 3E Energy, SWB92g

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility Permit# NM 01-0011
Address of Facility: #43 Road 7175, south of Bloomfield, Hilltop, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Eric Liese

TITLE: Landfarm Administrator DATE: 11-4-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

District I
1625 N. French Dr., Hobbs, NM 88240
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Energy Minerals and Natural Resources

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04108-0528

Form C-138
Revised August 1, 2011

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and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

| | |
|--|--|
| 1. Generator Name and Address: WPX Energy, PO Box 640, Aztec NM Requested by: Deborah Watson | |
| 2. Originating Site: NE Chaco Com 166H Pipeline Release Rio Arriba County, NM | |
| 3. Location of Material (Street Address, City, State or ULSTR): Section 17, T23N, R7W | |
| 4. Source and Description of Waste: Crude oil pipeline release impacted soil. Estimated Volume _____ yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) <u>312,120</u> yd ³ / bbls | |
| 5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Deborah Watson</u> , representative or authorized agent for <u>WPX Energy</u> do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. <u>Operator Use Only: Waste Acceptance Frequency</u> <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input checked="" type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4) | |
| GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>Deborah Watson</u> , representative for <u>WPX Energy</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. | |
| 5. Transporter: <u>Kelley oilfield, CNJ, Adobe, Yucca, 3E Energy, Suezee</u> | |

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility Permit# NM 01-0011
Address of Facility: #43 Road 7175, south of Bloomfield, Hilltop, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Eric Liese

TITLE: Landfarm Administrator DATE: 12-7-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

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1625 N. French Dr., Hobbs, NM 88240
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Santa Fe, NM 87505

Form C-138

Revised August 1, 2011

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and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

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|---|
| 1. Generator Name and Address: WPX Energy, PO Box 640, Aztec NM Requested by: Deborah Watson |
| 2. Originating Site: NE Chaco Com 166H Pipeline Release Rio Arriba County, NM March 2016 |
| 3. Location of Material (Street Address, City, State or ULSTR): Section 17, T23N, R7W |
| 4. Source and Description of Waste: Crude oil pipeline release impacted soil. Estimated Volume _____ yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) 175 yd ³ / bbls |
| 5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Deborah Watson, representative or authorized agent for WPX Energy do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. Operator Use Only: Waste Acceptance Frequency <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input checked="" type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4) |
| GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, Deborah Watson, representative for WPX Energy do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. |
| 5. Transporter: Halo, Adobe, 3 E Energy, Kelly Oilfield |

OCD Permitted Surface Waste Management Facility

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Address of Facility: #43 Road 7175, south of Bloomfield, Hilltop, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Grabtree

TITLE: Environmental Manager DATE: 3/14/16

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

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| 1. Generator Name and Address: WPX Energy, PO Box 640, Aztec NM Requested by: Deborah Watson |
| 2. Originating Site: NE Chaco Com 166H Pipeline Release Rio Arriba County, NM |
| 3. Location of Material (Street Address, City, State or ULSTR): Section 17, T23N, R7W |
| 4. Source and Description of Waste: Crude oil pipeline release impacted soil and washout. Estimated Volume _____ yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) <u>45</u> yd ³ / bbls |
| 5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Deborah Watson</u> , representative or authorized agent for <u>WPX Energy</u> do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. <i>Operator Use Only: Waste Acceptance Frequency</i> <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input checked="" type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>Deborah Watson</u> , representative for <u>WPX Energy</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. |
| 5. Transporter: CNJ |

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility Permit# NM 01-0011
Address of Facility: #43 Road 7175, south of Bloomfield, Hilltop, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree

TITLE: Environmental Manager DATE: 5/10/16

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615



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

December 31, 2015

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: WPX NE Chaco Com #166

OrderNo.: 1512B05

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/23/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical ReportLab Order **1512B05**Date Reported: **12/31/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-5**Project:** WPX NE Chaco Com #166**Collection Date:** 12/21/2015 2:48:00 PM**Lab ID:** 1512B05-001**Matrix:** SOIL**Received Date:** 12/23/2015 8:05:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 360 | 9.3 | | mg/Kg | 1 | 12/30/2015 1:16:35 PM | 22991 |
| Surr: DNOP | 83.8 | 70-130 | | %REC | 1 | 12/30/2015 1:16:35 PM | 22991 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 21 | 4.8 | | mg/Kg | 1 | 12/29/2015 3:19:06 PM | 22974 |
| Surr: BFB | 201 | 66.2-112 | S | %REC | 1 | 12/29/2015 3:19:06 PM | 22974 |

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

| | | | | | |
|--------------------|----|---|----|---|-------------|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank | Page 1 of 3 |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range | |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range | |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | % Recovery outside of range due to dilution or matrix | | | |
| | | | | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512B05

31-Dec-15

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166

| | | | | | | | | | | |
|-----------------------------|------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-22991 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 22991 | RunNo: | 31140 | | | | | |
| Prep Date: | 12/29/2015 | Analysis Date: | 12/30/2015 | SeqNo: | 953585 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 9.6 | | 10.00 | | 95.7 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | LCS-22991 | SampType: | LCS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: | 22991 | RunNo: | 31140 | | | | | |
| Prep Date: | 12/29/2015 | Analysis Date: | 12/30/2015 | SeqNo: | 953624 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 48 | 10 | 50.00 | 0 | 95.5 | 65.8 | 136 | | | |
| Surr: DNOP | 4.4 | | 5.000 | | 89.0 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|----------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1512B05-001AMS | SampType: | MS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | SC-5 | Batch ID: | 22991 | RunNo: | 31140 | | | | | |
| Prep Date: | 12/29/2015 | Analysis Date: | 12/30/2015 | SeqNo: | 953922 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 710 | 10 | 49.75 | 355.9 | 703 | 31.2 | 162 | | | S |
| Surr: DNOP | 4.8 | | 4.975 | | 96.6 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1512B05-001AMSD | SampType: | MSD | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | SC-5 | Batch ID: | 22991 | RunNo: | 31140 | | | | | |
| Prep Date: | 12/29/2015 | Analysis Date: | 12/30/2015 | SeqNo: | 953923 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 820 | 10 | 49.90 | 355.9 | 921 | 31.2 | 162 | 14.5 | 31.7 | S |
| Surr: DNOP | 4.8 | | 4.990 | | 95.8 | 70 | 130 | 0 | 0 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512B05

31-Dec-15

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166

| | | | | | | | | | | |
|-------------------------------|------------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-22974 | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | 22974 | RunNo: | 31128 | | | | | |
| Prep Date: | 12/28/2015 | Analysis Date: | 12/29/2015 | SeqNo: | 952387 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 880 | | 1000 | | 87.6 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|------------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-22974 | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | 22974 | RunNo: | 31128 | | | | | |
| Prep Date: | 12/28/2015 | Analysis Date: | 12/29/2015 | SeqNo: | 952388 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 27 | 5.0 | 25.00 | 0 | 108 | 79.6 | 122 | | | |
| Surr: BFB | 970 | | 1000 | | 96.5 | 66.2 | 112 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4991 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1512B05

RcptNo: 1

Received by/date: JA

12/23/15

Logged By: Ashley Gallegos

12/23/2015 8:05:00 AM

AG

Completed By: Ashley Gallegos

12/23/2015 1:10:48 PM

AG

Reviewed By:

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | -1.2 | Good | Not Present | | | |

Chain-of-Custody Record

Client: Rude Engineering LLC

Turn-Around Time:
☒ Standard ☐ Rush



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

Mailing Address: 501 Airport Dr. Suite 205

Project #: WFX NE Chaco Corn #1 lot

4901 Hawkins NE - Albuquerque, NM 87109

Phone #: (505) 716-2367

Tel. 505-345-3975 Fax 505-345-4107

email or Fax#: hwoods@rudeengineering.com

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Project Manager:

Analysis Request

Accreditation ☐ NELAP ☐ Other

Heather Woods

Sample Temperature: 1.2

Sampler: Heather Woods / Justin Valdez

On Ice: ☒ Yes ☐ No

HEAL No. 1512805

Container Type and #

Preservative Type

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

Date

Time

Matrix

Sample Request ID

12/21/15

1448

Soil

SC-5

(1) 4 oz Glass

Cold

-001



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

January 04, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX NE Chaco com #166H

OrderNo.: 1512C24

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/31/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1512C24

Date Reported: 1/4/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: E-1

Project: WPX NE Chaco com #166H

Collection Date: 12/30/2015 1:41:00 PM

Lab ID: 1512C24-001

Matrix: MEOH (SOIL)

Received Date: 12/31/2015 7:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|------------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: TOM |
| Diesel Range Organics (DRO) | ND | 9.9 | | mg/Kg | 1 | 12/31/2015 11:15:23 AM | 23017 |
| Surr: DNOP | 78.4 | 70-130 | | %REC | 1 | 12/31/2015 11:15:23 AM | 23017 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 3.3 | | mg/Kg | 1 | 12/31/2015 9:43:07 AM | A31176 |
| Surr: BFB | 87.8 | 66.2-112 | | %REC | 1 | 12/31/2015 9:43:07 AM | A31176 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.033 | | mg/Kg | 1 | 12/31/2015 9:43:07 AM | C31176 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 12/31/2015 9:43:07 AM | C31176 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 12/31/2015 9:43:07 AM | C31176 |
| Xylenes, Total | ND | 0.066 | | mg/Kg | 1 | 12/31/2015 9:43:07 AM | C31176 |
| Surr: 4-Bromofluorobenzene | 121 | 80-120 | S | %REC | 1 | 12/31/2015 9:43:07 AM | C31176 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512C24

Date Reported: 1/4/2016

CLIENT: Rule Engineering LLC

Client Sample ID: E-2

Project: WPX NE Chaco com #166H

Collection Date: 12/30/2015 1:50:00 PM

Lab ID: 1512C24-002

Matrix: MEOH (SOIL)

Received Date: 12/31/2015 7:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|------------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: TOM |
| Diesel Range Organics (DRO) | ND | 9.9 | | mg/Kg | 1 | 12/31/2015 11:58:50 AM | 23017 |
| Surr: DNOP | 79.9 | 70-130 | | %REC | 1 | 12/31/2015 11:58:50 AM | 23017 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 5.1 | | mg/Kg | 1 | 12/31/2015 10:07:33 AM | A31176 |
| Surr: BFB | 85.9 | 66.2-112 | | %REC | 1 | 12/31/2015 10:07:33 AM | A31176 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.051 | | mg/Kg | 1 | 12/31/2015 10:07:33 AM | C31176 |
| Toluene | ND | 0.051 | | mg/Kg | 1 | 12/31/2015 10:07:33 AM | C31176 |
| Ethylbenzene | ND | 0.051 | | mg/Kg | 1 | 12/31/2015 10:07:33 AM | C31176 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 12/31/2015 10:07:33 AM | C31176 |
| Surr: 4-Bromofluorobenzene | 118 | 80-120 | | %REC | 1 | 12/31/2015 10:07:33 AM | C31176 |

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

| | | | | |
|--------------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512C24

Date Reported: 1/4/2016

CLIENT: Rule Engineering LLC

Client Sample ID: E-3

Project: WPX NE Chaco com #166H

Collection Date: 12/30/2015 1:58:00 PM

Lab ID: 1512C24-003

Matrix: MEOH (SOIL)

Received Date: 12/31/2015 7:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|------------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: TOM |
| Diesel Range Organics (DRO) | 1400 | 98 | | mg/Kg | 10 | 12/31/2015 11:37:12 AM | 23017 |
| Surr: DNOP | 0 | 70-130 | S | %REC | 10 | 12/31/2015 11:37:12 AM | 23017 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 230 | 22 | | mg/Kg | 5 | 12/31/2015 10:32:10 AM | A31176 |
| Surr: BFB | 260 | 66.2-112 | S | %REC | 5 | 12/31/2015 10:32:10 AM | A31176 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | 0.25 | 0.22 | | mg/Kg | 5 | 12/31/2015 10:32:10 AM | C31176 |
| Toluene | 3.0 | 0.22 | | mg/Kg | 5 | 12/31/2015 10:32:10 AM | C31176 |
| Ethylbenzene | 1.4 | 0.22 | | mg/Kg | 5 | 12/31/2015 10:32:10 AM | C31176 |
| Xylenes, Total | 8.8 | 0.45 | | mg/Kg | 5 | 12/31/2015 10:32:10 AM | C31176 |
| Surr: 4-Bromofluorobenzene | 163 | 80-120 | S | %REC | 5 | 12/31/2015 10:32:10 AM | C31176 |

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

| | | | | | |
|--------------------|----|---|----|---|-------------|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank | Page 3 of 7 |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range | |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range | |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | % Recovery outside of range due to dilution or matrix | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512C24

Date Reported: 1/4/2016

CLIENT: Rule Engineering LLC

Client Sample ID: E-4

Project: WPX NE Chaco com #166H

Collection Date: 12/30/2015 2:16:00 PM

Lab ID: 1512C24-004

Matrix: MEOH (SOIL)

Received Date: 12/31/2015 7:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|------------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: TOM |
| Diesel Range Organics (DRO) | 11 | 9.8 | | mg/Kg | 1 | 12/31/2015 12:20:34 PM | 23017 |
| Surr: DNOP | 78.4 | 70-130 | | %REC | 1 | 12/31/2015 12:20:34 PM | 23017 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 5.2 | | mg/Kg | 1 | 12/31/2015 10:56:47 AM | A31176 |
| Surr: BFB | 91.7 | 66.2-112 | | %REC | 1 | 12/31/2015 10:56:47 AM | A31176 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.052 | | mg/Kg | 1 | 12/31/2015 10:56:47 AM | C31176 |
| Toluene | ND | 0.052 | | mg/Kg | 1 | 12/31/2015 10:56:47 AM | C31176 |
| Ethylbenzene | ND | 0.052 | | mg/Kg | 1 | 12/31/2015 10:56:47 AM | C31176 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 12/31/2015 10:56:47 AM | C31176 |
| Surr: 4-Bromofluorobenzene | 120 | 80-120 | | %REC | 1 | 12/31/2015 10:56:47 AM | C31176 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512C24

04-Jan-16

Client: Rule Engineering LLC

Project: WPX NE Chaco com #166H

| | | | | | | | | | | |
|-----------------------------|------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-23017 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 23017 | RunNo: | 31167 | | | | | |
| Prep Date: | 12/31/2015 | Analysis Date: | 12/31/2015 | SeqNo: | 954044 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 11 | | 10.00 | | 108 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | LCS-23017 | SampType: | LCS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: | 23017 | RunNo: | 31167 | | | | | |
| Prep Date: | 12/31/2015 | Analysis Date: | 12/31/2015 | SeqNo: | 954045 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 60 | 10 | 50.00 | 0 | 120 | 65.8 | 136 | | | |
| Surr: DNOP | 5.1 | | 5.000 | | 101 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|----------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1512C24-001AMS | SampType: | MS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | E-1 | Batch ID: | 23017 | RunNo: | 31167 | | | | | |
| Prep Date: | 12/31/2015 | Analysis Date: | 12/31/2015 | SeqNo: | 954525 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 49 | 9.7 | 48.54 | 7.550 | 84.7 | 31.2 | 162 | | | |
| Surr: DNOP | 3.9 | | 4.854 | | 80.2 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------------|----------------|------------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1512C24-001AMSD | SampType: | MSD | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | E-1 | Batch ID: | 23017 | RunNo: | 31167 | | | | | |
| Prep Date: | 12/31/2015 | Analysis Date: | 12/31/2015 | SeqNo: | 954526 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 52 | 10 | 50.20 | 7.550 | 89.2 | 31.2 | 162 | 7.26 | 31.7 | |
| Surr: DNOP | 4.0 | | 5.020 | | 79.7 | 70 | 130 | 0 | 0 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512C24

04-Jan-16

Client: Rule Engineering LLC

Project: WPX NE Chaco com #166H

| | | | | | | | | | | |
|-------------------------------|--------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | A31176 | RunNo: | 31176 | | | | | |
| Prep Date: | | Analysis Date: | 12/31/2015 | SeqNo: | 954725 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 840 | | 1000 | | 84.0 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|---------------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 2.5UG GRO LCS | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | A31176 | RunNo: | 31176 | | | | | |
| Prep Date: | | Analysis Date: | 12/31/2015 | SeqNo: | 954726 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 24 | 5.0 | 25.00 | 0 | 94.2 | 79.6 | 122 | | | |
| Surr: BFB | 950 | | 1000 | | 95.3 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|----------------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 1512C24-001AMS | SampType: | MS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | E-1 | Batch ID: | A31176 | RunNo: | 31176 | | | | | |
| Prep Date: | | Analysis Date: | 12/31/2015 | SeqNo: | 954727 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 17 | 3.3 | 16.57 | 0 | 101 | 62.5 | 151 | | | |
| Surr: BFB | 670 | | 662.7 | | 101 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------------|----------------|------------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 1512C24-001AMSD | SampType: | MSD | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | E-1 | Batch ID: | A31176 | RunNo: | 31176 | | | | | |
| Prep Date: | | Analysis Date: | 12/31/2015 | SeqNo: | 954728 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 16 | 3.3 | 16.57 | 0 | 99.6 | 62.5 | 151 | 1.04 | 22.1 | |
| Surr: BFB | 690 | | 662.7 | | 104 | 66.2 | 112 | 0 | 0 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512C24

04-Jan-16

Client: Rule Engineering LLC

Project: WPX NE Chaco com #166H

| | | | | | | | | | | |
|----------------------------|--------|---------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 5ML RB | SampType: MBLK | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: C31176 | | | RunNo: 31176 | | | | | |
| Prep Date: | | Analysis Date: 12/31/2015 | | | SeqNo: 954739 | | Units: mg/Kg | | | |
| 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 | 1.1 | | 1.000 | | 113 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------------|---------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 100NG BTEX LCSB | SampType: LCS | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: C31176 | | | RunNo: 31176 | | | | | |
| Prep Date: | | Analysis Date: 12/31/2015 | | | SeqNo: 954740 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.94 | 0.050 | 1.000 | 0 | 93.7 | 80 | 120 | | | |
| Toluene | 0.98 | 0.050 | 1.000 | 0 | 97.9 | 80 | 120 | | | |
| Ethylbenzene | 0.98 | 0.050 | 1.000 | 0 | 98.4 | 80 | 120 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 101 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.3 | | 1.000 | | 126 | 80 | 120 | | | S |

| | | | | | | | | | | |
|----------------------------|----------------|---------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 1512C24-002AMS | SampType: MS | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | E-2 | Batch ID: C31176 | | | RunNo: 31176 | | | | | |
| Prep Date: | | Analysis Date: 12/31/2015 | | | SeqNo: 954741 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.82 | 0.051 | 1.022 | 0 | 80.0 | 69.6 | 136 | | | |
| Toluene | 0.87 | 0.051 | 1.022 | 0.007150 | 84.2 | 76.2 | 134 | | | |
| Ethylbenzene | 0.89 | 0.051 | 1.022 | 0 | 86.7 | 75.8 | 137 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.064 | 0.01706 | 88.2 | 78.9 | 133 | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.022 | | 121 | 80 | 120 | | | S |

| | | | | | | | | | | |
|----------------------------|-----------------|---------------------------|-----------|-------------|---------------------------------------|----------|--------------|-------|----------|------|
| Sample ID | 1512C24-002AMSD | SampType: MSD | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | E-2 | Batch ID: C31176 | | | RunNo: 31176 | | | | | |
| Prep Date: | | Analysis Date: 12/31/2015 | | | SeqNo: 954742 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.80 | 0.051 | 1.022 | 0 | 78.2 | 69.6 | 136 | 2.31 | 20 | |
| Toluene | 0.86 | 0.051 | 1.022 | 0.007150 | 83.6 | 76.2 | 134 | 0.685 | 20 | |
| Ethylbenzene | 0.89 | 0.051 | 1.022 | 0 | 87.0 | 75.8 | 137 | 0.253 | 20 | |
| Xylenes, Total | 2.8 | 0.10 | 3.064 | 0.01706 | 89.3 | 78.9 | 133 | 1.32 | 20 | |
| Surr: 4-Bromofluorobenzene | 1.3 | | 1.022 | | 128 | 80 | 120 | 0 | 0 | S |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1512C24

RcptNo: 1

Received by/date:

Logged By:

Joe Archuleta

12/31/2015 7:45:00 AM

Completed By:

Joe Archuleta

12/31/2015 8:17:32 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH.

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.0 | Good | Yes | | | |

Chain-of-Custody Record

Client: Rule Engineering LLC
 Mailing Address: 501 Airport Dr, Suite 205
Farmington, NM 87401
 Phone #: (505) 716-2787
 email or Fax#: hwoods@ruleengineering.com
 QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
 Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush Same Day
 Project Name:
WPX NE Chaco Com # 11664
 Project #:
 Project Manager:
Heather Woods
 Sampler: Justin Valdez / Heather Woods
 On Ice: ☒ Yes ☐ No
 Sample Temperature: 1.0



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / (8021)) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | | | | | Air Bubbles (Y or N) |
|---|------|--------|-------------------|----------------------|-------------------|-----------------|---------------|------------------------------|--------------------------------|--------------------|--------------------|---------------------------|---------------|--|------------------------------|-------------|-----------------|--|--|--|--|----------------------|
| 12/30/15 | 1341 | Soil | E-1 | (1) 4 oz Glass | cold | 1512C24 -001 | X | | X | | | | | | | | | | | | | |
| 12/30/15 | 1350 | Soil | E-2 | (1) 4 oz Glass | cold | -002 | X | | X | | | | | | | | | | | | | |
| 12/30/15 | 1358 | Soil | E-3 | (1) 4 oz Glass | cold | -003 | X | | X | | | | | | | | | | | | | |
| 12/30/15 | 1416 | Soil | E-4 | (1) 4 oz Glass | cold | -004 | X | | X | | | | | | | | | | | | | |
| <div> <div></div> <div>NFS</div> <div>HL</div> </div> | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

Date: 12/30/15 Time: 1650 Relinquished by: Heather M. Woods
 Date: 12/30/15 Time: 1710 Relinquished by: Justin Valdez
 Received by: Justin Valdez Date: 12/30/15 Time: 1650
 Received by: Justin Valdez Date: 12/31/15 Time: 0745

Remarks: Direct Bill to WPX
Attn: Debbie Watson

If necessary, 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.



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

January 08, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX NE Chaco Com #166H

OrderNo.: 1601029

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/5/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1601029

Date Reported: 1/8/2016

CLIENT: Rule Engineering LLC

Client Sample ID: E-3 (R)

Project: WPX NE Chaco Com #166H

Collection Date: 1/4/2016 1:20:00 PM

Lab ID: 1601029-001

Matrix: MEOH (SOIL)

Received Date: 1/5/2016 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | ND | 9.7 | | mg/Kg | 1 | 1/5/2016 10:29:44 AM | 23066 |
| Surr: DNOP | 80.8 | 70-130 | | %REC | 1 | 1/5/2016 10:29:44 AM | 23066 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 5.1 | 3.9 | | mg/Kg | 1 | 1/5/2016 10:49:40 AM | A31232 |
| Surr: BFB | 102 | 66.2-112 | | %REC | 1 | 1/5/2016 10:49:40 AM | A31232 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.039 | | mg/Kg | 1 | 1/5/2016 10:49:40 AM | C31232 |
| Toluene | ND | 0.039 | | mg/Kg | 1 | 1/5/2016 10:49:40 AM | C31232 |
| Ethylbenzene | ND | 0.039 | | mg/Kg | 1 | 1/5/2016 10:49:40 AM | C31232 |
| Xylenes, Total | ND | 0.079 | | mg/Kg | 1 | 1/5/2016 10:49:40 AM | C31232 |
| Surr: 4-Bromofluorobenzene | 133 | 80-120 | S | %REC | 1 | 1/5/2016 10:49:40 AM | C31232 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |
| | | | | |

Analytical Report

Lab Order 1601029

Date Reported: 1/8/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: E-5

Project: WPX NE Chaco Com #166H

Collection Date: 1/4/2016 1:30:00 PM

Lab ID: 1601029-002

Matrix: MEOH (SOIL)

Received Date: 1/5/2016 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 790 | 96 | | mg/Kg | 10 | 1/5/2016 10:51:26 AM | 23066 |
| Surr: DNOP | 0 | 70-130 | S | %REC | 10 | 1/5/2016 10:51:26 AM | 23066 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 230 | 18 | | mg/Kg | 5 | 1/5/2016 10:25:04 AM | A31232 |
| Surr: BFB | 406 | 66.2-112 | S | %REC | 5 | 1/5/2016 10:25:04 AM | A31232 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.089 | | mg/Kg | 5 | 1/5/2016 10:25:04 AM | C31232 |
| Toluene | 1.8 | 0.18 | | mg/Kg | 5 | 1/5/2016 10:25:04 AM | C31232 |
| Ethylbenzene | 1.7 | 0.18 | | mg/Kg | 5 | 1/5/2016 10:25:04 AM | C31232 |
| Xylenes, Total | 13 | 0.36 | | mg/Kg | 5 | 1/5/2016 10:25:04 AM | C31232 |
| Surr: 4-Bromofluorobenzene | 174 | 80-120 | S | %REC | 5 | 1/5/2016 10:25:04 AM | C31232 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601029

08-Jan-16

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|-----------------------------|----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-23066 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 23066 | RunNo: | 31230 | | | | | |
| Prep Date: | 1/5/2016 | Analysis Date: | 1/5/2016 | SeqNo: | 956227 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 7.9 | | 10.00 | | 79.4 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | LCS-23066 | SampType: | LCS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: | 23066 | RunNo: | 31230 | | | | | |
| Prep Date: | 1/5/2016 | Analysis Date: | 1/5/2016 | SeqNo: | 956228 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 48 | 10 | 50.00 | 0 | 95.4 | 65.8 | 136 | | | |
| Surr: DNOP | 3.8 | | 5.000 | | 76.5 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|----------------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1601029-001AMS | SampType: | MS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | E-3 (R) | Batch ID: | 23066 | RunNo: | 31230 | | | | | |
| Prep Date: | 1/5/2016 | Analysis Date: | 1/5/2016 | SeqNo: | 956500 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 53 | 9.8 | 48.97 | 5.181 | 97.8 | 31.2 | 162 | | | |
| Surr: DNOP | 3.9 | | 4.897 | | 79.5 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | 1601029-001AMSD | SampType: | MSD | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | E-3 (R) | Batch ID: | 23066 | RunNo: | 31230 | | | | | |
| Prep Date: | 1/5/2016 | Analysis Date: | 1/5/2016 | SeqNo: | 956501 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 49 | 9.7 | 48.73 | 5.181 | 90.8 | 31.2 | 162 | 7.13 | 31.7 | |
| Surr: DNOP | 3.9 | | 4.873 | | 80.4 | 70 | 130 | 0 | 0 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601029

08-Jan-16

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | A31232 | RunNo: | 31232 | | | | | |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956882 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 830 | | 1000 | | 83.5 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 2.5UG GRO LCS | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | A31232 | RunNo: | 31232 | | | | | |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956883 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 23 | 5.0 | 25.00 | 0 | 93.3 | 79.6 | 122 | | | |
| Surr: BFB | 1000 | | 1000 | | 101 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|----------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 1601029-001AMS | SampType: | MS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | E-3 (R) | Batch ID: | A31232 | RunNo: | 31232 | | | | | |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956884 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 18 | 3.9 | 19.69 | 5.071 | 67.5 | 62.5 | 151 | | | |
| Surr: BFB | 780 | | 787.4 | | 98.6 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 1601029-001AMSD | SampType: | MSD | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | E-3 (R) | Batch ID: | A31232 | RunNo: | 31232 | | | | | |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956885 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 24 | 3.9 | 19.69 | 5.071 | 96.7 | 62.5 | 151 | 27.1 | 22.1 | R |
| Surr: BFB | 820 | | 787.4 | | 104 | 66.2 | 112 | 0 | 0 | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601029

08-Jan-16

Client: Rule Engineering LLC
Project: WPX NE Chaco Com #166H

| | | | | | |
|------------|--------|----------------|----------|-----------|-----------------------------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles |
| Client ID: | PBS | Batch ID: | C31232 | RunNo: | 31232 |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956895 |
| | | | | Units: | mg/Kg |

| 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 | 1.1 | | 1.000 | | 112 | 80 | 120 | | | |

| | | | | | |
|------------|----------------|----------------|----------|-----------|-----------------------------|
| Sample ID | 100NG BTEX LCS | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles |
| Client ID: | LCSS | Batch ID: | C31232 | RunNo: | 31232 |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956896 |
| | | | | Units: | mg/Kg |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|----------------------------|--------|-------|-----------|-------------|------|----------|-----------|------|----------|------|
| Benzene | 0.89 | 0.050 | 1.000 | 0 | 89.5 | 80 | 120 | | | |
| Toluene | 0.95 | 0.050 | 1.000 | 0 | 94.6 | 80 | 120 | | | |
| Ethylbenzene | 0.96 | 0.050 | 1.000 | 0 | 96.4 | 80 | 120 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 99.6 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.3 | | 1.000 | | 126 | 80 | 120 | | | S |

| | | | | | |
|------------|----------------|----------------|----------|-----------|-----------------------------|
| Sample ID | 1601029-002AMS | SampType: | MS | TestCode: | EPA Method 8021B: Volatiles |
| Client ID: | E-5 | Batch ID: | C31232 | RunNo: | 31232 |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956897 |
| | | | | Units: | mg/Kg |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|----------------------------|--------|------|-----------|-------------|------|----------|-----------|------|----------|------|
| Benzene | 3.3 | 0.18 | 3.562 | 0.06126 | 90.9 | 71.5 | 122 | | | |
| Toluene | 5.5 | 0.18 | 3.562 | 1.780 | 105 | 71.2 | 123 | | | |
| Ethylbenzene | 5.7 | 0.18 | 3.562 | 1.734 | 112 | 75.2 | 130 | | | |
| Xylenes, Total | 25 | 0.36 | 10.68 | 12.97 | 110 | 72.4 | 131 | | | |
| Surr: 4-Bromofluorobenzene | 6.1 | | 3.562 | | 171 | 80 | 120 | | | S |

| | | | | | |
|------------|-----------------|----------------|----------|-----------|-----------------------------|
| Sample ID | 1601029-002AMSD | SampType: | MSD | TestCode: | EPA Method 8021B: Volatiles |
| Client ID: | E-5 | Batch ID: | C31232 | RunNo: | 31232 |
| Prep Date: | | Analysis Date: | 1/5/2016 | SeqNo: | 956898 |
| | | | | Units: | mg/Kg |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|----------------------------|--------|------|-----------|-------------|------|----------|-----------|------|----------|------|
| Benzene | 3.2 | 0.18 | 3.562 | 0.06126 | 89.0 | 71.5 | 122 | 2.04 | 20 | |
| Toluene | 5.4 | 0.18 | 3.562 | 1.780 | 102 | 71.2 | 123 | 1.36 | 20 | |
| Ethylbenzene | 5.7 | 0.18 | 3.562 | 1.734 | 110 | 75.2 | 130 | 1.28 | 20 | |
| Xylenes, Total | 24 | 0.36 | 10.68 | 12.97 | 107 | 72.4 | 131 | 1.40 | 20 | |
| Surr: 4-Bromofluorobenzene | 6.2 | | 3.562 | | 174 | 80 | 120 | 0 | 0 | S |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4167
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1601029

Rep: No: 1

Received by/date:

Logged By: Lindsay Mangin

1/5/2016 8:15:00 AM

Completed By: Lindsay Mangin

1/5/2016 8:25:25 AM

Reviewed By:

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.6 | Good | Yes | | | |

ent: Rule Engineering LLC

Mailing Address: 501 Airport Dr, Suite 205

Armington, NM 87401

Phone #: (505) 716-2787

Mail or Fax#: hwoods@ruleengineering.com

VQC Package:

☐ Level 4 (Full Validation)

NECAP ☐ Other _____

EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush Same Day

Project Name:

WPX NE Chaco Com #166H

Project #:

Project Manager: _____

Heather Woods

Sampler: H. Woods / J. Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|------|------|--------|-------------------|----------------------|-------------------|----------|
|------|------|--------|-------------------|----------------------|-------------------|----------|

| | | | | | | |
|-----|------|------|--------|---------------------------|---------------|------|
| 116 | 1320 | Soil | E-3(R) | Mudh Kit (1) 4oz Glass | MeOH/ Cold | -001 |
|-----|------|------|--------|---------------------------|---------------|------|

| | | | | | | |
|------|------|------|-----|---------------------------|----------------|------|
| 1/16 | 1330 | Soil | E-5 | M2OH Kit (1) 4oz Glass | M2OH / cold | -002 |
|------|------|------|-----|---------------------------|----------------|------|

| | | | | | |
|------|-------|------------------|--------------|------|------|
| ite: | Time: | Relinquished by: | Received by: | Date | Time |
|------|-------|------------------|--------------|------|------|

1714 Health 11 1/2 (Sensitivity) 1/4 1714

| | | | | | |
|-------|-------|------------------|--------------|------|------|
| File: | Time: | Relinquished by: | Received by: | Date | Time |
|-------|-------|------------------|--------------|------|------|

| | | | | |
|----|------|-----------------|---------|------|
| 1. | 1954 | Chas. F. Wooten | 1/10/54 | 0815 |
|----|------|-----------------|---------|------|

| | | |
|--|--|--|
| | | |
| | | |
| | | |

**HAL . ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| | | | |
|--|---|---|--|
| | X | X | BTEX + VOCs + PAHs (8021) |
| | | | BTEX + MTBE + TPH (Gas only) |
| | X | X | TPH 8015B (GRO / DRO / PAHs) |
| | | | TPH (Method 418.1) |
| | | | EDB (Method 504.1) |
| | | | PAH's (8310 or 8270 SIMS) |
| | | | RCRA 8 Metals |
| | | | Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄) |
| | | | 8081 Pesticides / 8062 PCB's |
| | | | 8260B (VOA) |
| | | | 8270 (Semi-VOA) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | Air Bubbles (Y or N) |

| | |
|----------|---|
| Remarks: | Direct Bill to WPX Attn: Debbie Watson |
|----------|---|

If necessary, samples submitted to Hal Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contacted data will be clearly noted on the analytical report.



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

January 08, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX Chaco Com #166H

OrderNo.: 1601161

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/7/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1601161

Date Reported: 1/8/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: E-5 (R)

Project: WPX Chaco Com #166H

Collection Date: 1/6/2016 2:40:00 PM

Lab ID: 1601161-001

Matrix: MEOH (SOIL)

Received Date: 1/7/2016 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | ND | 9.6 | | mg/Kg | 1 | 1/7/2016 1:20:33 PM | 23102 |
| Surr: DNOP | 77.4 | 70-130 | | %REC | 1 | 1/7/2016 1:20:33 PM | 23102 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 3.2 | | mg/Kg | 1 | 1/7/2016 10:43:20 AM | A31307 |
| Surr: BFB | 96.7 | 66.2-112 | | %REC | 1 | 1/7/2016 10:43:20 AM | A31307 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.032 | | mg/Kg | 1 | 1/7/2016 10:43:20 AM | R31307 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 1/7/2016 10:43:20 AM | R31307 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 1/7/2016 10:43:20 AM | R31307 |
| Xylenes, Total | ND | 0.063 | | mg/Kg | 1 | 1/7/2016 10:43:20 AM | R31307 |
| Surr: 4-Bromofluorobenzene | 129 | 80-120 | S | %REC | 1 | 1/7/2016 10:43:20 AM | R31307 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601161

08-Jan-16

Client: Rule Engineering LLC
Project: WPX Chaco Com #166H

| | | | | | | | | | | |
|-----------------------------|----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-23102 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 23102 | RunNo: | 31293 | | | | | |
| Prep Date: | 1/7/2016 | Analysis Date: | 1/7/2016 | SeqNo: | 958006 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 8.0 | | 10.00 | | 79.7 | 70 | 130 | | | |

| | | | | | | | | | | |
|------------|----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-23116 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 23116 | RunNo: | 31303 | | | | | |
| Prep Date: | 1/7/2016 | Analysis Date: | 1/7/2016 | SeqNo: | 958503 | Units: | %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 14 | | 10.00 | | 137 | 70 | 130 | | | S |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | LCS-23102 | SampType: | LCS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: | 23102 | RunNo: | 31293 | | | | | |
| Prep Date: | 1/7/2016 | Analysis Date: | 1/7/2016 | SeqNo: | 958703 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 45 | 10 | 50.00 | 0 | 90.0 | 65.8 | 136 | | | |
| Surr: DNOP | 4.2 | | 5.000 | | 83.8 | 70 | 130 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601161

08-Jan-16

Client: Rule Engineering LLC
Project: WPX Chaco Com #166H

| | | | | | | | | | | |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 5ML RB | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | A31307 | RunNo: | 31307 | | | | | |
| Prep Date: | | Analysis Date: | 1/7/2016 | SeqNo: | 958472 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 890 | | 1000 | | 88.5 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|---------------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | 2.5UG GRO LCS | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | A31307 | RunNo: | 31307 | | | | | |
| Prep Date: | | Analysis Date: | 1/7/2016 | SeqNo: | 958473 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 22 | 5.0 | 25.00 | 0 | 88.8 | 79.6 | 122 | | | |
| Surr: BFB | 990 | | 1000 | | 99.0 | 66.2 | 112 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1601161

08-Jan-16

Client: Rule Engineering LLC
Project: WPX Chaco Com #166H

| | | | | | | | | | | |
|----------------------------|--------|-------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 5ML RB | SampType: MBLK | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: R31307 | | | RunNo: 31307 | | | | | |
| Prep Date: | | Analysis Date: 1/7/2016 | | | SeqNo: 958479 | | Units: mg/Kg | | | |
| 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 | 1.2 | | 1.000 | | 119 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|----------------|-------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 100NG BTEX LCS | SampType: LCS | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: R31307 | | | RunNo: 31307 | | | | | |
| Prep Date: | | Analysis Date: 1/7/2016 | | | SeqNo: 958480 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.92 | 0.050 | 1.000 | 0 | 91.9 | 80 | 120 | | | |
| Toluene | 0.94 | 0.050 | 1.000 | 0 | 94.2 | 80 | 120 | | | |
| Ethylbenzene | 0.97 | 0.050 | 1.000 | 0 | 96.8 | 80 | 120 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 100 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.3 | | 1.000 | | 129 | 80 | 120 | | | S |

| | | | | | | | | | | |
|----------------------------|----------------|-------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 1601161-001AMS | SampType: MS | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | E-5 (R) | Batch ID: R31307 | | | RunNo: 31307 | | | | | |
| Prep Date: | | Analysis Date: 1/7/2016 | | | SeqNo: 958481 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.44 | 0.032 | 0.6345 | 0.004568 | 67.9 | 71.5 | 122 | | | S |
| Toluene | 0.48 | 0.032 | 0.6345 | 0.01929 | 72.6 | 71.2 | 123 | | | |
| Ethylbenzene | 0.49 | 0.032 | 0.6345 | 0.009771 | 76.4 | 75.2 | 130 | | | |
| Xylenes, Total | 1.6 | 0.063 | 1.904 | 0.05730 | 79.9 | 72.4 | 131 | | | |
| Surr: 4-Bromofluorobenzene | 0.84 | | 0.6345 | | 133 | 80 | 120 | | | S |

| | | | | | | | | | | |
|----------------------------|-----------------|-------------------------|-----------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | 1601161-001AMSD | SampType: MSD | | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | E-5 (R) | Batch ID: R31307 | | | RunNo: 31307 | | | | | |
| Prep Date: | | Analysis Date: 1/7/2016 | | | SeqNo: 958482 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.65 | 0.032 | 0.6345 | 0.004568 | 101 | 71.5 | 122 | 38.9 | 20 | R |
| Toluene | 0.71 | 0.032 | 0.6345 | 0.01929 | 109 | 71.2 | 123 | 38.4 | 20 | R |
| Ethylbenzene | 0.72 | 0.032 | 0.6345 | 0.009771 | 112 | 75.2 | 130 | 37.4 | 20 | R |
| Xylenes, Total | 2.3 | 0.063 | 1.904 | 0.05730 | 119 | 72.4 | 131 | 37.9 | 20 | R |
| Surr: 4-Bromofluorobenzene | 0.82 | | 0.6345 | | 130 | 80 | 120 | 0 | 0 | S |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1601161

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

1/7/2016 8:15:00 AM

Completed By: Lindsay Mangin

1/7/2016 8:33:13 AM

Reviewed By:

TO

01/07/15

Judy Hago

Judy Hago

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.8 | Good | Yes | | | |

Client: Rule Engineering LLC

Mailing Address: 501 Airport Dr, Suite 205
Farmington, NM 87401

Phone #: (505) 716-2787

Email or Fax#: hwood5@ruleengineering.com

NAQC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

| | | |
|---------------------------------------|--|-----------------------------|
| <input type="checkbox"/> Standard | <input checked="" type="checkbox"/> Rush | Same Day |
| Project Name: | | |
| WFX Chaco Corn #166H | | |
| Project #: | | |
| Project Manager: | | |
| Heather Woods | | |
| Sampler: Heather Woods, Justin Valdez | | |
| On Ice: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Sample Temperature: 1.8 | | |



Tel. 505-345-3975 Fax 505-345-4107

[illegible]

| | | | | | |
|--------|-------|------------------|--------------------------|----------|------|
| Date: | Time: | Relinquished by: | Received by: | Date | Time |
| 2/1/80 | 1804 | Heather M. Wood | Christ Wooten | 1/6/80 | 1804 |
| Date: | Time: | Relinquished by: | Received by: | Date | Time |
| 2/1/80 | 1847 | Christie Wheeler | Christ Wooten | 01/07/80 | 0815 |

Remarks: Direct Bill to WPX
Asstn: Debbie Watson
MCCIN add BTEX A 01107114

If necessary, 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.



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

March 24, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX NE Chaco Com #166H

OrderNo.: 1603A14

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 3/19/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1603A14

Date Reported: 3/24/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: WPX NE Chaco Com #166H

Collection Date: 3/18/2016 9:57:00 AM

Lab ID: 1603A14-001

Matrix: SOIL

Received Date: 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 1300 | 97 | | mg/Kg | 10 | 3/22/2016 6:29:26 PM | 24348 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 3/22/2016 6:29:26 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 260 | 23 | | mg/Kg | 5 | 3/23/2016 9:05:53 AM | 24355 |
| Surr: BFB | 490 | 66.2-112 | S | %Rec | 5 | 3/23/2016 9:05:53 AM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.12 | | mg/Kg | 5 | 3/23/2016 9:05:53 AM | 24355 |
| Toluene | ND | 0.23 | | mg/Kg | 5 | 3/23/2016 9:05:53 AM | 24355 |
| Ethylbenzene | 0.82 | 0.23 | | mg/Kg | 5 | 3/23/2016 9:05:53 AM | 24355 |
| Xylenes, Total | 4.9 | 0.47 | | mg/Kg | 5 | 3/23/2016 9:05:53 AM | 24355 |
| Surr: 4-Bromofluorobenzene | 135 | 80-120 | S | %Rec | 5 | 3/23/2016 9:05:53 AM | 24355 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |
| | | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603A14

Date Reported: 3/24/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: WPX NE Chaco Com #166H

Collection Date: 3/18/2016 10:01:00 AM

Lab ID: 1603A14-002

Matrix: SOIL

Received Date: 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 1300 | 99 | | mg/Kg | 10 | 3/22/2016 6:51:20 PM | 24348 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 3/22/2016 6:51:20 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 8.0 | 4.7 | | mg/Kg | 1 | 3/22/2016 8:53:24 PM | 24355 |
| Surr: BFB | 150 | 66.2-112 | S | %Rec | 1 | 3/22/2016 8:53:24 PM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.023 | | mg/Kg | 1 | 3/22/2016 8:53:24 PM | 24355 |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 8:53:24 PM | 24355 |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 8:53:24 PM | 24355 |
| Xylenes, Total | ND | 0.094 | | mg/Kg | 1 | 3/22/2016 8:53:24 PM | 24355 |
| Surr: 4-Bromofluorobenzene | 112 | 80-120 | | %Rec | 1 | 3/22/2016 8:53:24 PM | 24355 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |
| | | | | |

Analytical Report

Lab Order 1603A14

Date Reported: 3/24/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: WPX NE Chaco Com #166H

Collection Date: 3/18/2016 10:09:00 AM

Lab ID: 1603A14-003

Matrix: SOIL

Received Date: 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 700 | 100 | | mg/Kg | 10 | 3/22/2016 7:13:15 PM | 24348 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 3/22/2016 7:13:15 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 24 | 4.9 | | mg/Kg | 1 | 3/22/2016 9:17:03 PM | 24355 |
| Surr: BFB | 218 | 66.2-112 | S | %Rec | 1 | 3/22/2016 9:17:03 PM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 3/22/2016 9:17:03 PM | 24355 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 3/22/2016 9:17:03 PM | 24355 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 3/22/2016 9:17:03 PM | 24355 |
| Xylenes, Total | 0.23 | 0.099 | | mg/Kg | 1 | 3/22/2016 9:17:03 PM | 24355 |
| Surr: 4-Bromofluorobenzene | 118 | 80-120 | | %Rec | 1 | 3/22/2016 9:17:03 PM | 24355 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1603A14

Date Reported: 3/24/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: WPX NE Chaco Com #166H

Collection Date: 3/18/2016 10:16:00 AM

Lab ID: 1603A14-004

Matrix: SOIL

Received Date: 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 110 | 10 | | mg/Kg | 1 | 3/22/2016 7:35:05 PM | 24348 |
| Surr: DNOP | 85.5 | 70-130 | | %Rec | 1 | 3/22/2016 7:35:05 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 3/22/2016 9:40:41 PM | 24355 |
| Surr: BFB | 106 | 66.2-112 | | %Rec | 1 | 3/22/2016 9:40:41 PM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 3/22/2016 9:40:41 PM | 24355 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 3/22/2016 9:40:41 PM | 24355 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 3/22/2016 9:40:41 PM | 24355 |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 3/22/2016 9:40:41 PM | 24355 |
| Surr: 4-Bromofluorobenzene | 111 | 80-120 | | %Rec | 1 | 3/22/2016 9:40:41 PM | 24355 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1603A14**Date Reported: **3/24/2016****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-6**Project:** WPX NE Chaco Com #166H**Collection Date:** 3/18/2016 10:21:00 AM**Lab ID:** 1603A14-005**Matrix:** SOIL**Received Date:** 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 31 | 9.8 | | mg/Kg | 1 | 3/22/2016 7:56:59 PM | 24348 |
| Surr: DNOP | 84.4 | 70-130 | | %Rec | 1 | 3/22/2016 7:56:59 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.7 | | mg/Kg | 1 | 3/22/2016 10:04:17 PM | 24355 |
| Surr: BFB | 113 | 66.2-112 | S | %Rec | 1 | 3/22/2016 10:04:17 PM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 3/22/2016 10:04:17 PM | 24355 |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 10:04:17 PM | 24355 |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 10:04:17 PM | 24355 |
| Xylenes, Total | ND | 0.094 | | mg/Kg | 1 | 3/22/2016 10:04:17 PM | 24355 |
| Surr: 4-Bromofluorobenzene | 112 | 80-120 | | %Rec | 1 | 3/22/2016 10:04:17 PM | 24355 |

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

| | | | | |
|--------------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

Analytical ReportLab Order **1603A14**Date Reported: **3/24/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-7**Project:** WPX NE Chaco Com #166H**Collection Date:** 3/18/2016 10:23:00 AM**Lab ID:** 1603A14-006**Matrix:** SOIL**Received Date:** 3/19/2016 11:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|---------------|------------|-------------|--------------|-----------|-----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | ND | 9.8 | | mg/Kg | 1 | 3/22/2016 8:18:45 PM | 24348 |
| Surr: DNOP | 84.4 | 70-130 | | %Rec | 1 | 3/22/2016 8:18:45 PM | 24348 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.7 | | mg/Kg | 1 | 3/22/2016 10:27:52 PM | 24355 |
| Surr: BFB | 116 | 66.2-112 | S | %Rec | 1 | 3/22/2016 10:27:52 PM | 24355 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 3/22/2016 10:27:52 PM | 24355 |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 10:27:52 PM | 24355 |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 3/22/2016 10:27:52 PM | 24355 |
| Xylenes, Total | ND | 0.095 | | mg/Kg | 1 | 3/22/2016 10:27:52 PM | 24355 |
| Surr: 4-Bromofluorobenzene | 109 | 80-120 | | %Rec | 1 | 3/22/2016 10:27:52 PM | 24355 |

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

| | | | | | |
|--------------------|----|---|----|---|-------------|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank | Page 6 of 9 |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range | |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range | |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified | |
| | | | | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603A14

24-Mar-16

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | LCS-24347 | | SampType: LCS | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 24347 | | RunNo: 32965 | | | | | |
| Prep Date: | 3/21/2016 | | Analysis Date: 3/22/2016 | | SeqNo: 1011103 | | Units: %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 5.1 | | 5.000 | | 103 | 70 | 130 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | MB-24347 | | SampType: MBLK | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | | Batch ID: 24347 | | RunNo: 32965 | | | | | |
| Prep Date: | 3/21/2016 | | Analysis Date: 3/22/2016 | | SeqNo: 1011105 | | Units: %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 10 | | 10.00 | | 102 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | LCS-24348 | | SampType: LCS | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 24348 | | RunNo: 32965 | | | | | |
| Prep Date: | 3/21/2016 | | Analysis Date: 3/22/2016 | | SeqNo: 1011724 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 36 | 10 | 50.00 | 0 | 72.8 | 65.8 | 136 | | | |
| Surr: DNOP | 3.9 | | 5.000 | | 78.1 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | MB-24348 | | SampType: MBLK | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | | Batch ID: 24348 | | RunNo: 32965 | | | | | |
| Prep Date: | 3/21/2016 | | Analysis Date: 3/22/2016 | | SeqNo: 1011725 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 7.7 | | 10.00 | | 76.7 | 70 | 130 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603A14

24-Mar-16

Client: Rule Engineering LLC
Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|-------------------------------|-----------|--------------------------|-----------|-------------|--|----------|--------------|------|----------|------|
| Sample ID | MB-24355 | SampType: MBLK | | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: 24355 | | | RunNo: 32985 | | | | | |
| Prep Date: | 3/21/2016 | Analysis Date: 3/22/2016 | | | SeqNo: 1011660 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 1100 | | 1000 | | 106 | 66.2 | 112 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------|--------------------------|-----------|-------------|--|----------|--------------|------|----------|------|
| Sample ID | LCS-24355 | SampType: LCS | | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: 24355 | | | RunNo: 32985 | | | | | |
| Prep Date: | 3/21/2016 | Analysis Date: 3/22/2016 | | | SeqNo: 1011661 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 23 | 5.0 | 25.00 | 0 | 93.9 | 80 | 120 | | | |
| Surr: BFB | 1100 | | 1000 | | 110 | 66.2 | 112 | | | |

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603A14

24-Mar-16

Client: Rule Engineering LLC
Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-24355 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 24355 | RunNo: | 32985 | | | | | |
| Prep Date: | 3/21/2016 | Analysis Date: | 3/22/2016 | SeqNo: | 1011677 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 111 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-24355 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 24355 | RunNo: | 32985 | | | | | |
| Prep Date: | 3/21/2016 | Analysis Date: | 3/22/2016 | SeqNo: | 1011678 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.89 | 0.025 | 1.000 | 0 | 88.9 | 75.3 | 123 | | | |
| Toluene | 0.89 | 0.050 | 1.000 | 0 | 88.8 | 80 | 124 | | | |
| Ethylbenzene | 0.92 | 0.050 | 1.000 | 0 | 91.7 | 82.8 | 121 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 90.6 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 111 | 80 | 120 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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: RULE ENGINEERING LL

Work Order Number: 1603A14

RcptNo: 1

Received by/date:

Logged By: Joe Archuleta

3/19/2016 11:00:00 AM

Completed By: Joe Archuleta

3/19/2016 12:23:03 PM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: (<2 or >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 ☐
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:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.1 | Good | Yes | | | |

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr., Suite 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: WPX NE Chaco Com #10611

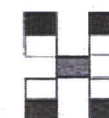
Project #: _____

Project Manager: Heather Woods

Sampler: H. Woods / J. Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 12/



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + MTBE + TPH (Gas only) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / 418.1) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | | | | | | Air Bubbles (Y or N) |
|---------|------|--------|-------------------|----------------------|-------------------|----------|------------------------------|------------------------------|-------------------------------|--------------------|--------------------|---------------------------|---------------|--|------------------------------|-------------|-----------------|--|--|--|--|--|----------------------|
| 3/18/16 | 0957 | Soil | SC-2 | (1) 4oz Glass | Cold | -001 | X | X | | | | | | | | | | | | | | | |
| 3/18/16 | 1001 | Soil | SC-3 | (1) 4oz Glass | Cold | -002 | X | X | | | | | | | | | | | | | | | |
| 3/18/16 | 1009 | Soil | SC-4 | (1) 4oz Glass | Cold | -003 | X | X | | | | | | | | | | | | | | | |
| 3/18/16 | 1016 | Soil | SC-5 | (1) 4oz Glass | Cold | -004 | X | X | | | | | | | | | | | | | | | |
| 3/18/16 | 1021 | Soil | SC-6 | (1) 4oz Glass | Cold | -005 | X | X | | | | | | | | | | | | | | | |
| 3/18/16 | 1023 | Soil | SC-7 | (1) 4oz Glass | Cold | -006 | X | X | | | | | | | | | | | | | | | |
| NEC HHS | | | | | | | | | | | | | | | | | | | | | | | |

Date: 3/18/16 Time: 1732 Relinquished by: Heather M. Woods

Date: 3/18/16 Time: 1804 Relinquished by: J. Valdez

Received by: Christine Walle Date: 3/18/16 Time: 1732

Received by: Donna Date: 03/19/16 Time: 1100

Remarks:
Direct Bill to WPX
Attn: Debbie Watson

If necessary, 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.



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

April 20, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: WPX NE Chaco Com #166H

OrderNo.: 1604491

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/12/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604491

Date Reported: 4/20/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: WPX NE Chaco Com #166H

Collection Date: 4/11/2016 9:50:00 AM

Lab ID: 1604491-001

Matrix: SOIL

Received Date: 4/12/2016 7:33:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|--------|------|-------|----|-----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 58 | 10 | | mg/Kg | 1 | 4/18/2016 11:01:25 AM | 24787 |
| Surr: DNOP | 75.7 | 70-130 | | %Rec | 1 | 4/18/2016 11:01:25 AM | 24787 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.6 | | mg/Kg | 1 | 4/13/2016 11:59:49 PM | 24755 |
| Surr: BFB | 109 | 80-120 | | %Rec | 1 | 4/13/2016 11:59:49 PM | 24755 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.023 | | mg/Kg | 1 | 4/13/2016 11:59:49 PM | 24755 |
| Toluene | ND | 0.046 | | mg/Kg | 1 | 4/13/2016 11:59:49 PM | 24755 |
| Ethylbenzene | ND | 0.046 | | mg/Kg | 1 | 4/13/2016 11:59:49 PM | 24755 |
| Xylenes, Total | ND | 0.092 | | mg/Kg | 1 | 4/13/2016 11:59:49 PM | 24755 |
| Surr: 4-Bromofluorobenzene | 115 | 80-120 | | %Rec | 1 | 4/13/2016 11:59:49 PM | 24755 |

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

| | | | | |
|--------------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

Analytical ReportLab Order **1604491**Date Reported: **4/20/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-3**Project:** WPX NE Chaco Com #166H**Collection Date:** 4/11/2016 10:00:00 AM**Lab ID:** 1604491-002**Matrix:** SOIL**Received Date:** 4/12/2016 7:33:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|--------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 34 | 9.7 | | mg/Kg | 1 | 4/18/2016 11:22:57 AM | 24787 |
| Surr: DNOP | 75.4 | 70-130 | | %Rec | 1 | 4/18/2016 11:22:57 AM | 24787 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.8 | | mg/Kg | 1 | 4/14/2016 12:23:19 AM | 24755 |
| Surr: BFB | 110 | 80-120 | | %Rec | 1 | 4/14/2016 12:23:19 AM | 24755 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 4/14/2016 12:23:19 AM | 24755 |
| Toluene | ND | 0.048 | | mg/Kg | 1 | 4/14/2016 12:23:19 AM | 24755 |
| Ethylbenzene | ND | 0.048 | | mg/Kg | 1 | 4/14/2016 12:23:19 AM | 24755 |
| Xylenes, Total | ND | 0.096 | | mg/Kg | 1 | 4/14/2016 12:23:19 AM | 24755 |
| Surr: 4-Bromofluorobenzene | 114 | 80-120 | | %Rec | 1 | 4/14/2016 12:23:19 AM | 24755 |

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

| | | | | | |
|--------------------|----|---|----|---|-------------|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank | Page 2 of 7 |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range | |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits | |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range | |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit | |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604491

Date Reported: 4/20/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: WPX NE Chaco Com #166H

Collection Date: 4/11/2016 10:06:00 AM

Lab ID: 1604491-003

Matrix: SOIL

Received Date: 4/12/2016 7:33:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|--------|------|-------|----|-----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 1100 | 100 | | mg/Kg | 10 | 4/18/2016 11:44:26 AM | 24787 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 4/18/2016 11:44:26 AM | 24787 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 43 | 4.8 | | mg/Kg | 1 | 4/14/2016 12:46:44 AM | 24755 |
| Surr: BFB | 182 | 80-120 | S | %Rec | 1 | 4/14/2016 12:46:44 AM | 24755 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 4/14/2016 12:46:44 AM | 24755 |
| Toluene | 0.049 | 0.048 | | mg/Kg | 1 | 4/14/2016 12:46:44 AM | 24755 |
| Ethylbenzene | 0.060 | 0.048 | | mg/Kg | 1 | 4/14/2016 12:46:44 AM | 24755 |
| Xylenes, Total | 0.46 | 0.097 | | mg/Kg | 1 | 4/14/2016 12:46:44 AM | 24755 |
| Surr: 4-Bromofluorobenzene | 128 | 80-120 | S | %Rec | 1 | 4/14/2016 12:46:44 AM | 24755 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1604491

Date Reported: 4/20/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: WPX NE Chaco Com #166H

Collection Date: 4/11/2016 10:15:00 AM

Lab ID: 1604491-004

Matrix: SOIL

Received Date: 4/12/2016 7:33:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|--------|------|-------|----|-----------------------|--------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: KJH |
| Diesel Range Organics (DRO) | 51 | 9.7 | | mg/Kg | 1 | 4/18/2016 12:06:00 PM | 24787 |
| Surr: DNOP | 76.6 | 70-130 | | %Rec | 1 | 4/18/2016 12:06:00 PM | 24787 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/14/2016 1:10:02 AM | 24755 |
| Surr: BFB | 109 | 80-120 | | %Rec | 1 | 4/14/2016 1:10:02 AM | 24755 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 4/14/2016 1:10:02 AM | 24755 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/14/2016 1:10:02 AM | 24755 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/14/2016 1:10:02 AM | 24755 |
| Xylenes, Total | ND | 0.097 | | mg/Kg | 1 | 4/14/2016 1:10:02 AM | 24755 |
| Surr: 4-Bromofluorobenzene | 117 | 80-120 | | %Rec | 1 | 4/14/2016 1:10:02 AM | 24755 |

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

| | | | | |
|-------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |
| | | | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604491

20-Apr-16

Client: Rule Engineering LLC
Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | LCS-24787 | SampType: | LCS | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: | 24787 | RunNo: | 33593 | | | | | |
| Prep Date: | 4/13/2016 | Analysis Date: | 4/18/2016 | SeqNo: | 1033599 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 50 | 10 | 50.00 | 0 | 99.9 | 65.8 | 136 | | | |
| Surr: DNOP | 4.3 | | 5.000 | | 86.8 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-24787 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 24787 | RunNo: | 33593 | | | | | |
| Prep Date: | 4/13/2016 | Analysis Date: | 4/18/2016 | SeqNo: | 1033601 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 9.5 | | 10.00 | | 95.1 | 70 | 130 | | | |

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604491

20-Apr-16

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|-------------------------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-24755 | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | 24755 | RunNo: | 33489 | | | | | |
| Prep Date: | 4/12/2016 | Analysis Date: | 4/13/2016 | SeqNo: | 1030728 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 1100 | | 1000 | | 106 | 80 | 120 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-24755 | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | 24755 | RunNo: | 33489 | | | | | |
| Prep Date: | 4/12/2016 | Analysis Date: | 4/13/2016 | SeqNo: | 1030729 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 22 | 5.0 | 25.00 | 0 | 87.1 | 80 | 120 | | | |
| Surr: BFB | 1200 | | 1000 | | 116 | 80 | 120 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604491

20-Apr-16

Client: Rule Engineering LLC

Project: WPX NE Chaco Com #166H

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-24755 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 24755 | RunNo: | 33489 | | | | | |
| Prep Date: | 4/12/2016 | Analysis Date: | 4/13/2016 | SeqNo: | 1030786 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 112 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-24755 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 24755 | RunNo: | 33489 | | | | | |
| Prep Date: | 4/12/2016 | Analysis Date: | 4/13/2016 | SeqNo: | 1030787 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 1.0 | 0.025 | 1.000 | 0 | 105 | 75.3 | 123 | | | |
| Toluene | 0.96 | 0.050 | 1.000 | 0 | 96.4 | 80 | 124 | | | |
| Ethylbenzene | 0.91 | 0.050 | 1.000 | 0 | 91.3 | 82.8 | 121 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 90.5 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.000 | | 121 | 80 | 120 | | | S |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1604491**

RcptNo: **1**

Received by/date: *L M*

04/12/16

Logged By: **Joe Archuleta**

4/12/2016 7:33:00 AM

Joe

Completed By: **Joe Archuleta**

4/12/2016 3:20:53 PM

Joe

Reviewed By: *JA/as*

04/12/16

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH:
(<2 or >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 ☐
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: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.1 | Good | Yes | | | |

Client: Auto Engineering LLC

ailing Address: 501 Airport Dr, Suite 205
Farmington, NM 87401

hone #: (505) 716-2787

mail or Fax#: hwoods@rullenengineering.com

A/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

ccreditation

☒ NELAP ☐ Other _____

1 EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

| | |
|---------------|--|
| Project Name: | |
|---------------|--|

WPX NE Chaco Corn #166H

Project #:

Project Manager:

H. Woods

Sampler: H. Woods / J. Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 12



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

| | | |
|-------|-------|------------------|
| Date: | Time: | Relinquished by: |
|-------|-------|------------------|

343 11/16 H. L. M. W.

| | | |
|--|------|------|
| Received by: | Date | Time |
|--|------|------|

74/12/16 0733

| | | |
|--------------|------|------|
| Received by: | Date | Time |
|--------------|------|------|

| |
|----------|
| Remarks: |
|----------|

Direct Bill to ~~Case~~ WPX
Attn: Debbie Watson



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

September 30, 2016

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NE Chaco Com 166H Pipeline Release

OrderNo.: 1609D96

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/24/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609D96

Date Reported: 9/30/2016

CLIENT: WPX Energy

Client Sample ID: SC-4

Project: NE Chaco Com 166H Pipeline Release

Collection Date: 9/23/2016 10:18:00 AM

Lab ID: 1609D96-001

Matrix: SOIL

Received Date: 9/24/2016 9:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015M/D: DIESEL RANGE ORGANICS | | | | | | | Analyst: TOM |
| Diesel Range Organics (DRO) | ND | 9.9 | | mg/Kg | 1 | 9/28/2016 12:25:08 PM | 27707 |
| Surr: DNOP | 93.4 | 70-130 | | %Rec | 1 | 9/28/2016 12:25:08 PM | 27707 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 9/29/2016 10:28:44 PM | 27690 |
| Surr: BFB | 80.7 | 68.3-144 | | %Rec | 1 | 9/29/2016 10:28:44 PM | 27690 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 9/29/2016 10:28:44 PM | 27690 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 9/29/2016 10:28:44 PM | 27690 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 9/29/2016 10:28:44 PM | 27690 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 9/29/2016 10:28:44 PM | 27690 |
| Surr: 4-Bromofluorobenzene | 93.2 | 80-120 | | %Rec | 1 | 9/29/2016 10:28:44 PM | 27690 |

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

| | | | | |
|--------------------|----|---|----|---|
| Qualifiers: | * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| | D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| | H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| | ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D96

30-Sep-16

Client: WPX Energy

Project: NE Chaco Com 166H Pipeline Release

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | LCS-27685 | | SampType: LCS | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 27685 | | RunNo: 37494 | | | | | |
| Prep Date: | 9/26/2016 | | Analysis Date: 9/27/2016 | | SeqNo: 1166208 | | Units: %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.5 | | 5.000 | | 90.9 | 70 | 130 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | MB-27685 | | SampType: MBLK | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | | Batch ID: 27685 | | RunNo: 37494 | | | | | |
| Prep Date: | 9/26/2016 | | Analysis Date: 9/27/2016 | | SeqNo: 1166209 | | Units: %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.0 | | 10.00 | | 90.1 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|----------------|-----------|-------------|---|----------|-----------|------|----------|------|
| Sample ID | MB-27707 | SampType: | MBLK | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | PBS | Batch ID: | 27707 | RunNo: | 37494 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/27/2016 | SeqNo: | 1166802 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 8.7 | | 10.00 | | 87.3 | 70 | 130 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | LCS-27707 | | SampType: LCS | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 27707 | | RunNo: 37494 | | | | | |
| Prep Date: | 9/26/2016 | | Analysis Date: 9/27/2016 | | SeqNo: 1166803 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 55 | 10 | 50.00 | 0 | 111 | 62.6 | 124 | | | |
| Surr: DNOP | 4.9 | | 5.000 | | 98.9 | 70 | 130 | | | |

| | | | | | | | | | | | |
|------------|-----------|-----|----------------|-------------|------|-----------|---|------|-------------|------|--|
| Sample ID | MB-27738 | | SampType: | MBLK | | TestCode: | EPA Method 8015M/D: Diesel Range Organics | | | | |
| Client ID: | PBS | | Batch ID: | 27738 | | RunNo: | 37494 | | | | |
| Prep Date: | 9/27/2016 | | Analysis Date: | 9/28/2016 | | SeqNo: | 1167146 | | Units: %Rec | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Surr: DNOP | 8.7 | | 10.00 | | 87.1 | 70 | 130 | | | | |

| | | | | | | | | | | |
|------------|-----------|--------------------------|-----------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | LCS-27738 | SampType: LCS | | | TestCode: EPA Method 8015M/D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | Batch ID: 27738 | | | RunNo: 37494 | | | | | |
| Prep Date: | 9/27/2016 | Analysis Date: 9/28/2016 | | | SeqNo: 1167147 | | Units: %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.6 | | 5.000 | | 91.2 | 70 | 130 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D96

30-Sep-16

Client: WPX Energy
Project: NE Chaco Com 166H Pipeline Release

| | | | | | | | | | | |
|------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-27704 | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | 27704 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167737 | Units: | %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 820 | | 1000 | | 81.6 | 68.3 | 144 | | | |

| | | | | | | | | | | |
|------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-27704 | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | 27704 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167738 | Units: | %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 930 | | 1000 | | 93.0 | 68.3 | 144 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-27690 | SampType: | MBLK | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: | 27690 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167758 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 830 | | 1000 | | 82.8 | 68.3 | 144 | | | |

| | | | | | | | | | | |
|-------------------------------|-----------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-27690 | SampType: | LCS | TestCode: | EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: | 27690 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167759 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 28 | 5.0 | 25.00 | 0 | 110 | 74.6 | 123 | | | |
| Surr: BFB | 910 | | 1000 | | 90.7 | 68.3 | 144 | | | |

Qualifiers:

| | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D96

30-Sep-16

Client: WPX Energy

Project: NE Chaco Com 166H Pipeline Release

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-27704 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 27704 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167885 | Units: | %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 0.95 | | 1.000 | | 95.3 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-27704 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 27704 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167903 | Units: | %Rec | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-27690 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 27690 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167923 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.97 | | 1.000 | | 97.0 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-27690 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 27690 | RunNo: | 37528 | | | | | |
| Prep Date: | 9/26/2016 | Analysis Date: | 9/28/2016 | SeqNo: | 1167924 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 0.94 | 0.025 | 1.000 | 0 | 94.5 | 75.3 | 123 | | | |
| Toluene | 0.98 | 0.050 | 1.000 | 0 | 98.1 | 80 | 124 | | | |
| Ethylbenzene | 1.0 | 0.050 | 1.000 | 0 | 102 | 82.8 | 121 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 99.9 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 101 | 80 | 120 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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: WPX ENERGY

Work Order Number: 1609D96

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

9/24/2016 9:30:00 AM

Completed By: Lindsay Mangin

9/25/2016 11:25:55 AM

Reviewed By:

A 09/26/16

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.6 | Good | Yes | | | |

Client: WPX Energy

Mailing Address: PO Box 640
Aztec, NM 87410

Phone #: 505-333-1880/505-386-9693

Email or Fax#: deborah.watson@wpxenergy.com

A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☒ NELAP ☐ Other _____

Method (Type) _____

☒ Standard ☐ Rush

Project Name: NE Chaco Com 166H Pipeline Release

Project #:

Project Manager: D. Watson

Sampler: D Watson

On Ice: ☐ Yes ☒ No

Sample Temperature: _____



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX (8021) | TPH (8015) GRO/DRO ONLY | Chlorides | | | | | | | | | | Air Bubbles (Y or N) |
|-----------|-------|--------|-------------------|----------------------|-------------------|----------|-------------|-------------------------|-----------|--|--|--|--|--|--|--|--|--|----------------------|
| 9/23/2016 | 10:18 | soil | SC-4 | 2-4 oz | cold | 1009D96 | X | X | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| Deborah Watson | Christina Walker | 9/23/16 | 1500 | |
| Relinquished by: | Received by: | Date | Time | |
| Christina Walker | [Signature] | 09/24/16 | 0930 | |

If necessary, 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.