<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District III
1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

				25	anta F	e, NM 8/5	05					
			Rele	ease Notific	catio	n and Co	rrective A	ction				
						OPERA	ГOR		☐ Initia	al Report	\boxtimes	Final Report
Name of Co	ompany W	PX Energy	Productio	on, LLC		Contact De	borah Watson					1
Address PO							No. 505-333-188	80				
-		NW Lybrool	k Unit 13			Facility Typ						
Surface Ow	ner State			Mineral C)wner	Indian Allott	ed		API No	. 30-045-3	5623	
				LOCA	OITA	N OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North	/South Line	Feet from the	East/V	Vest Line		Coun	ty
O	36	24N	08W	736		South	2531	E	East		San Ju	ian
				Latitude N3	6.2651	5 Longitude	e W107.63199					
Type of Rele	ase crude o	il and produc	ed water	NAI	UKE	Volume of	Release 10 bbl		Volume B	Recovered	6-8 hhl	
		sion hole in d					lour of Occurrenc	e		Hour of Dis		
			1			unknown			6/3/17			
Was Immedia Yes						If YES, To						
L ies L	NO M	Not Required					n (NMOCD) elds (NMOCD)					
						Brandon Fo	oley (NMSLO)					
By Whom? N Was a Water		1 40					our 6/5/17 email					
was a water	course Reac		Yes 🛛	No		II YES, VO	lume Impacting t	ne wate	rcourse.			
If a Watercou	ırse was Imj	pacted, Descri	ibe Fully.*									
N/A	se of Proble	em and Remed	dial Action	Takan *				Laborator Pa			-	
A hole was lo	ocated in an	underground	line. Hyd	rovac/spec truck	was cal	ed to the loca	tion to recover flu	uids. The	e location	Qas D hut-in.		
Describe Are	a Affected a	and Cleanup A	Action Tak	en.*					MAR 2	8 2018		
• Hv	drovac truck	spec truck w	ere called	to the location to	recove	r fluids.						
• The	e fluids rema	ained on locat	tion.							CT III		
hyd		xide application					emoval, soil shrent nt from the facilit					
-,-,-			includes a	nalytical laborate	ry repo	rts.						
				no further action								
regulations all public health	Il operators or the envir	are required to conment. The	o report an acceptanc	d/or file certain re e of a C-141 repo	elease nort by th	otifications are NMOCD ma	knowledge and un ad perform correct arked as "Final Re on that pose a thre	tive action	ons for releases not reli	eases which eve the ope	may er rator of	ndanger liability
							e the operator of r					
federal, state,		vs and/or regu			-							
	Dub	rah Wat	The				OIL CONS	SERV	ATION	DIVISIO	M	
Signature:								1	1/6			
Printed Name	e: Deborah	Watson				Approved by	Environmental Sp	pecialist	de	~	5	_
Title: Environ	nmental Spe	ecialist				Approval Dat	e:3/29/18	E	xpiration l	Date:		
E-mail Addre	ess: deborah	.watson@wpx	kenergy.co	m		Conditions of	Approval:			Attached		
Date: 03/28/2				Phone: 505-333-1	1880							
* Attach Addit	tional Shee	ets If Necess	ary			NCS	317156	194	19			



NW Lybrook Unit #133H Facility Release Report Section 36, Township 24N, Range 8W San Juan County, NM

March 28, 2018

1.0 Introduction

On June 3, 2017, fluid (produced water and crude oil) was discovered beneath the facility liner. The source of the release was from a hole located in the facility dump line at the NW Lybrook Unit #133H Facility, located in Section 36, Township 24N, Range 8W, San Juan County, New Mexico. The same day of discovery, the release source was stopped and cleanup initiated.

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: NW Lybrook Unit #133H

API #:30-045-35623

Site Location Description: Unit Letter O, Section 36, Township 24N, Range 8W

Release Latitude/Longitude: N36.26515, W107.63199

Land Jurisdiction: State of New Mexico

Agency Notification: New Mexico Oil Conservation Division (NMOCD) and State of New Mexico

(NMSLO)

Agency Notification Date(s): June 5, 2017
Release Contents: Crude oil and produced water
Volume Released: Estimated 10 barrels mixed fluids
Volume Recovered: Estimated 6-8 barrels mixed fluids

NMOCD Ranking: 20

3.0 Site Ranking and RRAL

In accordance with NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 20. Based on a ranking score of 20, recommended remedial action levels (RRAL) for remediated 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).

Depth to groundwater at the site is estimated to be 65 feet below ground surface (bgs) based on the March 2015 ground bed drilling log for this facility which recorded depth to water at 65 feet bgs.

A review was completed of the New Mexico Office of the State Engineer Online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 feet radius of the location.

Blanco Wash is located approximately 345 feet northeast of the location.

4.0 Field Activities

On June 3, 2017, crews began cleanup at the site. Early efforts including recovery of standing fluids. Cleanup at the site included facility dismantling, mechanical excavation, and onsite remediation of impacted soils (soil shredding) from within the impacted area. The excavation extent measured approximately 190 ft. (length) x 95 ft. (width) x 4-15 ft. (depth).

Once the facility was dismantled, and free-standing fluids recovered, Unlimited Construction started onsite remediation of impacted soil.

Onsite remediation included the following process:

- Impacted soil was stockpiled within the impacted area to prevent further contamination at the location.
- Impacted soil was processed through a shading bucket attached to an excavator which shredded
 the soil into uniform particle size and was then emptied into a grizzly shaker screen which further
 segregated soil.
- A hydrogen peroxide solution was applied to the soil on the conveyor belt with multiple spray nozzles.
- The treated soil was then stockpiled onsite and left to rest for a minimum of 24 hours to allow the hydrogen peroxide to continue oxidizing the hydrocarbons.
- Treated stock piles were sampled to show the hydrocarbons had been remediated from the soil.
- As the crew worked from SW to NE, the clean soil was returned to the excavation and compacted.

5.0 Soil Sampling

Soil sampling followed the procedure below:

- Confirmation soil samples were collected from the sidewalls and base of the excavation. The
 samples were approximately spaced at 30 ft centers along the sidewalls, excavation base samples
 were collected approximately one sample per 625 square feet. Note: WPX received a variance
 for sample SC-9 which was located along a sidewall below the capstone following installation of
 a test hole on N side of the capstone building to show migration of hydrocarbons did not go
 beyond the capstone building. (Excavation samples SC-1 through SC-24)
- Composite samples were collected from the first ten 100 cubic yard stockpiles. Following acceptable cleanup levels, composite samples were then collected from stockpiles which ranged in size between 300-500 cubic yards. (Treated stockpiles samples TSP-1 and TSP-26)
- Following remediation and facility rebuild, four samples were collected at the surface from the pad where the work was completed. (VZ-1 through VZ-4)
- Composite soil samples were collected in laboratory provided sample containers and submitted to Hall Environmental Analysis Laboratory for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021 and TPH (as motor oil/lube oil range organics) MRO/DRO/GRO per USEPA Method 8015.
- NMOCD and NMSLO were notified prior to each sampling event.

6.0 Analytical Results

Final laboratory analytical results for all soil confirmation samples reported benzene and BTEX concentrations below the NMOCD RRAL of 10 mg/kg and 50 mg/kg, respectively. Final soil confirmation samples reported TPH concentrations below the NMOCD RRAL of 100 mg/kg or a variance was approved by NMOCD.

Laboratory analytical results are summarized in Table 1 and 2. Analytical laboratory reports are attached.

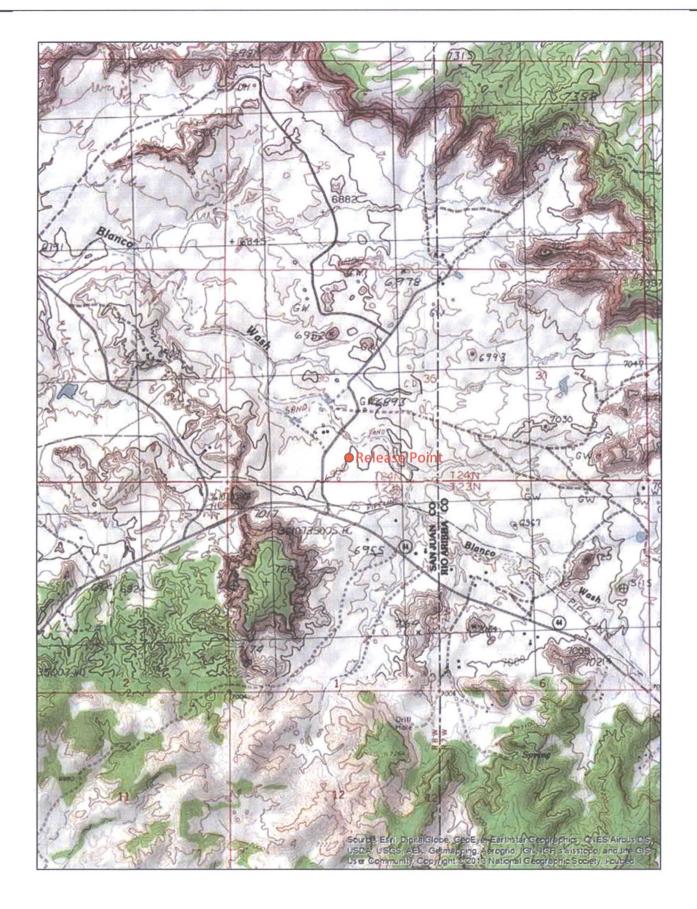


Figure 1. Topographic Map NW Lybrook Unit #133H Facility Section 36, Township 24N, Range 08W N36.26515, W107.63199 San Juan County, NM Scale 1:24,000

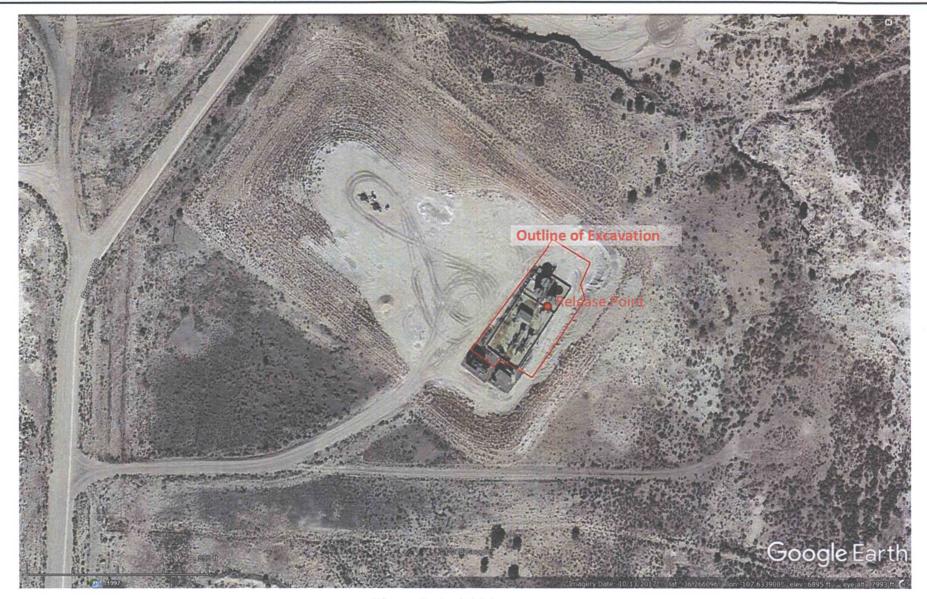


Figure 2. Aerial Map NW Lybrook Unit #1133H Facility Section 36, Township 24N, Range 08W N36.26515, W107.63199 San Juan County, NM

Table 1. Treated Stock Piles Final Confirmation Samples NW Lybrook Unit #133H Facility

					Total TPH					
		TPH GRO	TPH DRO	TPH MRO	(GRO+DRO)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
Sample ID	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD RRAL base	d on site ranking									
of 2	0				100 mg/kg	10 mg/kg	»	•		50 mg/kg
TSP-1R	6/29/17	<17	16	<45	16	<0.084	<0.17	<0.17	<0.34	<0.764
TSP-2R	6/29/17	<20	45	<50	45	<0.10	<0.20	<0.20	<0.40	<0.090
TSP-3R	6/29/17	<16	51	<48	51	<0.081	<0.16	<0.16	<0.32	<0.721
TSP-4R	6/29/17	<16	39	<47	39	<0.082	<0.16	<0.16	<0.33	<0.732
TSP-5	6/26/17	29	55	<49	64	<0.020	<0.039	<0.039	<0.079	<0.177
TSP-6	6/22/17	11	37	<46	48	<0.020	<0.040	<0.040	<0.080	<0.180
TSP-7	6/22/17	10	54	<49	64	<0.019	<0.037	<0.037	<0.075	<0.168
TSP-8	6/22/17	12	45	<49	57	<0.020	<0.041	<0.041	<0.082	<0.184
TSP-9	6/22/17	12	60	<50	72	<0.020	<0.040	<0.040	<0.080	<0.180
TSP-10	6/22/17	10	79	<51	89	<0.020	<0.039	<0.039	<0.079	<0.177
TSP-11R (A)	6/29/17	<20	64	<48	64	<0.099	<0.20	<0.20	<0.39	<0.889
TSP-11R (B)	6/29/17	<16	110	<49	110	<0.082	<0.16	<0.16	<0.33	<0.732
TSP-11R (C)	6/29/17	<20	82	<48	82	<0.098	<0.20	<0.20	<0.39	<0.888
TSP-11R (D)	6/29/17	<21	120	60	120	<0.10	<0.21	<0.21	<0.41	<0.930
TSP-11R (E)	6/29/17	<20	85	<50	85	<0.099	<0.20	<0.20	<0.40	<0.899
TSP-12	6/26/17	8.3	36	<46	44.3	<0.019	<0.039	<0.039	<0.077	<0.174
TSP-13	6/26/17	15	94	<49	109	<0.018	<0.035	<0.035	<0.070	<0.158
TSP-14	6/26/17	24	76	<48	100	<0.017	<0.034	<0.034	<0.067	<0.152
TSP-15	7/3/2017	<2.9	48	<50	48	<0.015	<0.029	<0.029	<0.058	<0.131
TSP-16	7/3/2017	<2.7	49	<48	49	<0.014	<0.027	<0.027	<0.055	<0.123
TSP-17	7/3/2017	<3.0	24	<48	24	<0.015	<0.030	<0.030	<0.059	<0.134
TSP-18	7/3/2017	<2.9	27	<49	27	<0.014	<0.029	<0.029	<0.058	<0.130
TSP-19	7/7/2017	<3.1	40	<47	40	<0.015	<0.031	<0.031	<0.061	<0.138
TSP-20	7/7/2017	<3.2	43	<48	43	<0.016	<0.032	<0.032	<0.065	<0.145
TSP-21	7/11/2017	<20	50	<50	50	<0.099	<0.20	<0.20	<0.40	<0.899
TSP-22	7/11/2017	<21	78	53	78	<0.10	<0.21	<0.21	<0.42	<0.940
TSP-23	7/11/2017	<22	53	<50	53	<0.11	<0.22	<0.22	<0.44	<0.990
TSP-24	7/14/2017	<6.8	47	<47	47	<0.034	<0.068	<0.068	<0.14	<0.310
TSP-25	7/14/2017	<9.0	90	<48	90	<0.045	<0.090	<0.090	<0.18	<0.405
TSP-26	7/14/2017	<7.9	91	48	91	<0.040	<0.079	<0.079	<0.16	<0.358

R=Retreated

Table 2. Excavation and Vadose Zone Final Confirmation Samples NW Lybrook Unit #133H Facility

					Total TPH		•			
		TPH GRO	TPH DRO	TPH MRO	(GRO+DRO)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
Sample ID	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD R	RAL based on	,	۰	*						
site rar	nking of 20		^		100 mg/kg	10 mg/kg	0		۰	50 mg/kg
SC-1	6/21/2017	<4.3	32	<49	32	<0.022	<0.043	<0.043	<0.087	<0.195
SC-2	6/21/2017	<21	21	<50	21	<0.10	<0.21	<0.21	<0.41	<0.930
SC-3	6/21/2017	<3.8	<9.6	<48	<61.4	<0.019	<0.038	<0.038	<0.075	<0.170
SC-4	6/21/2017	<20	19	<50	19	<0.010	<0.20	<0.20	<0.41	<0.820
SC-5	6/21/2017	<20	<9.7	<48	<77.7	<0.010	<0.20	<0.20	<0.41	<0.820
SC-6	6/21/2017	<3.9	<9.9	<49	<62.8	<0.020	<0.039	<0.039	<0.078	<0.176
SC-7	6/21/2017	<3.9	<9.5	<47	<60.4	<0.019	<0.039	<0.039	<0.077	<0.174
SC-8	6/21/2017	<3.7	<9.8	<49	<62.5	<0.019	<0.037	<0.037	<0.074	<0.167
SC-9	6/21/2017	<21	270	<460	270	<0.11	<0.21	<0.21	<0.42	<0.95
SC-10R	6/26/2017	<4.0	28	<49	28	<0.020	<0.040	<0.040	<0.079	<0.179
SC-11R	6/29/2017	<22	11	<50	11	<0.11	0.31	<0.22	<0.44	0.31
SC-12	6/22/2017	<4.2	<9.6	<48	<61.8	<0.021	<0.042	<0.042	<0.083	<0.188
SC-13R	6/29/2017	<20	<10	<50	<80	<0.098	<0.20	<0.20	<0.39	<0.888
SC-14	6/26/2017	<3.9	<9.5	<47	<60.4	<0.020	<0.039	<0.039	<0.079	<0.177
SC-15	6/29/2017	<20	<9.2	<46	<75.2	<0.098	<0.20	<0.20	<0.39	<0.888
SC-16	6/29/2017	<22	11	<46	11	<0.11	<0.22	<0.22	<0.44	<0.990
SC-17	6/29/2017	<21	<10	<50	<91	<0.10	<0.21	<0.21	<0.41	<0.930
SC-18	7/7/2017	<3.3	<9.3	<46	<58.6	<0.016	<0.033	<0.033	<0.066	<0.148
SC-19	7/7/2017	<3.2	<9.2	<46	<58.4	<0.016	<0.032	<0.032	<0.063	<0.143
SC-20	7/7/2017	<3.1	<9.7	<48	<60.8	<0.016	<0.031	<0.031	<0.063	<0.141
SC-21	7/7/2017	<3.2	<9.4	<47	<59.6	<0.016	<0.032	<0.032	<0.063	<0.143
SC-22	7/7/2017	<3.0	<9.2	<46	<58.2	<0.015	<0.030	<0.030	<0.061	<0.136
SC-23	7/7/2017	<3.1	<9.1	<46	<58.2	<0.015	<0.031	<0.031	<0.061	<0.138
SC-24	7/7/2017	<3.1	<9.2	<46	<58.3	<0.015	<0.031	<0.031	<0.061	<0.138
VZ-1	9/20/2017	<4.8	45	<48	45	<0.024	<0.048	<0.048	<0.096	<0.216
VZ-2	9/20/2017	<4.8	53	<48	53	<0.024	<0.048	<0.048	<0.096	<0.216
VZ-3	9/20/2017	<4.7	44	65	44	<0.023	<0.047	<0.047	<0.094	<0.211
VZ-4	9/20/2017	4.6	59	160	63.6	<0.023	<0.046	<0.046	<0.093	<0.208

R=Resample

From:

Smith, Cory, EMNRD

To: Subject: Watson, Debbie; Fields, Vanessa, EMNRD; Foley, Brandon M. [EXTERNAL] RE: Excavation preliminary results 133H

Date:

Monday, June 26, 2017 9:22:51 AM

CAUTION: This email was sent from an EXTERNAL source. Use caution when clicking links or opening attachments.

Debbie,

WPX may use the successfully Treated Stock piles that have passed sampling as backfill for areas of the excavation that have also passed sampling.

Please remember that the treated stock pile that are adjacent to a pile that has not been sample needs to leave 2' of buffer between the piles to ensure no un-sampled soils are returned to the excavation.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Watson, Debbie [mailto:Deborah.Watson@wpxenergy.com]

Sent: Monday, June 26, 2017 6:40 AM

To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Foley, Brandon M. <bfoley@slo.state.nm.us>

Subject: Excavation preliminary results 133H

The samples from the NW Lybrook #133H are as follows:

SC-10: East Extended Base – North Half SC-11: East Extended Base – South Half SC-12: East Extended Wall – North Wall SC-13: East Extended Wall – South Wall

From: Watson, Debbie

Sent: Friday, June 23, 2017 3:55 PM

To: 'Fields, Vanessa, EMNRD' < Vanessa. Fields@state.nm.us >; 'Smith, Cory, EMNRD'

<<u>Cory.Smith@state.nm.us</u>>; 'Foley, Brandon M.' <<u>bfoley@slo.state.nm.us</u>>

Subject: Excavation preliminary results 133H

Attached are the preliminary laboratory results from the excavation collected on June 22, 2017. Thank you.

Have a great weekend,

Debbie

Deborah Watson
Environmental Specialist
PO Box 640 | Aztec, NM 87410
office 505.333.1880 | cell 505.386.9693 | fax 505.333.1805
deborah.watson@wpxenergy.com



If you have received this message in error, please reply to advise the sender of the error and then immediately delete this message. Thank you.

From:

Smith, Cory, EMNRD

To:

Watson, Debbie

Cc: Subject: Fields, Vanessa, EMNRD
[EXTERNAL] RE: NW Lybrook Unit #133H Well Pad

Date:

Wednesday, June 28, 2017 1:54:17 PM

CAUTION: This email was sent from an EXTERNAL source. Use caution when clicking links or opening attachments.

Debbie,

OCD Approves WPX variance request to backfill area SC-9 and to use TSP-13 as backfill.

Please include this approval with your final C-141

OCD approval does not relieve WPX of any requirements imposed by other regulatory agencies.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Watson, Debbie [mailto:Deborah.Watson@wpxenergy.com]

Sent: Wednesday, June 28, 2017 11:17 AM

To: Fields, Vanessa, EMNRD < Vanessa. Fields@state.nm.us>; Smith, Cory, EMNRD

<Cory.Smith@state.nm.us>

Subject: NW Lybrook Unit #133H Well Pad

Vanessa and Cory,

WPX requests the following variances at the NW Lybrook Unit 133H Well Pad:

• WPX requests no further excavation along the west wall (south half/SC-9) beneath the secondary containment wall. A thin zone of contaminated soil (1-4 inches in thickness) extends beneath the remaining half wall and electrical panel. On June 26, 2017, a test hole was installed just to the west of the capstone building. The test hole was dug to a depth of 13 feet, exceeding the depth of the impacted layer. Cory Smith was onsite during test hole installation. No contaminated soil was

encountered, confirming that the impacted layer thins out and disappears beneath the electrical panel/capstone building.

WPX requests approval to backfill the cleared portion of the excavation with soils from TSP-13.
 The laboratory results reported the TPH concentration at 109 mg/kg.

Treated stockpiles TSP-1 through TSP-4 will be retreated today (6/28) and resampled later this week.

Thank you and have a great day!

Debbie

Deborah Watson
Environmental Specialist
PO Box 640 | Aztec, NM 87410
office 505.333.1880 | cell 505.386.9693 | fax 505.333.1805
deborah.watson@wpxenergy.com



If you have received this message in error, please reply to advise the sender of the error and then immediately delete this message. Thank you.

From:

Fields, Vanessa, EMNRD

To:

Watson, Debbie; Smith, Cory, EMNRD; Foley, Brandon M.

Subject:

[EXTERNAL] RE: NW Lybrook Unit #133H TSP-21, TSP-22, and TSP-23

Date: Thursday, July 13, 2017 8:33:03 AM

CAUTION: This email was sent from an EXTERNAL source. Use caution when clicking links or opening attachments.

Good morning Debbie,

Per our phone conversation your variance for TSP 22 has been granted, please provide this email in your final C-141.

Thank you,

Vanessa Fields

Environmental Specialist

Oil Conservation Division

Energy, Minerals, & Natural Resources

1000 Rio Brazos, Aztec, NM 87410

(505)334-6178 ext 119

Cell: (505) 419-0463

vanessa.fields@state.nm.us

From: Watson, Debbie [mailto:Deborah.Watson@wpxenergy.com]

Sent: Wednesday, July 12, 2017 1:13 PM

To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Foley, Brandon M. <bfoley@slo.state.nm.us>

Subject: NW Lybrook Unit #133H TSP-21, TSP-22, and TSP-23

Good Afternoon,

Please see attached laboratory results for stockpiles TSP-21, TSP-22, and TSP-23.

Results for the three stockpiles reported DRO + GRO concentrations below 100 mg/kg TPH. Stockpiles TSP-21 and TSP-23 reported MRO concentrations as non-detect. TSP-22 reported MRO at 53 mg/kg resulting in MRO+DRO+GRO at 131 mg/kg.

WPX requests approval to utilize TSP-22 as backfill without further treatment.

Thank you,

Debbie

From:

Fields, Vanessa, EMNRD

To:

Watson, Debbie; Smith, Cory, EMNRD; Foley, Brandon M.

Subject:

[EXTERNAL] RE: 133H Vadose Zone Sampling Results Updated Request

Date:

Wednesday, October 11, 2017 3:20:22 PM

CAUTION: This email was sent from an EXTERNAL source. Use caution when clicking links or opening attachments.

Good afternoon Debbie,

The OCD grants your variance request, please include this e-mail in your final C-141.

Thank you,

Vanessa Fields
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 119
Cell: (505) 419-0463

vanessa.fields@state.nm.us

From: Watson, Debbie [mailto:Deborah.Watson@wpxenergy.com]

Sent: Wednesday, October 11, 2017 11:16 AM

To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Foley, Brandon M. <bfoley@slo.state.nm.us>

Subject: 133H Vadose Zone Sampling Results Updated Request

Please see attached laboratory results for the NW Lybrook Unit #133 vadose sampling. Total TPH (DRO + GRO) concentrations were reported below the NMOCD RRAL of 100 mg/kg TPH (GRO+DRO) in all four samples. Samples VZ-3 and VZ-4 had reported MRO concentrations at 65 mg/kg and 160 mg/kg, respectively. When MRO is included in Total TPH (MRO+DRO+GRO), TPH concentrations in VZ-3 and VZ-4 exceed the TPH RRAL of 100 mg/kg. MRO is not a mobile contaminant and the low concentrations of MRO reported in samples VZ-3 and VZ-4 are not likely to have an impact to the environment or migrate off the location. WPX proposes to leave the areas of VZ-3 and VZ-4 alone, no further action recommended.

Please contact me with any questions.

Debbie

Deborah Watson Environmental Specialist PO Box 640 | Aztec, NM 87410 

If you have received this message in error, please reply to advise the sender of the error and then immediately delete this message. Thank you.



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

September 27, 2017

Debbie Watson WPX Energy 721 S Main Ave Aztec, NM 87410 TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Facility (PDP)

OrderNo.: 1709B65

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/21/2017 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

Lab Order 1709B65

Date Reported: 9/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: VZ-1

Project: NW Lybrook Unit #133H Facility (PDP)

Collection Date: 9/20/2017 10:22:00 AM

Lab ID:

1709B65-001

Matrix: SOIL

Received Date: 9/21/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analyst	: TOM
Diesel Range Organics (DRO)	45	9.7	mg/Kg	1	9/22/2017 8:50:21 PM	34002
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/22/2017 8:50:21 PM	34002
Surr: DNOP	75.2	70-130	%Rec	1	9/22/2017 8:50:21 PM	34002
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	9/22/2017 5:27:56 PM	33985
Surr: BFB	106	54-150	%Rec	1	9/22/2017 5:27:56 PM	33985
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	9/22/2017 5:27:56 PM	33985
Toluene	ND	0.048	mg/Kg	1	9/22/2017 5:27:56 PM	33985
Ethylbenzene	ND	0.048	mg/Kg	1	9/22/2017 5:27:56 PM	33985
Xylenes, Total	ND	0.096	mg/Kg	1	9/22/2017 5:27:56 PM	33985
Surr: 4-Bromofluorobenzene	121	66.6-132	%Rec	1	9/22/2017 5:27:56 PM	33985

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 7
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1709B65

Date Reported: 9/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: VZ-2

Project: NW Lybrook Unit #133H Facility (PDP)

Collection Date: 9/20/2017 10:14:00 AM

Lab ID: 1709B65-002

Matrix: SOIL

Received Date: 9/21/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analyst	: TOM
Diesel Range Organics (DRO)	53	9.6	mg/Kg	1	9/22/2017 9:19:01 PM	34002
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/22/2017 9:19:01 PM	34002
Surr: DNOP	83.5	70-130	%Rec	1	9/22/2017 9:19:01 PM	34002
EPA METHOD 8015D: GASOLINE RAN	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	9/22/2017 5:51:23 PM	33985
Surr: BFB	105	54-150	%Rec	1	9/22/2017 5:51:23 PM	33985
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	9/22/2017 5:51:23 PM	33985
Toluene	ND	0.048	mg/Kg	1	9/22/2017 5:51:23 PM	33985
Ethylbenzene	ND	0.048	mg/Kg	1	9/22/2017 5:51:23 PM	33985
Xylenes, Total	ND	0.096	mg/Kg	1	9/22/2017 5:51:23 PM	33985
Surr: 4-Bromofluorobenzene	123	66.6-132	%Rec	1	9/22/2017 5:51:23 PM	33985

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 7
- Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1709B65

Date Reported: 9/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: VZ-3

Project: NW Lybrook Unit #133H Facility (PDP) Collection Date: 9/20/2017 10:28:00 AM

Lab ID: 1709B65-003 Matrix: SOIL

Received Date: 9/21/2017 7:10:00 AM

Analyses	Result	PQL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analyst	: том
Diesel Range Organics (DRO)	44	10	mg/Kg	1	9/22/2017 9:47:57 PM	34002
Motor Oil Range Organics (MRO)	65	51	mg/Kg	1	9/22/2017 9:47:57 PM	34002
Surr: DNOP	75.8	70-130	%Rec	1	9/22/2017 9:47:57 PM	34002
EPA METHOD 8015D: GASOLINE RAN	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	9/22/2017 6:14:43 PM	33985
Surr: BFB	105	54-150	%Rec	1	9/22/2017 6:14:43 PM	33985
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.023	mg/Kg	1	9/22/2017 6:14:43 PM	33985
Toluene	ND	0.047	mg/Kg	1	9/22/2017 6:14:43 PM	33985
Ethylbenzene	ND	0.047	mg/Kg	1	9/22/2017 6:14:43 PM	33985
Xylenes, Total	ND	0.094	mg/Kg	1	9/22/2017 6:14:43 PM	33985
Surr: 4-Bromofluorobenzene	120	66.6-132	%Rec	1	9/22/2017 6:14:43 PM	33985

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 7 J
- Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1709B65

Date Reported: 9/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: VZ-4

Project:

NW Lybrook Unit #133H Facility (PDP)

Collection Date: 9/20/2017 10:35:00 AM

Lab ID:

1709B65-004

Matrix: SOIL

Received Date: 9/21/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	s			Analys	st: TOM
Diesel Range Organics (DRO)	59	9.7	mg/Kg	1	9/22/2017 10:16:35 P	M 34002
Motor Oil Range Organics (MRO)	160	48	mg/Kg	1	9/22/2017 10:16:35 P	M 34002
Surr: DNOP	83.7	70-130	%Rec	1	9/22/2017 10:16:35 PI	M 34002
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	9/22/2017 6:38:08 PM	33985
Surr: BFB	106	54-150	%Rec	1	9/22/2017 6:38:08 PM	33985
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.023	mg/Kg	1	9/22/2017 6:38:08 PM	33985
Toluene	ND	0.046	mg/Kg	1	9/22/2017 6:38:08 PM	33985
Ethylbenzene	ND	0.046	mg/Kg	1	9/22/2017 6:38:08 PM	33985
Xylenes, Total	ND	0.093	mg/Kg	1	9/22/2017 6:38:08 PM	33985
Surr: 4-Bromofluorobenzene	120	66.6-132	%Rec	1	9/22/2017 6:38:08 PM	33985

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 4 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

48

4.6

10

50.00

5.000

WO#:

1709B65

27-Sep-17

Client:

WPX Energy

Project:

Diesel Range Organics (DRO)

Surr: DNOP

NW Lybrook Unit #133H Facility (PDP)

Sample ID MB-34002	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch	1D: 34	002	F	RunNo: 4	5806				
Prep Date: 9/21/2017	Analysis D	ate: 9	/22/2017	S	SeqNo: 1	455637	Units: mg/h	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.4	70	130			
Sample ID LCS-34002	SampT	ype: LC	s	Test	Code: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS	Batch	1D: 34	002	R	tunNo: 4	5806				
Prep Date: 9/21/2017	Analysis D	ate: 9	22/2017	S	eqNo: 1	455751	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

95.6

91.1

73.2

70

114

130

- 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
- PQL Practical Quanitative Limit
- 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
- Page 5 of 7

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1709B65

27-Sep-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility (PDP)

Sample ID MB-33985

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: 33985

RunNo: 45817

Analyte

1100

Prep Date: 9/21/2017

Analysis Date: 9/22/2017

SPK value SPK Ref Val %REC LowLimit

SeqNo: 1457079

Units: mg/Kg

HighLimit

%RPD Quai

Gasoline Range Organics (GRO)

Result **PQL** ND 5.0

1000

25.00

1000

110

54

LowLimit

76.4

54

RPDLimit

Surr: BFB

Sample ID LCS-33985

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS

Batch ID: 33985

RunNo: 45817

Prep Date: 9/21/2017

Analysis Date: 9/22/2017

SeqNo: 1457080

Units: mg/Kg

150

150

Analyte Gasoline Range Organics (GRO)

Surr: BFB

Result **PQL** SPK value SPK Ref Val 28 5.0 1200

%REC 111 120

125

HighLimit %RPD **RPDLimit** Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Value above quantitation range Е

Analyte detected below quantitation limits

Sample pH Not In Range

Reporting Detection Limit RL

Sample container temperature is out of limit as specified

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1709B65

27-Sep-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility (PDP)

Sample ID MB-33985	Samp	Гуре: МІ	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batc	h ID: 33	985	F	RunNo: 4	5817				
Prep Date: 9/21/2017	Analysis [Date: 9/	22/2017	\$	SeqNo: 1	457105	Units: mg/K	ίg		
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	1.2		1.000		125	66.6	132			

Sample ID LCS-33985	SampT	ype: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	1D: 33	985	F	RunNo: 4	5817				
Prep Date: 9/21/2017	Analysis D	ate: 9/	22/2017	S	SeqNo: 1	457106	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	112	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.1	0.050	1.000	0	113	80	120			
Xylenes, Total	3.4	0.10	3.000	0	114	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		132	66.6	132			S

- 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
- PQL Practical Quanitative Limit
- 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
- Page 7 of 7

- 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 Num	ber: 1709B65		RcptNo:	1
Received By:	Anne Thome	9/21/2017 7:10:00	AM	Ann Am Ann Am	_	
Completed By:	Anne Thome	9/21/2017 8:02:39	AM	an Im	_	
Reviewed By:	ENH	9/21/17		2		
Chain of Cus	<u>stody</u>					
1. Custody sea	als intact on sample bo	ttles?	Yes 🗆	No 🗆	Not Present 🗹	
2. Is Chain of	Custody complete?		Yes 🗹	No 🗆	Not Present	
3. How was the	e sample delivered?		Courier			
<u>Log In</u>						
4. Was an atte	empt made to cool the	samples?	Yes 🗹	No 🗆	na 🗆	
5. Were all sar	mples received at a ten	nperature of >0° C to 6.0°C	Yes 🗹	No 🗆	, NA 🗆	
6. Sample(s) i	n proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient se	ample volume for indica	ited test(s)?	Yes 🗹	No 🗆		
8. Are samples	(except VOA and ON	G) properly preserved?	Yes 🔽	No 🗆	_	
9. Was presen	vative added to bottles?	?	Yes 🗌	No 🗹	NA 🗆	
10.VOA viats h	ave zaro headspace?		Yes 🔲	No 🗆	No VOA Vials 🗹	
11. Were any s	ample containers recei	ved broken?	Yes \square	No 🗹	# of preserved	
40.5			🗖	N- []	bottles checked for pH:	
	work match bottle label pancies on chain of cu		Yes 🗹	No ∐		>12 unless noted)
-	correctly identified on	- ·	Yes 🗹	No 🗆	Adjusted?	
14. Is it clear wh	nat analyses were requ	ested?	Yes 🗹	No 🗆		
	ding times able to be n customer for authorize		Yes 🗹	No 🗆	Checked by:	
Special Hand	lling (if applicable	. 1				
	otified of all discrepand	_	Yes 🗆	No 🗆	NA 🗹	
Person	n Notified:	Date	,	***************************************		
By Wh	nom:	Via:	☐ eMaii ☐ P	hone 🔲 Fax	☐ In Person	
Regan	ding:					
Client	Instructions:					
17. Additional n	ernarks:					
18. <u>Cooler Info</u>		tion Seal Intact Seal No	Seal Date	Signed By		
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	8260B (VO) 8270 (Semi	8081 Pestic	Anions (F,C	RCRA 8 Me	PAH's (831	EDB (Metho	TPH (Metho	TPH 8015B	BTEX + MT		HEAL NO.	Preservative Type	Container Type and #	Sample Request ID	Matrix	Time	Date
	-	-			_			_	_		1.1	erature:	Sample Temperature			(Type)	□ EDD (Type)
)Δ'	-	-		_	-	-		_	1	□ No	XQ Yes	On Ice:		0	1	O NECAT
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			O ₄)					_	_	43		ger:	Project Manag	email or Fax#. Chorah . Walser Ruspraneray . Carm Project Manager:	elorah. W	Fax#	email or
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07	505-345-4107	505-	Fax		3975	345-	Tel. 505-345-3975	el. (Project #:	NM 87410	X74C		
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	www.hallenvironmental.com	ment	viron	allen	w.h	WW				0	るまで	7 7 7					
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ENVIRONMENTAL	Š	115	2			I								Stony Account	01 000		

Air Bubbles (Y or N)

Chain-of-Custody Record

Turn-Around Time:



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

July 18, 2017

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133 H Facility

OrderNo.: 1707759

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/15/2017 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

Lab Order 1707759

Date Reported: 7/18/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-24

Project: NW Lybrook Unit #133 H Facility

Collection Date: 7/14/2017 9:30:00 AM

Lab ID: 1707759-001

Matrix: SOIL

Received Date: 7/15/2017 11:20:00 AM

Analyses	Result	PQL (Qual Uni	ts	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	s ·	-			Analyst	: MAB
Diesel Range Organics (DRO)	47	9.4	mg/	′Kg	1	7/17/2017 10:34:32 AM	32821
Motor Oil Range Organics (MRO)	ND	47	mg/	′Kg	1	7/17/2017 10:34:32 AM	32821
Surr: DNOP	96.4	70-130	%R	ec	1	7/17/2017 10:34:32 AM	32821
EPA METHOD 8015D: GASOLINE RAN	IGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	6.8	mg/	'Kg	2	7/17/2017 10:06:02 AM	G44257
Surr: BFB	105	54-150	%R	ec	2	7/17/2017 10:06:02 AM	G44257
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	0.034	mg/	ΊΚg	2	7/17/2017 10:06:02 AM	B44257
Toluene	ND	0.068	mg/	Кg	2	7/17/2017 10:06:02 AM	B44257
Ethylbenzene	ND	0.068	mg/	Кg	2	7/17/2017 10:06:02 AM	B44257
Xylenes, Total	ND	0.14	mg/	Кg	2	7/17/2017 10:06:02 AM	B44257
Surr: 4-Bromofluorobenzene	138	66.6-132	S %R	ec	2	7/17/2017 10:06:02 AM	B44257

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Н
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 7 J
- Sample pH Not In Range P
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707759

Date Reported: 7/18/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-25

Project:

NW Lybrook Unit #133 H Facility

Collection Date: 7/14/2017 9:36:00 AM

Lab ID:

1707759-002

Matrix: SOIL

Received Date: 7/15/2017 11:20:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	t: MAB
Diesel Range Organics (DRO)	90	9.6	mg/Kg	1	7/17/2017 11:02:36 AN	1 32821
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	7/17/2017 11:02:36 AM	32821
Surr: DNOP	98.9	70-130	%Rec	1	7/17/2017 11:02:36 AM	1 32821
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	9.0	mg/Kg	2	7/17/2017 10:30:12 AM	1 G44257
Surr: BFB	114	54-150	%Rec	2	7/17/2017 10:30:12 AN	1 G44257
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.045	mg/Kg	2	7/17/2017 10:30:12 AM	B44257
Toluene	ND	0.090	mg/Kg	2	7/17/2017 10:30:12 AM	B44257
Ethylbenzene	ND	0.090	mg/Kg	2	7/17/2017 10:30:12 AM	B44257
Xylenes, Total	ND	0.18	mg/Kg	2	7/17/2017 10:30:12 AM	B44257
Surr: 4-Bromofluorobenzene	142	66.6-132	S %Rec	2	7/17/2017 10:30:12 AM	B44257

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

- * 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
- PQL Practical Quanitative Limit
- 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 Page 2 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1707759

Date Reported: 7/18/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-26

Project:

NW Lybrook Unit #133 H Facility

Collection Date: 7/14/2017 9:43:00 AM

Lab ID:

1707759-003

Matrix: SOIL

Received Date: 7/15/2017 11:20:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	s			Analyst	MAB
Diesel Range Organics (DRO)	91	9.3	mg/Kg	1	7/17/2017 11:30:53 AM	32821
Motor Oil Range Organics (MRO)	48	47	mg/Kg	1	7/17/2017 11:30:53 AM	32821
Surr: DNOP	102	70-130	%Rec	1	7/17/2017 11:30:53 AM	32821
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	7.9	mg/Kg	2	7/17/2017 10:54:14 AM	G44257
Surr: BFB	106	54-150	%Rec	2	7/17/2017 10:54:14 AM	G44257
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.040	mg/Kg	2	7/17/2017 10:54:14 AM	B44257
Toluene	ND	0.079	mg/Kg	2	7/17/2017 10:54:14 AM	B44257
Ethylbenzene	ND	0.079	mg/Kg	2	7/17/2017 10:54:14 AM	B44257
Xylenes, Total	ND	0.16	mg/Kg	2	7/17/2017 10:54:14 AM	B44257
Surr: 4-Bromofluorobenzene	140	66.6-132	S %Rec	2	7/17/2017 10:54:14 AM	B44257

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707759

18-Jul-17

Client:

WPX Energy

Project:	NW Lybrook	Unit #13	3 H Fa	cility								
Sample ID LCS	-32821	SampType	: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCS	S	Batch ID:	32821	I	F	RunNo: 4						
Prep Date: 7/1	7/2017 Ana	lysis Date	7/17/	2017		SeqNo: 1	397568	Units: mg/K	(g			
Analyte	Re	esult P	QL S	PK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organic	s (DRO)	55	10	50.00	0	111	73.2	114				
Surr: DNOP		4.9		5.000		98.1	70	130				
Sample ID MB-3	32821	SampType	: MBLM	(Tes	tCode: E	PA Method	8015M/D: Die	esel Rang	e Organics		
Client ID: PBS		Batch ID:	32821	ľ	F	RunNo: 4	4251					
Prep Date: 7/17	7/2017 Ana	lysis Date:	7/17/	2017	\$	SeqNo: 1	397569	Units: mg/K	(g			
Analyte	Re	sult P	QL SI	PK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organic	s (DRO)	ND	10									
Motor Oil Range Orga	nics (MRO)	ND	50									
Surr: DNOP		9.4		10.00		94.4	70	130				
Sample ID 1707	759-001AMS	SampType	: MS		Tes	tCode: E	PA Method	8015M/D: Die	esel Range	Organics		
Client ID: TSP-	24	Batch ID:	32821		F	RunNo: 4	4251					
Prep Date: 7/17	7/2 017 Ana	lysis Date:	7/17/	2017	S	SeqNo: 1	397794	Units: mg/K	(g			
Analyte	Re	sult P	QL SI	PK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organic	s (DRO)	110	9.8	49.02	46.95	123	55.8	122			S	
Surr: DNOP		5.0		4.902	· · · · · · · · · · · · · · · · · · ·	103	70	130				
Sample ID 1707	759-001AMSD S	SampType	MSD		Tes	Code: E	PA Method	8015M/D: Die	sel Range	Organics		
Client ID: TSP-	24	Batch ID:	32821		F	RunNo: 4	4251					
Prep Date: 7/17	7/2 017 Ana	lysis Date:	7/17/	2017	S	SeqNo: 1	397795	Units: mg/K	g			
Analyte	Re	sult P	QL SF	PK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organic	(000)	100	9.2	45.96	46.95	122	55.8	122	4.06	20	s	

4.596

4.7

Qua	lifiers
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Sur: DNOP

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

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

102

70

130

0

0

J Analyte detected below quantitation limits

Page 4 of 7

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707759

18-Jul-17

Client:	WPX Ene	nem.										
Project:		ook Unit #	133 H	Facility								
	· · · · · · · · · · · · · · · · · · ·											
Sample ID		•	ype: Mi		TestCode: EPA Method 8015D: Gasoline Range							
Client ID:	PBS		ID: G 4			RunNo: 4			_			
Prep Date:		Analysis D	ate: 7	/17/2017	`	SeqNo: 1	398059	Units: mg/K	(g			
Analyte	0 : (000)	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rangi Surr: BFB	e Organics (GRO)	ND 1000	5.0	1000		101	54	150				
				<u> </u>			.					
	2.5UG GRO LCS		ype: LC					8015D: Gaso	ine Rang	e		
Client ID:	LCSS		ID: G4			RunNo: 4			_			
Prep Date:		Analysis D	ate: 7/	17/2017	(SeqNo: 1	398060	Units: mg/K	(g			
Analyte	(0.00)	Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Rang	e Organics (GRO)	26 1100	5.0	25.00 1000	0	102 113	76.4 54	125 150				
						•						
· ·	1707759-001AMS	•	ype: MS					8015D: Gaso	line Rang	0		
Client ID:	TSP-24		ID: G 4			RunNo: 4						
Prep Date:		Analysis D	ate: 7/	17/2017	5	SeqNo: 1	398061	Units: mg/K	(g			
Analyte		Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Surr: BFB	e Organics (GRO)	31 1600	6.8	34.25 1370	0	89.4 119	77.8 54	128 150				
Juli. BFB				1370		110	,	130				
Sample ID	1707759-001AMSE	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е		
Client ID:	TSP-24	Batch	ID: G4	14257	F	RunNo: 4	4257					
Prep Date:		Analysis D	ate: 7/	17/2017	\$	SeqNo: 1	398062	Units: mg/K	(g			
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
_	e Organics (GRO)	36	6.8	34.25	0	106	77.8	128	16.5	20		
Surr: BFB		1600		1370		119	54	150	0	0		
Sample ID	MB-32807	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е		
Client ID:	PBS	Batch	ID: 32	807	F	RunNo: 4	4257					
Prep Date:	7/14/2017	Analysis D	ate: 7/	17/2017	5	SeqNo: 1	398063	Units: %Red	С		ı	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: BFB		1000		1000		104	54	150	_			
Sample ID	LCS-32807	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	ө		
Client ID:	LCSS	Batch	ID: 32	807	F	RunNo: 4	4257					
Prep Date:	7/14/2017	Analysis D	ate: 7/	17/2017	5	SeqNo: 1	398064	Units: %Ree	С			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: BFB		1100		1000		112	54	150				

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
- PQL Practical Quanitative Limit
- 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

Page 5 of 7

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707759

18-Jul-17

WPX Energy

Project:

NW Lybrook Unit #133 H Facility

Sample ID RB	Samp	SampType: MBLK TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	•	h ID: B 4			RunNo: 4					
Prep Date:	Analysis Date: 7/17/2017			5	SeqNo: 1	398094	Units: mg/k	(g		
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	1.4		1.000		138	66.6	132			S

Sample ID 100NG BTEX L	CSB Samp1	ype: LC	S	TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batcl	1D: B4	4257	F	RunNo: 44257						
Prep Date:	Analysis D	ate: 7/	17/2017	5	SeqNo: 1	398100	Units: mg/h	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.0	0.025	1.000	0	104	80	120				
Toluene	1.1	0.050	1.000	0	107	80	120				
Ethylbenzene	1.1	0.050	1.000	0	108	80	120				
Xylenes, Total	3.3	0.10	3.000	0	109	80	120				
Surr: 4-Bromofluorobenzene	1.4		1.000		141	66.6	132			S	

Sample ID 1707759-002AM	S Samp	Type: MS	3	TestCode: EPA Method 8021B: Volatiles							
Client ID: TSP-25	Bate	ch ID: B4	4257	F							
Prep Date:	Analysis	Date: 7/	17/2017	SeqNo: 1398101 Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.9	0.045	1.797	0	106	80.9	132				
Toluene	1.9	0.090	1.797	0	108	79.8	136				
Ethylbenzene	2.0	0.090	1.797	0	109	79.4	140				
Xylenes, Total	5.9	0.18	5.391	0.04564	109	78.5	142				
Surr: 4-Bromofluorobenzene	2.6		1.797		146	66.6	132			S	

Sample ID 1707759-002AM	SD SampT	ype: MS	SD	Tes	TestCode: EPA Method 8021B: Volatiles							
Client ID: TSP-25	Batch	n ID: B4	4257	RunNo: 44257								
Prep Date:	8	SeqNo: 1	398102	Units: mg/h	(g							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit_	Qual		
Benzene	1.9	0.045	1.797	0	104	80.9	132	1.57	20			
Toluene	1.9	0.090	1.797	0	106	79.8	136	1.50	20			
Ethylbenzene	1.9	0.090	1.797	0	107	79.4	140	1.33	20			
Xylenes, Total	5.9	0.18	5.391	0.04564	108	78.5	142	1.59	20			
Surr: 4-Bromofluorobenzene	2.6		1.797		143	66.6	132	0	0	S		

- * Value exceèds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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
- Page 6 of 7

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707759

18-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133 H Facility

Sample ID MB-32807

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

66.6

Client ID:

Batch ID: 32807

PQL

RunNo: 44257

Prep Date: 7/14/2017

Analysis Date: 7/17/2017

SeqNo: 1398110

140

Units: %Rec

Analyte

Result 1.4

1.000

SPK value SPK Ref Val %REC LowLimit HighLimit

RPDLimit

Qual

S

Surr: 4-Bromofluorobenzene Sample ID LCS-32807

SampType: LCS

RunNo: 44257

TestCode: EPA Method 8021B: Volatiles

132

%RPD

Prep Date: 7/14/2017

Analyte

Client ID: LCSS

Batch ID: 32807 Analysis Date: 7/17/2017

PQL

SeqNo: 1398111

Units: %Rec

%RPD **RPDLimit**

1.4

137

SPK value SPK Ref Val %REC LowLimit

66.6

HighLimit

Qual

Surr: 4-Bromofluorobenzene

Result

1.000

132

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit PQL

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Value above quantitation range Ε

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

Page 7 of 7



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 ENER	GY	Work C	order Numb	er: 1707	759			RcptNo	: 1
Received By:	Andy Free	man	7/1 <i>5/</i> 2017	7 11:20:00	AM		<u>al</u>		-	
•	•			7 7:31:15 A			Andy Am.	N		
Completed By:	Anne Thor	1					Um ,	J	_	•
Reviewed By:	10	α>	UU	210						
Chain of Cus	stody									
1. Custody sea	als intact on sa	imple bottles	?		Yes		No		Not Present	
2. Is Chain of	Custody comp	lete?			Yes	lacksquare	· No		Not Present	
3. How was the	e sample deliv	ered?			Cou	<u>ter</u>		•		
<u>Log in</u>										
4. Was an atte	empt made to	cool the samp	oles?		Yes	\mathbf{Z}	No		na 🗆	
5. Were all sai	mplea received	d at a tempera	ature of >0° C t	to 6.0°C	Yes	☑	No		na 🗆	
6. Sample(s) i	n proper conta	iner(s)?			Yes	7	No		,	
7. Sufficient sa	imple volume i	for Indicated t	est(s)?		Yes	V	No			
8. Are samples	s (except VOA	and ONG) pr	operly preserve	ed?	Yes	\blacksquare	No			
9. Was presen	vative added to	bottles?			Yes		No	\blacksquare	NA 🗆	
10.VOA vials h	ave zero head	space?			Yes		No		No VOA Vials 🗹	
11. Were any s	ample contain	ers received b	oroken?		Yes		No	V		
								_	# of preserved bottles checked	
12. Does papen			A		Yes	\checkmark	No		for pH:	or >12 unless noted)
13. Are matrices	pancies on ch s correctly ider	-	·· =		Yes	$ \mathbf{Z} $	No	□·	Adjusted?	or > 12 unioss noteu)
14. Is it clear wit					Yes	<u></u>	No		-	
15. Were all hol					Yes	✓	No		Checked by:	
(If no, notify	customer for a	authorization.)	•							
Special Hand	lling (if app	licable)								
16. Was client n			vith this order?		Yes		No		na 🗹	
Person	n Notified:			Date						
By Wh	nom:			Via:	eMa	ail 🗆] Phone [Fax	☐ In Person	
Regan	ding:					-			de de comenda esta de la desenta de de la gr	
Client	Instructions:								and the second second second	
17. Additional n	emarks:									
18. <u>Cooler Info</u>	<u>rmation</u>									
Cooler N		Condition	Seal Intact	Seal No	Seal D	ate	Signed E	3у		
1	2.3	Good	Yes				1			

Standard Project Name: P	Chain-of-Custody Record				Turn-Around		4			A I			/ Y W										
Mailing Address: 72 S. M. M. B. Albuquerque, NM 87109	Client: WPX Energy Production					HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com																	
Property	Mailing Address: 721 S M & UA				K					·													
Phone #:505 3.3.3 1880 Martin Mart										Tel. 505-345-3975 Fax 505-345-4107													
### Project Manager DAIGO Package: DAIGO Pac	Phone #: 505 333 1880				NW Lybrook Unit #133H Facily									Ana	ysis	Req	uest						
7.14.17 930 Sp.1 TSP-24 1-102 gles Cold ZOLX X X 1.14.17 936 Sp.1 TSP-25 1-102 gles Cold ZOLX X X 7.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 1700 Sp.1 Time: Reliquished by: Received by: Date Time Thylo Color Time: Reliquished by: Regented by: Date Time Thylo Color Time: Reliquished by: Color Time: Reliquished	email or Fax#: Acborah water@upxenergy.com									(Ş	8				70	,,							
7.14.17 930 Sp.1 TSP-24 1-102 gles Cold ZOLX X X 1.14.17 936 Sp.1 TSP-25 1-102 gles Cold ZOLX X X 7.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 1700 Sp.1 Time: Reliquished by: Received by: Date Time Thylo Color Time: Reliquished by: Regented by: Date Time Thylo Color Time: Reliquished by: Color Time: Reliquished	QA/QC Package:								≱ (802	(Gas o				(SIMIS)	,PO4,S	PCB's							
7.14.17 930 Sp.1 TSP-24 1-102 gles Cold ZOLX X X 1.14.17 936 Sp.1 TSP-25 1-102 gles Cold ZOLX X X 7.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 943 Sp.1 TSP-26 1-142 cld ZOLX X X 1.14.17 1700 Sp.1 Time: Reliquished by: Received by: Date Time Thylo Color Time: Reliquished by: Regented by: Date Time Thylo Color Time: Reliquished by: Color Time: Reliquished					Sampler: D WAISON					푑	図	∓	$\exists $	[2	Įδ	808					=		
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14-17 943 SDI TSP-25 Horights old TOZ X X X X X X X X X			Matrix	Sample Request ID	Container Type and #	Preservative Type	1111		BTEX +	BTEX + MTB	TPH 8015B	TPH (Method	EDB (Method	RCRA 8 Meta	Anions (F,CI,N	8081 Pesticid	8260B (VOA)	8270 (Semi-V			Air Bubbles (Y or N)		
14-17 17-26 14-17 13-18 14-17 13-18 14-17 13-18 14-17 13-18 14-17 13-18 14-17 13-18 14-17 13-18 14-18 13-1	7.14.17	930	Soil	TSP-24	1-402 aless	Cold		201	X		X												
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	7/14/17	1700	Web	ul Witan	Photback 7/14/1 1700																		
if necessary, samples submitted to Hall Environmental may be subcontracted to other acceptation laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.			Mr	other Weller	Male of the state	maditar Tishamba	7/15/17		noccii	hilite	Anvo	h.cont	natad d	ata váli	na clos	rhe porte	ated c	n the c		l monort			



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

July 13, 2017

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410 TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H

OrderNo.: 1707485

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/12/2017 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

Lab Order 1707485

Date Reported: 7/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-21

Project: NW Lybrook Unit #133H

Collection Date: 7/11/2017 1:45:00 PM

Lab ID:

1707485-001

Matrix: SOIL

Received Date: 7/12/2017 7:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	: TOM
Diesel Range Organics (DRO)	50	10	mg/Kg	1	7/12/2017 11:06:54 AM	32759
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/12/2017 11:06:54 AM	32759
Surr: DNOP	101	70-130	%Rec	1	7/12/2017 11:06:54 AM	32759
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	7/12/2017 9:55:16 AM	32740
Surr: BFB	96.6	54-150	%Rec	5	7/12/2017 9:55:16 AM	32740
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.099	mg/Kg	5	7/12/2017 9:55:16 AM	32740
Toluene	ND	0.20	mg/Kg	5	7/12/2017 9:55:16 AM	32740
Ethylbenzene	ND	0.20	mg/Kg	5	7/12/2017 9:55:16 AM	32740
Xylenes, Total	ND	0.40	mg/Kg	5	7/12/2017 9:55:16 AM	32740
Surr: 4-Bromofluorobenzene	127	66.6-132	%Rec	5	7/12/2017 9:55:16 AM	32740

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 6 J
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707485

Date Reported: 7/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-22

Project: NW Lybrook Unit #133H

Collection Date: 7/11/2017 1:54:00 PM

Lab ID:

1707485-002

Matrix: SOIL

Received Date: 7/12/2017 7:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	t: TOM
Diesel Range Organics (DRO)	78	10	mg/Kg	1	7/12/2017 11:28:57 AM	A 32759
Motor Oil Range Organics (MRO)	53	50	mg/Kg	1	7/12/2017 11:28:57 AM	1 32759
Surr: DNOP	101	70-130	%Rec	1	7/12/2017 11:28:57 AM	A 32759
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	21	mg/Kg	5	7/12/2017 10:19:15 AM	1 32740
Surr: BFB	98.7	5 4 -150	%Rec	5	7/12/2017 10:19:15 AM	1 32740
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.10	mg/Kg	5	7/12/2017 10:19:15 AM	1 32740
Toluene	ND	0.21	mg/Kg	5	7/12/2017 10:19:15 AM	1 32740
Ethylbenzene	ND	0.21	mg/Kg	5	7/12/2017 10:19:15 AM	1 32740
Xylenes, Total	ND	0.42	mg/Kg	5	7/12/2017 10:19:15 AM	1 32740
Surr: 4-Bromofluorobenzene	129	66.6-132	%Rec	5	7/12/2017 10:19:15 AM	1 32740

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 6 J

- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707485

Date Reported: 7/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-23

Project: NW Lybrook Unit #133H

Collection Date: 7/11/2017 2:02:00 PM

Lab ID: 1707485-003

Matrix: SOIL

Received Date: 7/12/2017 7:30:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	t: TOM
Diesel Range Organics (DRO)	53	10	mg/K	g 1	7/12/2017 11:51:12 AN	1 32759
Motor Oil Range Organics (MRO)	ND	50	mg/K	g 1	7/12/2017 11:51:12 AN	1 32759
Surr: DNOP	103	70-130	%Re	1	7/12/2017 11:51:12 AM	1 32759
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	22	mg/K	g 5	7/12/2017 10:43:23 AM	1 32740
Surr: BFB	104	54-150	%Re	5	7/12/2017 10:43:23 AM	1 32740
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.11	mg/K	g 5	7/12/2017 10:43:23 AN	1 32740
Toluene	ND	0.22	mg/K	g 5	7/12/2017 10:43:23 AN	32740
Ethylbenzene	ND	0.22	mg/K	g 5	7/12/2017 10:43:23 AN	1 32740
Xylenes, Total	ND	0.44	mg/K	g 5	7/12/2017 10:43:23 AN	1 32740
Surr: 4-Bromofluorobenzene	137	66.6-132	S %Red	5	7/12/2017 10:43:23 AN	1 32740

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

- 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
- PQL Practical Quantitative Limit
 - 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 Page 3 of 6
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707485

13-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H

Sample ID MB-32740	Samp	ype: MI	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles	·s							
Client ID: PBS	Batci	n ID: 32	740	RunNo: 44163												
Prep Date: 7/11/2017	Analysis E)ate: 7/	12/2017	S	SeqNo: 1	394433	Units: mg/k	(g								
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	1.3		1.000		130	66.6	132									

Sample ID LCS-32740	, ,,			TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batc	h ID: 32	740	F	RunNo: 4	4163						
Prep Date: 7/11/2017	Analysis [)ate: 7/	12/2017	S	SeqNo: 1	394434	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	1.1	0.025	1.000	0	114	80	120			٠		
Toluene	1.2	0.050	1.000	0	115	80	120					
Ethylbenzene	1.2	0.050	1.000	0	117	80	120					
Xylenes, Total	3.6	0.10	3.000	0	119	80	120					
Surr: 4-Bromofluorobenzene	1.3		1.000		127	66.6	132			•		

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
- PQL Practical Quanitative Limit
- 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

Page 6 of 6

- 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

RcptNo: 1 **WPX ENERGY** Work Order Number: 1707485 Client Name: an Ilm Received By: 7/12/2017 7:30:00 AM Anne Thome an Il Completed By: **Anne Thome** 7/12/2017 8:01:34 AM Reviewed By: 8PC 07/12/17 Chain of Custody Yes 🗌 No 🗆 Not Present 1 Custody seals intact on sample bottles? Yes 🔽 No \square Not Present 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In No 🗆 NA 🔲 Yes V 4. Was an attempt made to cool the samples? Yes V No 🗆 NA 🗌 5. Were all samples received at a temperature of >0° C to 6.0°C No 🗆 Yes 🗹 6. Sample(s) In proper container(s)? No 🗀 Yes 🗸 7. Sufficient sample volume for indicated test(s)? No 🗆 Yes 🔽 8. Are samples (except VOA and ONG) properly preserved? No 🔽 NA 🗆 9. Was preservative added to bottles? Yes 🗌 No 🗆 No VOA Vials Yes 🗌 10. VOA vials have zero headspace? No 🗹 Yes 🗆 11. Were any sample containers received broken? # of preserved bottles checked for pH: Yes V No 🗆 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗆 Yes 🗹 13. Are matrices correctly identified on Chain of Custody? Yes 🗹 No 🔲 14. Is it clear what analyses were requested? No 🗆 Checked by: Yes 🗹 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes 🗌 16. Was client notified of all discrepancies with this order? No 🗆 NA 🗹 Person Notified: Date | By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp ℃ Condition Seal Intact | Seal No 1.0 Good Yes

	hain-	-of-Cu	stody Record	Turn-Around	Time:			4		ша		E 1	N 17.1	/T 6				T A 1	
Client:	WPX	Encu	34	☐ Standard Project Name	Rush	Same day				AN		YS	SIS	} L	AE	30 1		TAL	_
Mailing	Address	721 Azk	5 Main C NM	NW Lybs Project #:	pok lini	Same day				ww wkins -345-:	NE -	Alb	uque	erque	e, NN				
Phone a		5 33	3 1880										/sis		uest				
QA/QC F	ackage:	eneran.	waterne wpxenergy. cem. □ Level 4 (Full Validation)	b. Wa			TMB/s-(8024)	(Gas only	SO (MR)		SIMS)		PO4,SO4	PCB's					
Áccredi		□ Othe	r		Yes TV			+ TP +		18.1 5.4 5.4	.8270 8		O3,NO2	s / 8082		₹			g S
□ EDD Date	(Type) _	Matrix	Sample Request ID	ACTIVITY Container Type and # Medical	perature: Preservative Type		BTEX + M重BE	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GROY DROY (MRC)	TPH (Method 418.1) EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
7.11.17	1345	Soil	TSP-21	1-402	uld	700	X		X									П	
7.11.17	1354	Soi	TSP-22	1-402	ald	702	X		X	1	<u> </u>					\downarrow	\bot	$\bot \bot$	
7-11.17	1402	Soll	TSP-23	1-407	cold	703	У		X								 		
																	 		
																	<u></u>		$\frac{+}{+}$
Date:	Time: 1724 Time:	Relinquish	he Water	Received by:	Jan 1	Date Time - 7/1//	Rem	nark	s:		1							1 1	
		samples sub	mitted to Hall Environmental may be sub-	contracted to other a	ccredited laboratori		s possíl	oility.	Any sub	-contract	ted data	will be	e cle ar	ty nota	ited on	the an	alytical re	port.	



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

July 11, 2017

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

FAX

RE: WPX NW Lybrook 133H

OrderNo.: 1707324

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 7 sample(s) on 7/8/2017 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

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

WPX NW Lybrook 133H

Lab ID: 1707324-001

Project:

Client Sample ID: SC-18

Collection Date: 7/7/2017 1:16:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	7/10/2017 10:37:05 AM	/ R44092
Surr: BFB	87.3	70-130	%Rec	1	7/10/2017 10:37:05 A	/I R44092
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	7/10/2017 10:41:01 AM	A 32699
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/10/2017 10:41:01 AM	A 32699
Surr: DNOP	. 99.4	70-130	%Rec	1	7/10/2017 10:41:01 AM	A 32699
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	t: AG
Benzene	ND	0.016	mg/Kg	1	7/10/2017 10:37:05 AM	/ A44092
Toluene	ND	0.033	mg/Kg	1	7/10/2017 10:37:05 AM	/ A44092
Ethylbenzene	ND	0.033	mg/Kg	1	7/10/2017 10:37:05 AM	A44092
Xylenes, Total	ND	0.066	mg/Kg	1	7/10/2017 10:37:05 AM	A44092
Surr: 1,2-Dichloroethane-d4	95.1	70-130	%Rec	1	7/10/2017 10:37:05 AM	A44092
Surr: 4-Bromofluorobenzene	90.6	70-130	%Rec	1	7/10/2017 10:37:05 AM	A44092
Surr: Dibromofluoromethane	93.9	70-130	%Rec	1	7/10/2017 10:37:05 AM	A44092
Surr: Toluene-d8	102	70-130	%Rec	1	7/10/2017 10:37:05 AM	A44092

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 12 J
- P Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: WPX NW Lybrook 133H

Lab ID: 1707324-002 Client Sample ID: SC-19

Collection Date: 7/7/2017 1:15:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1	7/10/2017 11:06:16 AM	R44092
Surr: BFB	87.8	70-130	%Rec	1	7/10/2017 11:06:16 AM	R44092
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	7/10/2017 11:03:06 AM	32699
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/10/2017 11:03:06 AM	32699
Surr: DNOP	96.8	70-130	%Rec	1	7/10/2017 11:03:06 AM	32699
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	AG
Benzene	ND	0.016	mg/Kg	1	7/10/2017 11:06:16 AM	A44092
Toluene	ND	0.032	mg/Kg	1	7/10/2017 11:06:16 AM	A44092
Ethylbenzene	ND	0.032	mg/Kg	1	7/10/2017 11:06:16 AM	A44092
Xylenes, Total	ND	0.063	mg/Kg	1	7/10/2017 11:06:16 AM	A44092
Surr: 1,2-Dichloroethane-d4	95.4	70-130	%Rec	1	7/10/2017 11:06:16 AM	A44092
Surr: 4-Bromofluorobenzene	88.2	70-130	%Rec	1	7/10/2017 11:06:16 AM	A44092
Surr: Dibromofluoromethane	92.7	70-130	%Rec	1	7/10/2017 11:06:16 AM	A44092
Surr: Toluene-d8	102	70-130	%Rec	1	7/10/2017 11:06:16 AM	A44092

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page-2 of 12 J
- Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: WPX NW Lybrook 133H

Lab ID: 1707324-003 Client Sample ID: SC-20

Collection Date: 7/7/2017 1:20:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	7/10/2017 11:35:29 AN	1 R44092
Surr: BFB	91.3	70-130	%Rec	1	7/10/2017 11:35:29 AM	1 R44092
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analys	: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	7/10/2017 11:25:18 AM	32699
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	7/10/2017 11:25:18 AM	32699
Surr: DNOP	94.7	70-130	%Rec	_ 1	7/10/2017 11:25:18 AM	32699
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	: AG
Benzene	ND	0.016	mg/Kg	1	7/10/2017 11:35:29 AM	A44092
Toluene	ND	0.031	mg/Kg	1	7/10/2017 11:35:29 AM	A44092
Ethylbenzene	ND	0.031	mg/Kg	1	7/10/2017 11:35:29 AM	A44092
Xylenes, Total	ND	0.063	mg/Kg	1	7/10/2017 11:35:29 AM	A44092
Surr: 1,2-Dichloroethane-d4	98.4	70-130	%Rec	1	7/10/2017 11:35:29 AM	A44092
Surr: 4-Bromofluorobenzene	91.4	70-130	%Rec	1	7/10/2017 11:35:29 AM	A44092
Surr: Dibromofluoromethane	95.7	70-130	%Rec	1	7/10/2017 11:35:29 AM	A44092
Surr: Toluene-d8	102	70-130	%Rec	1	7/10/2017 11:35:29 AM	A44092

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

- 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
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 12 J
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Lab ID:

Client Sample ID: SC-21

Project: WPX NW Lybrook 133H 1707324-004

Collection Date: 7/7/2017 1:25:00 PM Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1	7/10/2017 12:05:09 PM	R44092
Surr: BFB	89.6	70-130	%Rec	1	7/10/2017 12:05:09 PM	R44092
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	7/10/2017 11:47:30 AM	32699
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	7/10/2017 11:47:30 AM	32699
Surr: DNOP	93.6	70-130	%Rec	1	7/10/2017 11:47:30 AM	32699
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: AG
Benzene	ND	0.016	mg/Kg	1	7/10/2017 12:05:09 PM	A44092
Toluene	ND	0.032	mg/Kg	1	7/10/2017 12:05:09 PM	A44092
Ethylbenzene	ND	0.032	mg/Kg	1	7/10/2017 12:05:09 PM	A44092
Xylenes, Total	ND	0.063	mg/Kg	1	7/10/2017 12:05:09 PM	A44092
Surr: 1,2-Dichloroethane-d4	96.3	70-130	%Rec	1	7/10/2017 12:05:09 PM	A44092
Surr: 4-Bromofluorobenzene	88.6	70-130	%Rec	1	7/10/2017 12:05:09 PM	A44092
Surr: Dibromofluoromethane	95.6	70-130	%Rec	1	7/10/2017 12:05:09 PM	A44092
Surr: Toluene-d8	107	70-130	%Rec	1	7/10/2017 12:05:09 PM	A44092

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 12 j
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Lab ID:

Project: WPX NW Lybrook 133H

1707324-005

Client Sample ID: SC-22

Collection Date: 7/7/2017 1:30:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	AG
Gasoline Range Organics (GRO)	ND	3.0	mg/Kg	1	7/10/2017 12:34:39 PM	R44092
Surr: BFB	89.6	70-130	%Rec	1	7/10/2017 12:34:39 PM	R44092
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	6			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	7/10/2017 12:09:43 PM	32699
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/10/2017 12:09:43 PM	32699
Surr: DNOP	97.8	70-130	%Rec	1	7/10/2017 12:09:43 PM	32699
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	AG
Benzene	ND	0.015	mg/Kg	1	7/10/2017 12:34:39 PM	A44092
Toluene	ND	0.030	mg/Kg	1	7/10/2017 12:34:39 PM	A44092
Ethylbenzene	ND	0.030	mg/Kg	1	7/10/2017 12:34:39 PM	A44092
Xylenes, Total	ND	0.061	mg/Kg	1	7/10/2017 12:34:39 PM	A44092
Surr: 1,2-Dichloroethane-d4	95.9	70-130	%Rec	1	7/10/2017 12:34:39 PM	A44092
Surr: 4-Bromofluorobenzene	91.4	70-130	%Rec	1	7/10/2017 12:34:39 PM	A44092
Surr: Dibromofluoromethane	95.1	70-130	%Rec	1	7/10/2017 12:34:39 PM	A44092
Surr: Toluene-d8	106	70-130	%Rec	1	7/10/2017 12:34:39 PM	A44092

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 12 j
- P Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

WPX NW Lybrook 133H Project:

Lab ID: 1707324-006 Client Sample ID: SC-23

Collection Date: 7/7/2017 1:32:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	7/10/2017 1:04:08 PM	R44092
Surr: BFB	91.3	70-130	%Rec	1	7/10/2017 1:04:08 PM	R44092
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	7/10/2017 12:31:52 PM	1 32699
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/10/2017 12:31:52 PM	1 32699
Surr: DNOP	97.0	70-130	%Rec	1	7/10/2017 12:31:52 PM	1 32699
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analys	t: AG
Benzene	ND	0.015	mg/Kg	1	7/10/2017 1:04:08 PM	A44092
Toluene	ND	0.031	mg/Kg	1	7/10/2017 1:04:08 PM	A44092
Ethylbenzene	ND	0.031	mg/Kg	1	7/10/2017 1:04:08 PM	A44092
Xylenes, Total	ND	0.061	mg/Kg	1	7/10/2017 1:04:08 PM	A44092
Surr: 1,2-Dichloroethane-d4	99.4	70-130	%Rec	1	7/10/2017 1:04:08 PM	A44092
Surr: 4-Bromofluorobenzene	91.3	70-130	%Rec	1	7/10/2017 1:04:08 PM	A44092
Surr: Dibromofluoromethane	96.5	70-130	%Rec	1	7/10/2017 1:04:08 PM	A44092
Surr: Toluene-d8	108	70-130	%Rec	1	7/10/2017 1:04:08 PM	A44092

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 12 J
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707324

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: WPX NW Lybrook 133H

Lab ID: 1707324-007

Client Sample ID: SC-24

Collection Date: 7/7/2017 1:35:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	7/10/2017 1:33:46 PM	R44092
Sum: BFB	91.1	70-130	%Rec	1	7/10/2017 1:33:46 PM	R44092
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	7/10/2017 12:54:05 PM	32699
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/10/2017 12:54:05 PM	32699
Surr: DNOP	97.1	70-130	%Rec	1	7/10/2017 12:54:05 PM	32699
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	AG
Benzene	ND	0.015	mg/Kg	1	7/10/2017 1:33:46 PM	A44092
Toluene	ND	0.031	mg/Kg	1	7/10/2017 1:33:46 PM	A44092
Ethylbenzene	ND	0.031	mg/Kg	1	7/10/2017 1:33:46 PM	A44092
Xylenes, Total	ND	0.061	mg/Kg	1	7/10/2017 1:33:46 PM	A44092
Surr: 1,2-Dichloroethane-d4	96.5	70-130	%Rec	1	7/10/2017 1:33:46 PM	A44092
Surr: 4-Bromofluorobenzene	94.2	70-130	%Rec	1	7/10/2017 1:33:46 PM	A44092
Surr: Dibromofluoromethane	96.8	70-130	%Rec	1	7/10/2017 1:33:46 PM	A44092
Surr: Toluene-d8	108	70-130	%Rec	1	7/10/2017 1:33:46 PM	A44092

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 7 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707324

11-Jul-17

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID LCS-32699	SampT	ype: LC	s	TestCode: EPA Method 8015M/D: Diesel Range Organics										
Client ID: LCSS	Batch	n ID: 320	699	F	RunNo: 4	4080								
Prep Date: 7/10/2017	Analysis D	ate: 7/	10/2017	S	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	96.3	73.2	114							
Surr: DNOP	4.3		5.000		85.8	70	130							
Sample ID MB-32699	SampT	vpe: ME	BLK	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics									

Client ID: PBS	Batch	ID: 32	699	F	4080	0										
Prep Date: 7/10/2017	Analysis D	ate: 7/	10/2017	8	SeqNo: 1	391038	Units: mg/K	ίg	Y							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Diesel Range Organics (DRO)	ND	10								•						
Motor Oil Range Organics (MRO)	ND	50														
Surr: DNOP	8.7		10.00		87.2	70	130									

Sample ID LCS-32681	SampTy	pe: LC	s	Tes	tCode: E	nod 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch I	ID: 32 0	681	F	RunNo: 4	4081								
Prep Date: 7/7/2017	Analysis Dat	te: 7/	10/2017	S	SeqNo: 1	391339	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Surr: DNOP	5.0		5,000		99.3	70	130							

Sample ID MB-3268	1	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015M/D: Diesel Range Organics							
Client ID: PBS		Batch	1D: 32	:681	F	RunNo: 4	4081								
Prep Date: 7/7/201 7	7	Analysis D	ate: 7	/10/2017	\$	SeqNo: 1	391340	Units: %Re	С						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Sur: DMOD		0.2		10.00		01.6	70	120							

Sample ID 1707	324-001AMS	SampT	ype: MS	3	Tes	PA Method	od 8015M/D: Diesel Range Organics									
Client ID: SC-1	8	Batch	iD: 32	699	R	RunNo: 4	4080									
Prep Date: 7/10	0/2017	Analysis D	ate: 7/	10/2017	S	SeqNo: 1	Units: mg/Kg									
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Diesel Range Organic	s (DRO)	46	9.4	46.82	2.245	94.5	55.8	122								
Surr: DNOP		4.0		4.682		84.7	70	130								

Sample ID 1707	7324-001AMSD	SampType	: MS	SD	Tes	PA Method	d 8015M/D: Diesel Range Organics									
Client ID: SC-1	18	Batch ID	320	699	F	RunNo: 4	4080									
Prep Date: 7/1	0/2017	Analysis Date	: 7 <i>f</i>	10/2017	8	SeqNo: 1	391378	Units: mg/Kg								
Analyte		Result P	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Diesel Range Organi	cs (DRO)	47	9.6	47.85	2.245	92.9	55.8	122	0.452	20	•					

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

PQL Practical Quanitative Limit

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

Page 8 of 12

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707324 11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID 1707324-001AMSD

SampType: MSD

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: SC-18

Batch ID: 32699

RunNo: 44080

Prep Date: 7/10/2017

Analysis Date: 7/10/2017

SeqNo: 1391378

Units: mg/Kg

Analyte

Result **PQL**

SPK value SPK Ref Val %REC

LowLimit HighLimit

%RPD **RPDLimit**

Qual

Surr: DNOP

4.0

4.785

82.6

70

130

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

Analyte detected below quantitation limits

Page 9 of 12

Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707324 *11-Jul-17*

Client:

Rule Engineering LLC

	gineering i W Lybrool									
Sample ID rb	Samp	Type: MI	BLK	Tes	stCode: E	PA Method	8260B: Vola	tiles Shor	t List	
Client ID: PBS	Bato	h ID: A4	14092	1	RunNo: 4	4092				
Prep Date:	Analysis I	Date: 7	/10/2017	;	SeqNo: 1	391308	Units: mg/l	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								
(ylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.5	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.3	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.8	70	130			
Surr: Toluene-d8	0.46		0.5000		92.7	70	130			
Sample ID 100ng Ics	Samp	Type: LC	s	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batc	h ID: A4	4092	F	RunNo: 4					
Prep Date:	Analysis (Date: 7/	10/2017	\$	SeqNo: 1	391309	Units: mg/h	(g		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.4	70	130			
oluene	0.91	0.050	1.000	0	91.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		95.0	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.0	70	130			
Surr: Dibromofluoromethane	0.46		0.5000		91.2	70	130			
Surr: Toluene-d8	0.44		0.5000		87.3	70	130			
Sample ID 1707324-002ams	Samp	Гуре: М	3	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: SC-19	Batc	h ID: A4	4092	F	RunNo: 4	4092				
Prep Date:	Analysis [Date: 7/	10/2017	5	SeqNo: 1	391833	Units: mg/k	(g		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.64	0.016	0.6317	0.007277	99.9	61.9	146			
oluene	0.67	0.032	0.6317	0.006917	105	70	130			
Surr: 1,2-Dichloroethane-d4	0.31		0.3158		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.30		0.3158		95.6	70	130			
Surr: Dibromofluoromethane	0.31		0.3158		98.3	70	130			
Surr: Toluene-d8	0.34		0.3158		107	70	130			
Sample ID 1707324-002ams	d Samp1	Гуре: МS	SD	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: SC-19		h ID: A4			RunNo: 4					
Prep Date:	Analysis [Date: 7/	10/2017	\$	SeqNo: 1	391834	Units: mg/K	(g		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.62	0.016	0.6317		97.5	61.9	146	2.41	20	
Toluene	0.65	0.032	0.6317	0.006917	101	70	130	3.51	20	

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
- PQL Practical Quanitative Limit
- 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

Page 10 of 12

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707324

11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID 1707324-002amsd	SampT	ype: M	SD	TestCode: EPA Method 8260B: Volatiles Short List										
Client ID: SC-19	Batch	ID: A 4	4092	F	RunNo: 4	4092								
Prep Date:	Analysis D	ate: 7	/10/2017	S	SeqNo: 1	391834	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Surr: 1,2-Dichloroethane-d4	0.31		0.3158		97.5	70	130	0	0					
Surr: 4-Bromofluorobenzene	0.30		0.3158		95.4	70	130	0	0					
Surr: Dibromofluoromethane	0.32		0.3158		100	70	130	0	0					
Surr: Toluene-d8	0.33		0.3158		105	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
- PQL Practical Quanitative Limit
- 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

Page 11 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707324

11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID rb

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: **PBS**

Batch ID: R44092

RunNo: 44092

Prep Date:

Analysis Date: 7/10/2017

SeqNo: 1391318

Units: mg/Kg

HighLimit

RPDLimit Qual

Analyte Gasoline Range Organics (GRO) Result PQL ND

480

%RPD

Surr: BFB

500.0

95.4

70

Sample ID 1707324-001ams

SampType: MS

TestCode: EPA Method 8015D Mod: Gasoline Range

SPK value SPK Ref Val %REC LowLimit

Client ID: SC-18

Batch ID: R44092

RunNo: 44092

130

Prep Date:

Sample ID 1707324-001amsd

Analysis Date: 7/10/2017

5.0

SeqNo: 1391830

Units: mg/Kg HighLimit

%RPD

Analyte Gasoline Range Organics (GRO) Result **PQL** 19 3.3

SPK value SPK Ref Val %REC 16.49 0.7322

SPK value SPK Ref Val

0.7322

16.49

329.8

111 91.1

LowLimit

63.2

70

128 130 **RPDLimit** Qual

Qual

Sun: BFB

300

329.8

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: SC-18 Prep Date:

Batch ID: R44092

SampType: MSD

RunNo: 44092

Units: mg/Kg

128

130

130

Analyte Gasoline Range Organics (GRO)

Surr: BFB

Analysis Date: 7/10/2017 Result PQL

19

290

SeqNo: 1391831 %REC

63.2

LowLimit

HighLimit

%RPD 2.60

RPDLimit 20

Sample ID 2.5ug gro Ics

SampType: LCS

3.3

RunNo: 44092

108

86.5

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Prep Date:

Batch ID: R44092 Analysis Date: 7/10/2017

PQL

5.0

SeqNo: 1391832

Units: mg/Kg

Analyte Gasoline Range Organics (GRO) Surr: BFB

Result 24 SPK value SPK Ref Val 25.00

%REC 96.4

HighLimit 70 130 %RPD **RPDLimit**

Qual

Page 12 of 12

460

500.0

91.7

70

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RLReporting Detection Limit 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	: 1707324		RcptNo:	1
Received By: Andy Freeman	7/8/2017 9:30:00 AM		andyl		
Completed By: Ashley Gallegos	7/9/2017 1:01:59 PM		A		
Reviewed By:	HI017				
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			
<u>Log In</u>					
4. Was an attempt made to cool the samples?	•	Yes 🗹	No 🗆	NA 🗆	
5. Were all samples received at a temperature	of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient sample volume for indicated test(s	3)?	Yes 🗹	No 🗆		
8. Are samples (except VOA and ONG) proper	ly 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 broke	en?	Yes 🗆	No 🗹	# of preserved	
42 December 1997		v	N= []	bottles checked for pH:	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No ∐		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:				***************************************	ī
17. Additional remarks:					<u>'</u>
18. Cooler Information Cooler No Temp °C Condition Second Second Second Temp °C Condition Temp °C Condition		Seal Date	Signed By		

Chain-of-Custody Record Client: Pule Engineering				Turn-Aro	und	Time:						AL		E	DI3/	/TE	20	BIB	AE	NT		
Client:	Rule	Engin	cering	☐ Stand		Rush	Same Day				F	N		Y	515	S L	A	30		TC		
Mailing	Address	501 F	Airport Dr. Ste 205	WPX	Ni	N Lybroo	K #133H		49	01 H								M 87	109			
Fa	mins	don N	M 87401	Project #	t:	O			Te	el. 50	5-34	45-3	975	F	ax	505-	345-	410	7			
Phone:	#: (565	File.	2787			·							Α	ınaly	ysis	Req	uest	t				E 11 12
email of	r Fax#: 🖟 Package:	Deboral	Ovulsentineuring con Watson Eury and wyxenersy. a	1				TWASTER (8021)	+ TPH (Gas only)	/ MRO)			S)		4,804)	PCB's						
☐ Stan			☐ Level 4 (Full Validation)		4.00	er Woods		A	(0)	RO			SIMS)		PC,	2 P(
Accredi □ NEL		□ Othe	r	On ice: Series I No					+ TPH	30 / D	18.1)	04.1)			3,NO	/ 808		(A)				(Z
□ EDD	(Type)			Sample Temperature: 3,/4(MTBE	(GF	4 p	g po	0 or	tals	N,	ides	8	9				3
Date	Time	Matrix	Sample Request ID	Container Type and # Preservative Type HEAL No.					BTEX + MT	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
7/4/17	1316	5011	5C-18	MLOH K	it skas	MeO# non	-001	×		X												
7/7/7	1315	50:1	5C-19	1			-003	X		×												
7/7/17	1320	Soil	sc-20				-003	X		Х												
7/7/17	1325	5001	SC- 21				-004	X		X												
7/7/17	1330	Soil	SC-22				-005	X		χ												
THA	1332	Soil	SC-23				-006	X		×												
7/7/17	1335	Soil	SC-24	工		1	-007	X		×										\perp	\perp	\perp
																				+	+	+
			IDES	HW																		士
Date:	Time:	Relinguish	ed by:	1 7/8/12 1992. 5					2. Direct Bill to WPX													
Date:	Time:	Relinquish	ed by:	Received b	by:		Date Time	A.	thn.	D.	ibk	sie	Wa	145	on							



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

July 11, 2017

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

FAX

RE: WPX NW Lybrook 133H

OrderNo.: 1707325

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/8/2017 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

andiel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1707325

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: TSP-19

Project:

WPX NW Lybrook 133H

Collection Date: 7/7/2017 2:15:00 PM

Lab ID:

1707325-001

Matrix: MEOH (SOIL)

Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL (Qual U	nits	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	s				Analyst:	том
Diesel Range Organics (DRO)	40	9.5	r	ng/Kg	1	7/10/2017 9:56:48 AM	32699
Motor Oil Range Organics (MRO)	ND	47	r	ng/Kg	1	7/10/2017 9:56:48 AM	32699
Surr: DNOP	102	70-130	9	%Rec	1	7/10/2017 9:56:48 AM	32699
EPA METHOD 8015D: GASOLINE RAN	IGE					Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.1	n	ng/Kg	1	7/10/2017 10:31:50 AM	32679
Surr: BFB	117	54-150	9	%Rec	1	7/10/2017 10:31:50 AM	32679
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.015	n	ng/Kg	1	7/10/2017 10:31:50 AM	32679
Toluene	ND	0.031	n	ng/Kg	1	7/10/2017 10:31:50 AM	32679
Ethylbenzene	ND	0.031	n	ng/Kg	1	7/10/2017 10:31:50 AM	32679
Xylenes, Total	ND	0.061	n	ng/Kg	1	7/10/2017 10:31:50 AM	32679
Surr: 4-Bromofluorobenzene	133	66.6-132	S 9	%Rec	1	7/10/2017 10:31:50 AM	32679

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 1 of 5
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1707325

Date Reported: 7/11/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: WPX NW Lybrook 133H

Lab ID: 1707325-002

Client Sample ID: TSP-20

Collection Date: 7/7/2017 2:24:00 PM

Matrix: MEOH (SOIL) Received Date: 7/8/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	t: TOM
Diesel Range Organics (DRO)	43	9.6	mg/Kg	1	7/10/2017 10:18:52 AM	32699
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	7/10/2017 10:18:52 AM	32699
Surr: DNOP	108	70-130	%Rec	1	7/10/2017 10:18:52 AM	1 32699
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1	7/10/2017 10:55:52 AM	1 32679
Surr: BFB	111	54-150	%Rec	1	7/10/2017 10:55:52 AN	32679
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.016	mg/Kg	1	7/10/2017 10:55:52 AM	32679
Toluene	ND	0.032	mg/Kg	1	7/10/2017 10:55:52 AM	32679
Ethylbenzene	ND	0.032	mg/Kg	1	7/10/2017 10:55:52 AM	32679
Xylenes, Total	ND	0.065	mg/Kg	1	7/10/2017 10:55:52 AM	32679
Surr: 4-Bromofluorobenzene	130	66.6-132	%Rec	1	7/10/2017 10:55:52 AM	32679

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

- * Value exceeds Maximum Contaminant Level.
- O Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 2 of 5
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - V Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707325

11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID LCS-32699	SampTy	/pe: LC	S	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch	ID: 326	699	F	RunNo: 4	4080					
Prep Date: 7/10/2017	Analysis Da	ate: 7/	10/2017	S	SeqNo: 1	391037	Units: mg/k	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	48	10	50.00	0	96.3	73.2	114				
Surr: DNOP	4.3										
Sample ID MB-32699	Test	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics					

Client ID: PBS	Batch	ID: 32	699	R	RunNo: 4	4080				
Prep Date: 7/10/2017	Analysis Date: 7/10/2017 SeqNo: 1391038						Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		87.2	70	130			

Sample ID LCS-32681	SampType: LCS	TestCode	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 32681	RunNo	44081								
Prep Date: 7/7/2017	Analysis Date: 7/10/20	7 SeqNo	1391339 Units: %I	Rec							
Analyte	Result PQL SPK	alue SPK Ref Val %RE	C LowLimit HighLimi	t %RPD RPDLimit	Qual						
Surr: DNOP	5.0	.000 99	.3 70 130)							

Sample ID	MB-32681	SampType	e: MBLK	Tes	tCode: E	PA Method	8015M/D: Diesel Range Organics						
Client ID:	PBS	Batch ID	32681	F	RunNo: 44081								
Prep Date:	7/7/2017	Analysis Date	: 7/10/2017	8	SeqNo: 1	391340	Units: %Red	;					
Analyte		Result F	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Surr: DNOP		9.2	10.00		91.6	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

PQL Practical Quanitative Limit

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

Page 3 of 5

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707325

11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID MB-32679

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

PBS

Batch ID: 32679

RunNo: 44090

PQL

5.0

Prep Date: 7/7/2017

Analysis Date: 7/10/2017

SeqNo: 1391590

Units: mg/Kg

150

HighLimit

Qual

Analyte

Gasoline Range Organics (GRO)

ND 990

Result

1000

SPK value SPK Ref Val

%REC 98.9

%RPD **RPDLimit**

Surr: BFB

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

54

54

Client ID: LCSS

Batch ID: 32679

RunNo: 44090

Prep Date: 7/7/2017

Sample ID LCS-32679

Analysis Date: 7/10/2017

SeqNo: 1391591

Units: mg/Kg

%RPD

Analyte Gasoline Range Organics (GRO) Result **PQL** 22

Result

Result

15

780

SPK value SPK Ref Val %REC

0

LowLimit 88.1 76.4

LowLimit

HighLimit 125

150

RPDLimit Qual

Surr: BFB

1100

5.0 25.00 1000

114

TestCode: EPA Method 8015D: Gasoline Range

Client ID: TSP-19 Prep Date:

Batch ID: 32679 Analysis Date: 7/10/2017

PQL

SampType: MS

RunNo: 44090

128

150

Units: mg/Kg

Analyte Gasoline Range Organics (GRO)

15.30 15 3.1 810 612.0

SPK value SPK Ref Val %REC LowLimit 77.8 100 133

SeqNo: 1391592

HighLimit

%RPD **RPDLimit**

Qual

Qual

Sample ID 1707325-001AMSD

Sample ID 1707325-001AMS

SampType: MSD

Analysis Date: 7/10/2017

TestCode: EPA Method 8015D: Gasoline Range

Client ID: TSP-19

Batch ID: 32679

RunNo: 44090

99.8

128

Units: mg/Kg

Analyte Gasoline Range Organics (GRO) Surr: BFB

Prep Date:

SPK value SPK Ref Val **PQL** 15.30 612.0

SeqNo: 1391593 %REC

LowLimit

77.8

54

HighLimit

128

150

0

%RPD **RPDLimit** 0.320 20

0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

₿ Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

Page 4 of 5

Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707325

11-Jul-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID MB-32679	Samp	Type: ME	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batcl	Batch ID: 32679 Analysis Date: 7/10/2017			RunNo: 4	4090				
Prep Date: 7/7/2017	Analysis D	Date: 7/	10/2017	8	SeqNo: 1	391609	Units: mg/K	(g		
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	1.3		1.000		131	66.6	132			

Sample ID LCS-32679	Samp	S	les	8021B: Vola	tiles					
Client ID: LCSS	Batci	h ID: 32	679	F	RunNo: 4	4090				
Prep Date: 7/7/2017	Analysis D	Date: 7/	10/2017	5	391610	Units: mg/h	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	115	80	120			
Toluene	1.2	0.050	1.000	0	116	80	120			
Ethylbenzene	1.2	0.050	1.000	0	116	80	120			
Xylenes, Total	3.6	0.10	3.000	0	119	80	120			
Surr: 4-Bromofluorobenzene	1.4		1.000		136	66.6	132			S

Sample ID 1707325-002AMS	Sam	pType: MS	S	TestCode: EPA Method 8021B: Volatiles												
Client ID: TSP-20	Ва	Batch ID: 32679 RunNo: 44090														
Prep Date:	p Date: Analysis Date: 7/10/2017				SeqNo: 1	391611	Units: mg/h									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Benzene	0.68	0.016	0.6456	0	105	80.9	132	•								
Toluene	0.69	0.032	0.6456	0	107	79.8	136									
Ethylbenzene	0.70	0.032	0.6456	0.006585	107	79.4	140									
Xylenes, Total	2.1	0.065	1.937	0	108	78.5	142									
Surr: 4-Bromofluorobenzene	0.90		0.6456		139	66.6	132			s						

Sample ID 1707325-002AM	SD Samp	Type: MS	SD	Tes	tCode: E	8021B: Vola	tiles						
Client ID: TSP-20	Bato	h ID: 32	679	F	RunNo: 4	4090							
Prep Date:	Analysis	Date: 7/	10/2017	8	SeqNo: 1	391612	Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	0.66	0.016	0.6456	0	103	80.9	132	2.37	20				
Toluene	0.68	0.032	0.6456	0	106	79.8	136	0.902	20				
Ethylbenzene	0.68	0.032	0.6456	0.006585	105	79.4	140	1.71	20				
Xylenes, Total	2.1	0.065	1.937	0	107	78.5	142	1.05	20				
Surr: 4-Bromofluorobenzene	0.86		0.6456		134	66.6	132	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
- PQL Practical Quanitative Limit
- 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

Page 5 of 5



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:	1707325		RcptNo:	1
Received By:	Andy Freeman Ashley Gallegos	7/8/2017 9:30:00 AM 7/9/2017 1:06:37 PM 3-{ 0 1-}		and A		•
Reviewed By:	/Le	710114				
Chain of Cu	stody					
1. Custody se	eals intact on sample bottles?		Yes 🔲	No 🗆	Not Present 🗹	
2. Is Chain of	Custody complete?		Yes 🗹	No 🗆	Not Present	
3. How was ti	ne sample delivered?		<u>Courier</u>			
Log In						
4. Was an at	tempt made to cool the sample:	37	Yes 🗹	No 🗆	NA 🗆	
5. Were all sa	amples received at a temperatu	re of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s)	in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient s	ample volume for indicated test	(8)?	Yes 🗹	No 🗆		
8. Are sample	s (except VOA and ONG) prop	erly preserved?	Yes 🗹	No 🗆		
9. Was prese	rvative added to bottles?		Yes 🗌	No 🗹	NA 🗆	
10.VOA vials	nave zero headspace?		Yes 🔲	No 🗆	No VOA Vials 🗹	
11, Were any	sample containers received bro	ken?	Yes	No 🗹	# of preserved	
	rwork match bottle labels?		Yes 🗹	No 🗆	bottles checked for pH:	
-	epancies on chain of custody)		🖼		(<2 o	>12 unless noted)
	es correctly identified on Chain	of Custody?	Yes 🗹	No ☐		· · · · · · · · · · · · · · · · · · ·
	that analyses were requested?		Yes ☑ Yes ☑	No 🔲 :	Checked by:	
	olding times able to be met? y customer for authorization.)		168 (12)	140 🗀	Checked by:	
Special Han	dling (if applicable)					
	notified of all discrepancies with	this order?	Yes 🗆	No 🗆	NA 🗹	
Perso	on Notified:	Date		Andread Albert Ch. Dilbert 18. Hills and the		
, By W	hom:	Via: [eMail [Phone 🔲 Fax	In Person	! ! !
Rega	rding:					t 1
Clien	t Instructions:		······································			! !
17. Additional	remarks:		·-· ·- · · ·	· ·		•
18. Cooler Int	ormation					
Cooler I			Seal Date	Signed By		
11	'3.1 Good Y	98				
-						

C	hain-	of-Cu	stody Record	Turn-Around	Time:							_								
Client:	Rule	Enaine	ering	数 Standard	X Rush	Same Pay			_									NT VTC		
				Project Name) ;						w.ha							116	/K	•
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				Project #:	porook #		1			wkins			-	-						
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				Project Mana		···		\$	ন	i		arian,		NGQ	ucs			7	7	
OA/QC I	Package:	Deborah	<u>Original meering. Com</u> Watson Ewpxenbygy.com	i iojectivana	ger.		21)	luo	MR				30,	3,0		.		İ	1	
℧ Stan			☐ Level 4 (Full Validation)	Heather	- Woods		8) 6	+ TPH (Gas only)	õ		IMS		O.	PC						
Accredi	tation		<u> </u>	Sampler: He	ather let	reds:	18	F	9	뒤	, 02		õ	082				İ		
O NEL		□ Othe	r				÷	+ T	원	ᇎ	1 82	άs	ő	s/8		Æ		İ		5
□ EDD	(Type)	<u></u>	<u>: : :</u>	Sample Tem	perature: 3	100	8	78E	<u></u>	g g	00	etal	Z	cide	(A)	Ϋ́				≿
	_			Container	Preservative	V 4	BTEX + (1)(2) + (1)(2) (8021)	BTEX + MTBE	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1) EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anians (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
Date	Time	Matrix	Sample Request ID	Type and #	Type and # Type HEAL No.			ă	H	I B	F.	ă	ions	<u>8</u>	60B	02				
1.1			_ · · · • · · ·	MOHER	MeOth	1707325		18	<u> </u>	<u> </u>	2	8	₹	8	82	82		\dashv	4	<u> </u>
1/17	1415	Soil	T5P-19	17402 GWD	Non	-001	×		X											Ш
7/7/17	1424	Soi I	TSP-20	7	7	-002	8		×											
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Date:	Tir:re:	Relinguish	l ed by:	Received by: Date Time R				Remarks: Direct Bill to wex Atta: Debbie Waison												
Date:	Heath U- Woods			1/m		- 7/8/17 1970	Dic	ect l	3:11	40 U	rX.									
Date:	Time:	Relinquish	ed by:	Received by: Date Time		A	in -	Det	bie	اعلا	50%	1								
	If necessary, samples submitted to Hall Environmental may be a		contracted to other a	ccredited laboratoric	ps. This serves as notice of this	s passi	tility. A	iny sub	-cortrac	ed data	will b	e claar	rly not	sted o	n the a	nalytic	al repor	t,		



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

July 03, 2017

Debbie Watson

WPX Energy 721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Well Pad

OrderNo.: 1706F84

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/30/2017 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

Analytical Report Lab Order 1706F84

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-11R (A)

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:33:00 PM

Lab ID: 17

1706F84-001

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 11:02:47 AM	A43928
Surr: BFB	100	70-130	%Rec	5	6/30/2017 11:02:47 Af	A A43928
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	;			Analys	t: JME
Diesel Range Organics (DRO)	64	9.7	mg/Kg	1	6/30/2017 10:30:58 AM	A 32581
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/30/2017 10:30:58 AM	A 32581
Surr: DNOP	91.9	70-130	%Rec	1	6/30/2017 10:30:58 AM	A 32581
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	t: AG
Benzene	ND	0.099	mg/Kg	5	6/30/2017 11:02:47 AM	/ R43928
Toluene	ND	0.20	mg/Kg	5	6/30/2017 11:02:47 AM	/ R43928
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 11:02:47 AM	/ R43928
Xylenes, Total	ND	0.39	mg/Kg	5	6/30/2017 11:02:47 AM	/ R43928
Surr: 1,2-Dichloroethane-d4	108	70-130	%Rec	5	6/30/2017 11:02:47 AM	/ R43928
Surr: 4-Bromofluorobenzene	106	70-130	%Rec	5	6/30/2017 11:02:47 AM	/ R43928
Surr: Dibromofluoromethane	106	70-130	%Rec	5	6/30/2017 11:02:47 AM	/ R43928
Surr: Toluene-d8	101	70-130	%Rec	5	6/30/2017 11:02:47 AM	/ R43928

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

- * 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
- PQL Practical Quanitative Limit
- 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 Page 1 of 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706F84

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Project: NW Lybrook Unit #133H Well Pad

Lab ID: 1706F84-002

Client Sample ID: TSP-11R (B)

Collection Date: 6/29/2017 1:38:00 PM Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analysi	: AG
Gasoline Range Organics (GRO)	ND	16	mg/Kg	5	6/30/2017 11:31:59 AM	A43928
Surr: BFB	99.2	70-130	%Rec	5	6/30/2017 11:31:59 AÑ	A43928
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	: JME
Diesel Range Organics (DRO)	110	9.5	mg/Kg	1	6/30/2017 10:59:14 AM	32581
Motor Oil Range Organics (MRO)	49	48	mg/Kg	1	6/30/2017 10:59:14 AM	32581
Surr: DNOP	94.1	70-130	%Rec	1	6/30/2017 10:59:14 AM	32581
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.082	mg/Kg	5	6/30/2017 11:31:59 AM	R43928
Toluene	ND	0.16	mg/Kg	5	6/30/2017 11:31:59 AM	R43928
Ethylbenzene	ND	0.16	mg/Kg	5	6/30/2017 11:31:59 AM	R43928
Xylenes, Total	ND	0.33	mg/Kg	5	6/30/2017 11:31:59 AM	R43928
Surr: 1,2-Dichloroethane-d4	107	70-130	%Rec	5	6/30/2017 11:31:59 AM	R43928
Surr: 4-Bromofluorobenzene	103	70-130	%Rec	5	6/30/2017 11:31:59 AM	R43928
Surr: Dibromofluoromethane	103	70-130	%Rec	5	6/30/2017 11:31:59 AM	R43928
Surr: Toluene-d8	100	70-130	%Rec	5	6/30/2017 11:31:59 AM	R43928

Matrix: SOIL

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

- * 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
- PQL Practical Quanitative Limit
- 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 Page 2 of 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706F84

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-11R (C)

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:41:00 PM

Lab ID:

1706F84-003

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	t: AG
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 12:01:15 PM	1 A43928
Surr: BFB	95.9	70-130	%Rec	5	6/30/2017 12:01:15 PN	1 A43928
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	;			Analys	t: JME
Diesel Range Organics (DRO)	82	9.5	mg/Kg	1	6/30/2017 11:27:16 AN	1 32581
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/30/2017 11:27:16 AN	1 32581
Surr: DNOP	95.1	70-130	%Rec	1	6/30/2017 11:27:16 AN	1 32581
EPA METHOD 8260B: VOLATILES SHORT LIST					Analys	t: AG
Benzene	ND	0.098	mg/Kg	5	6/30/2017 12:01:15 PM	1 R43928
Toluene	ND	0.20	mg/Kg	5	6/30/2017 12:01:15 PM	1 R43928
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 12:01:15 PM	1 R43928
Xylenes, Total	ND	0.39	mg/Kg	5	6/30/2017 12:01:15 PM	1 R43928
Surr: 1,2-Dichloroethane-d4	99.0	70-130	%Rec	5	6/30/2017 12:01:15 PM	1 R43928
Surr: 4-Bromofluorobenzene	103	70-130	%Rec	5	6/30/2017 12:01:15 PM	1 R43928
Surr: Dibromofluoromethane	102	70-130	%Rec	5	6/30/2017 12:01:15 PM	1 R43928
Surr: Toluene-d8	97.9	70-130	%Rec	5	6/30/2017 12:01:15 PM	R43928

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 9
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F84

'Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-11R (D)

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:44:00 PM

Lab ID: 1706F84-004 Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	t: AG
Gasoline Range Organics (GRO)	ND	21	mg/Kg	5	6/30/2017 12:30:32 PM	A43928
Surr: BFB	94.1	70-130	%Rec	5	6/30/2017 12:30:32 PM	A43928
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	;			Analys	t: JME
Diesel Range Organics (DRO)	120	9.9	mg/Kg	1	6/30/2017 11:55:17 AM	A 32581
Motor Oil Range Organics (MRO)	60	50	mg/Kg	1	6/30/2017 11:55:17 AM	A 32581
Surr: DNOP	94.9	70-130	%Rec	1	6/30/2017 11:55:17 AM	A 32581
EPA METHOD 8260B: VOLATILES SHORT LIST					Analys	t: AG
Benzene	ND	0.10	mg/Kg	5	6/30/2017 12:30:32 PM	N R43928
Toluene	ND	0.21	mg/Kg	5	6/30/2017 12:30:32 PM	/ R43928
Ethylbenzene	ND	0.21	mg/Kg	5	6/30/2017 12:30:32 PM	M R43928
Xylenes, Total	ND	0.41	mg/Kg	5	6/30/2017 12:30:32 PM	A R43928
Surr: 1,2-Dichloroethane-d4	110	70-130	%Rec	5	6/30/2017 12:30:32 PM	N R43928
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	5	6/30/2017 12:30:32 PM	R43928
Surr: Dibromofluoromethane	107	70-130	%Rec	5	6/30/2017 12:30:32 PM	1 R43928
Surr: Toluene-d8	99.7	70-130	%Rec	5	6/30/2017 12:30:32 PM	N R43928

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 9
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F84

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-11R (E)

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:48:00 PM

Lab ID:

1706F84-005

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	: AG
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 1:00:00 PM	A43928
Surr: BFB	98.0	70-130	%Rec	5	6/30/2017 1:00:00 PM	A43928
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analys	: JME
Diesel Range Organics (DRO)	85	10	mg/Kg	1	6/30/2017 12:23:23 PM	32581
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/30/2017 12:23:23 PM	32581
Surr: DNOP	96.4	70-130	%Rec	1	6/30/2017 12:23:23 PM	32581
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.099	mg/Kg	5	6/30/2017 1:00:00 PM	R43928
Toluene	ND	0.20	mg/Kg	5	6/30/2017 1:00:00 PM	R43928
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 1:00:00 PM	R43928
Xylenes, Total	ND	0.40	mg/Kg	5	6/30/2017 1:00:00 PM	R43928
Surr: 1,2-Dichloroethane-d4	111	70-130	%Rec	5	6/30/2017 1:00:00 PM	R43928
Surr: 4-Bromofluorobenzene	105	70-130	%Rec	5	6/30/2017 1:00:00 PM	R43928
Surr: Dibromofluoromethane	107	70-130	%Rec	5	6/30/2017 1:00:00 PM	R43928
Surr: Toluene-d8	100	70-130	%Rec	5	6/30/2017 1:00:00 PM	R43928

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 9
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F84

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID MB-32573

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS

Batch ID: 32573

RunNo: 43910

PQL

Prep Date: 6/30/2017 Analysis Date: 6/30/2017

SeqNo: 1384022

Units: %Rec

130

Qual

Analyte

Result

SPK value SPK Ref Val %REC LowLimit

HighLimit

RPDLimit

Surr: DNOP

9.8

10.00

97.8

%RPD

Sample ID LCS-32573 Client ID:

LCSS

SampType: LCS Batch ID: 32573

RunNo: 43910

Prep Date:

6/30/2017

Analysis Date: 6/30/2017 POI.

SeqNo: 1384023

Units: %Rec

TestCode: ÉPA Method 8015M/D: Diesel Range Organics

Qual

Surr: DNOP

Result

SPK value SPK Ref Val %REC

91.7

HighLimit 130 **RPDLimit**

Analyte

4.6

Result

11

5.000

70

%RPD

Client ID:

TestCode: EPA Method 8015M/D: Diesel Range Organics

Sample ID MB-32581

SampType: MBLK Batch ID: 32581

PQL

RunNo: 43908

LowLimit

LowLimit

70

Analyte

Prep Date: 6/30/2017

Analysis Date: 6/30/2017

SPK value SPK Ref Val

SeqNo: 1384676

Units: mg/Kg **HighLimit**

%RPD

RPDLimit Qual

Qual

Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) ND 10 ND 50

10.00

110

%REC

70

Surr: DNOP

Sample ID LCS-32581

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

130

Client ID:

LCSS

Batch ID: 32581

RunNo: 43908

Prep Date: Analyte

Analysis Date: 6/30/2017

PQL

SeqNo: 1384677

Units: mg/Kg

%RPD **RPDLimit**

Diesel Range Organics (DRO) Surr: DNOP

46 5.1

Result

SPK value SPK Ref Val 50.00

%REC

LowLimit 73.2 70 **HighLimit**

114 130

6/30/2017

10 91.6 5.000 101

Oualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Ε Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

Reporting Detection Limit Sample container temperature is out of limit as specified Page 6 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F84

03-Jul-17

Client:

WPX Energy

Sample ID rb	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: Vola	tiles Shor	t List	
Client ID: PBS	Batch	ID: R4	3928	F	RunNo: 4	3928				
Prep Date:	Analysis D	ate: 6/	30/2017	5	SeqNo: 1	384975	Units: mg/h	(g		
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: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.1	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			
Sample ID 100ng ics	SampT	ype: LC	s	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batch	ID: R4	3928	F	RunNo: 4	3928				
Prep Date:	Analysis D	ate: 6/	30/2017	8	SeqNo: 1	384976	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	70	130			
Toluene	1.0	0.050	1.000	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.9	70	130			
Sample ID 1706f84-001ams	SampT	ype: MS	;	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: TSP-11R (A)	Batch	ID: R4	3928	F	RunNo: 4	3928				
Prep Date:	Analysis D	ate: 6/	30/2017	8	SeqNo: 1	385532	Units: mg/k	(g		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.9	0.099	3.943	0	98.5	61.9	146			
Toluene	3.7	0.20	3.943	0	93.0	70	130			
Surr: 1,2-Dichloroethane-d4	2.0		1.972		102	70	130			
Surr: 4-Bromofluorobenzene	2.2		1.972		112	70	130			
Surr: Dibromofluoromethane	2.1		1.972		108	70	130			
Surr: Toluene-d8	2.0		1.972		99.4	70	130			
Sample ID 1706f84-001amsd	I SampT	ype: MS	SD	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: TSP-11R (A)		ID: R4		F	RunNo: 4	3928				
Prep Date:	Analysis D	ate: 6/	30/2017	S	SeqNo: 1	385533	Units: mg/F	(g		
Analyte	Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.8	0.099	3.943	0	97.0	61.9	146	1.47	20	
Toluene	3.4	0.20	3.943	0	86.3	70	130	7.43	20	

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Н

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank В

Value above quantitation range E

Analyte detected below quantitation limits

Page 7 of 9

Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F84

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID 1706f84-001amsd	SampT	ype: MS	SD	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: TSP-11R (A)	Batch	ID: R4	3928	F	RunNo: 4	3928				
Prep Date:	Analysis D	ate: 6/	30/2017	8	SeqNo: 1	385533	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	2.0		1.972		99.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.0		1.972		102	70	130	0	0	
Surr: Dibromofluoromethane	2.1		1.972		105	70	130	0	0	
Surr: Toluene-d8	1.9		1.972		97.6	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
- PQL Practical Quanitative Limit
- 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

Page 8 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F84

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID rb

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS

Batch ID: A43928

RunNo: 43928

Prep Date:

Surr: BFB

Analysis Date: 6/30/2017

PQL

5.0

SeqNo: 1384987

Units: mg/Kg

HighLimit

%RPD

Analyte Gasoline Range Organics (GRO) Result ND 520

500.0

SPK value SPK Ref Val %REC

104

70

LowLimit

RPDLimit

Qual

Sample ID 2.5ug gro Ics

SampType: LCS

TestCode: EPA Method 8015D Mod: Gasoline Range

130

Client ID: LCSS

Batch ID: A43928

RunNo: 43928

5.0

SeqNo: 1385531

Prep Date: Analyte

Analysis Date: 6/30/2017 SPK value SPK Ref Val Result **PQL**

%REC LowLimit Units: mg/Kg

%RPD **RPDLimit** HighLimit Qual

Gasoline Range Organics (GRO)

23

25.00 500.0 90.7 103

70 70

Surr: BFB

520

130

130

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit ND

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Ε Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Page 9 of 9



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	er: 1706F84		RcptNo:	1
Received By:	Anne Thome	6/30/2017 7:00:00 A	M	Aone Am Aone Am	_	
Completed By	: Anne Thome	6/30/2017 7:40:00 A	М	Om Stan	_	
Reviewed By:	as	613017				
Chain of Cu	ıstody					
1. Custody s	eals intact on sample bo	ttles?	Yes 🗌	No 🗆	Not Present 🗹	
2. Is Chain o	f Custody complete?		Yes 🗹	No 🗆	Not Present	
3. How was t	the sample delivered?		Courier			
<u>Log In</u>						
4. Was an a	ttempt made to cool the	samples?	Yes 🗹	No 🗆	NA 🗆	
5. Were all s	amples received at a ten	nperature of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s)	in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient s	sample volume for indica	ted test(s)?	Yes 🗹	No 🗆		
8. Are sample	es (except VOA and ON	G) properly preserved?	Yes 🗹	No 🗆		
9. Was prese	rvative added to bottles?	•	Yes 🗌	No 🗹	NA 🗆	
10.VOA vials	have zero headspace?		Yes 🗌	No 🗆	No VOA Viais 🗹	
11. Were any	sample containers recei	ved broken?	Yes	No 🗹	0.6	
				_	# of preserved bottles checked	
	rwork match bottle label		Yes 🗹	No ∐	for pH:	>12 unless noted)
-	repancles on chain of cu es correctly identified on	• •	Yes 🗹	No 🗆	Adjusted?	- 12 diaoso notody
	vhat analyses were requi	•	Yes 🗹	No 🗆	_	
15. Were all he	olding times able to be m	et?	Yes 🗹	No 🗆	Checked by:	
(If no, notil	y customer for authoriza	tion.)		'	,	· · · · · · · · · · · · · · · · · · ·
Special Han	dling (if applicable)				
16. Was client	notified of all discrepand	ies with this order?	Yes 🗆	No 🗆	NA 🗹	
Pers	on Notified:	Date				
By Vi	/hom:	Via:	eMail 🔲	Phone 🗌 Fax	In Person	
_	arding:					
Clien	t Instructions:					
17. Additional	remarks:					
18. <u>Cooler In</u>		tion Seal Intact Seal No	Seal Date	Signed By		
L			L			

C	hain-	of-Cu	stody Record	Turn-Around	Time:			= 1												
Client:	νPX	Energ	Y	☐ Standard Project Name		h Same day				A	NA	LY	ENV SI: oviron	5 L	AI	ВО				
Mailing	Address	\$ 72	1 S Main	NW Ly	brook U	nit #1331 Well Pad		490)1 H	awkin							109			
			-NM 87410	Project #:			٦			5-345			Fax							
Phone #	#: 505	333	0881									Ana	lysis							
email or	Fax#: ¿	dorah-1	ngsombourdh.com	Project Mana	ger:			nly)					70						\top	
QA/QC F	³ ackage:		☐ Level 4 (Full Validation)	D Wat	am		(8021)	TPH (Gas only)				SIMS)	PO4,S(PCB's						
Accredi				Sampler:				표	図	=	- B	e l	Š	8		1		ł		3
O NEL		□ Othe	РГ					+	(중)	418.	504.1)	۔ ال	္ကုိ	8/8		ફ				5
□ EDD	(Type)_		<u> </u>	Sample Temp	perature:			18	¥1	ğ	١١٥	5 5 5		흥	₹	}				\ <u>\</u>
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservativ Type	EAL No.	BTEX + ta	BTEX + MTBE	TPH 8015B(GROWDROWNRO)	TPH (Method 418.1)	EDB (Method	PAH's (8310 or 8270 PCPA 9 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB'	8260B (VOA)	8270 (Semi-VOA)	į			Air Bubbles (Y or N)
6.29.17	1333	Soil	TSP-IIR CA)	1-402 dass	cold	اص	X		Ŋ											
		arl	TSP-11R (B)	1-407 des	cold	707	X		λ											
6.29.17	1341	8nf	TSP-11R (C)	1-402 am	cold	703	X		χ											
29.17	1344	8rl	JSP-IIR (B)	1-402den	cold	704	X		γ										\prod	
6.29.11	1348	8nl	TSP-11R (E)	1-402 day	celd	-205	<u>X</u>		X	+	\perp		+				\vdash	\dashv	+	\dashv
<u> </u>							上				1							\dashv	#	$\frac{1}{2}$
				-			╁	\vdash		+	+		+-	-	-		┢╌╢	\dashv	+	+
				-			 				\dagger	\top	+	-	\vdash			\dashv	十	\dashv
							1				\uparrow	十	+	† · · ·				十	十	\dashv
•											\top						П	寸	\dashv	\top
Date:	Time:	Relinquish Relinquish	of Witan	Received by:		Date Time	Rer	narks	\ S:			1	1				!			
Upples "	1841	<u> </u>	M! Walt	contracted to other ex	mm /	100/30/17 0700	is once	ibility 4		ib-contr	mterl r	fata will	ha des	rtv net	ated o	n the s		al reno		



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

July 03, 2017

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Well Pad

OrderNo.: 1706F83

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/30/2017 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

andiel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1706F83

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: SC-11R

Project:

NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 2:05:00 PM

Lab ID:

1706F83-001

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN-	GE ORGANIC	S			Analys	t: JME
Diesel Range Organics (DRO)	11	10	mg/Kg	1	6/30/2017 11:44:54 AM	A 32581
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/30/2017 11:44:54 AM	1 32581
Surr: DNOP	105	70-130	%Rec	1	6/30/2017 11:44:54 AN	1 32581
EPA METHOD 8015D: GASOLINE RAN	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	22	mg/Kg	5	6/30/2017 11:24:18 AN	M G43930
Surr: BFB	102	54-150	%Rec	5	6/30/2017 11:24:18 AN	M G43930
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.11	mg/Kg	5	6/30/2017 11:24:18 AM	M B43930
Toluene	0.31	0.22	mg/Kg	5	6/30/2017 11:24:18 AN	M B43930
Ethylbenzene	ND	0.22	mg/Kg	5	6/30/2017 11:24:18 AN	1 B43930
Xylenes, Total	ND	0.44	mg/Kg	5	6/30/2017 11:24:18 AN	1 B43930
Surr: 4-Bromofluorobenzene	96.2	66.6-132	%Rec	5	6/30/2017 11:24:18 AN	1 B43930

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 1 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706F83

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: SC-13R

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 2:31:00 PM

Lab ID:

1706F83-002

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analy	st: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/30/2017 12:07:19 P	M 32581
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/30/2017 12:07:19 P	M 32581
Surr: DNOP	107	70-130	%Rec	1	6/30/2017 12:07:19 P	M 32581
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 11:47:56 A	M G43930
Surr: BFB	101	54-150	%Rec	5	6/30/2017 11:47:56 A	M G43930
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.098	mg/Kg	5	6/30/2017 11:47:56 A	M B43930
Toluene	ND	0.20	mg/Kg	5	6/30/2017 11:47:56 A	M B43930
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 11:47:56 A	M B43930
Xylenes, Total	ND	0.39	mg/Kg	5	6/30/2017 11:47:56 A	M B43930
Surr: 4-Bromofluorobenzene	94.7	66.6-132	%Rec	5	6/30/2017 11:47:56 A	M B43930

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 10
- Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F83

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: SC-15

Project:

NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 2:43:00 PM

Lab ID:

1706F83-003

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	t: JME
Diesel Range Organics (DRO)	ND	. 9.2	mg/Kg	1	6/30/2017 12:29:28 PI	M 32581
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/30/2017 12:29:28 PI	M 32581
Surr: DNOP	106	70-130	%Rec	1	6/30/2017 12:29:28 PI	/I 32581
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 12:11:40 PI	И G43930
Surr: BFB	103	54-150	%Rec	5	6/30/2017 12:11:40 PI	/ G43930
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.098	mg/Kg	5	6/30/2017 12:11:40 PI	И B43930
Toluene	ND	0.20	mg/Kg	5	6/30/2017 12:11:40 PI	И B43930
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 12:11:40 PI	И В43930
Xylenes, Total	ND	0.39	mg/Kg	5	6/30/2017 12:11:40 PI	A B43930
Surr: 4-Bromofluorobenzene	96.6	66.6-132	%Rec	5	6/30/2017 12:11:40 PI	/I B43930

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 10 J
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F83

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIÉNT: WPX Energy Client Sample ID: SC-16

 Project:
 NW Lybrook Unit #133H Well Pad
 Collection Date: 6/29/2017 2:10:00 PM

 Lab ID:
 1706F83-004
 Matrix: SOIL
 Received Date: 6/30/2017 7:00:00 AM

PQL Qual Units DF Date Analyzed **Analyses** Result Batch **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: JME Diesel Range Organics (DRO) 6/30/2017 1:03:16 PM 32581 9.2 mg/Kg Motor Oil Range Organics (MRO) ND mg/Kg 6/30/2017 1:03:16 PM 32581 46 Surr: DNOP 107. 70-130 %Rec 6/30/2017 1:03:16 PM 32581 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 22 6/30/2017 12:35:20 PM G43930 mg/Kg Surr: BFB 6/30/2017 12:35:20 PM G43930 100 %Rec 54-150 **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene 0.11 6/30/2017 12:35:20 PM B43930 ND mg/Kg Toluene ND 0.22 6/30/2017 12:35:20 PM B43930 mg/Kg Ethylbenzene ND 0.22 mg/Kg 6/30/2017 12:35:20 PM B43930 Xvlenes, Total ND 0.44 mg/Kg 6/30/2017 12:35:20 PM B43930 Surr: 4-Bromofluorobenzene 94.9 66.6-132 %Rec 6/30/2017 12:35:20 PM B43930

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

- * 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
- PQL Practical Quanitative Limit
- 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 Page 4 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706F83

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-17

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 2:19:00 PM

Lab ID:

1706F83-005

CLIENT: WPX Energy

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	st: AG
Gasoline Range Organics (GRO)	ND	21	mg/Kg	5	6/30/2017 10:33:25 Al	M A43928
Surr: BFB	100	70-130	%Rec	5	6/30/2017 10:33:25 Al	M A43928
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	}			Analys	st: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/30/2017 12:51:32 PI	M 32581
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/30/2017 12:51:32 PI	M 32581
Surr: DNOP	88.9	70-130	%Rec	1	6/30/2017 12:51:32 PI	M 32581
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	st: AG
Benzene	ND	0.10	mg/Kg	5	6/30/2017 10:33:25 Al	M R43928
Toluene	ND	0.21	mg/Kg	5	6/30/2017 10:33:25 AI	M R43928
Ethylbenzene	ND	0.21	mg/Kg	5	6/30/2017 10:33:25 AI	M R43928
Xylenes, Total	ND	0.41	mg/Kg	5	6/30/2017 10:33:25 AI	M R43928
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	5	6/30/2017 10:33:25 Al	M R43928
Surr: 4-Bromofluorobenzene	107	70-130	%Rec	5	6/30/2017 10:33:25 Al	M R43928
Surr: Dibromofluoromethane	96.8	70-130	%Rec	5	6/30/2017 10:33:25 AI	M R43928
Surr: Toluene-d8	100	70-130	%Rec	5	6/30/2017 10:33:25 Al	M R43928

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

- * 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
- PQL Practical Quanitative Limit
- 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 Page 5 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F83

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID MB-32573

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

PBS Client ID:

Batch ID: 32573

Result

9.8

RunNo: 43910

Prep Date:

6/30/2017

SegNo: 1384022

Units: %Rec

130

RPDLimit Qual

Analyte Surr: DNOP

Analysis Date: 6/30/2017

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

Sample ID LCS-32573

SampType: LCS

97.8

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID:

LCSS

Batch ID: 32573

PQL

PQL

RunNo: 43910

Prep Date:

6/30/2017 Analysis Date: 6/30/2017

10.00

SeqNo: 1384023

Units: %Rec

%RPD

Analyte Surr: DNOP Result 4.6 SPK value SPK Ref Val 5.000

%REC LowLimit 91.7

HighLimit

130

RPDLimit

Qual

Sample ID MB-32581

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID:

PBS Prep Date: 6/30/2017

Batch ID: 32581 Analysis Date: 6/30/2017

RunNo: 43908

SeqNo: 1384676

Units: mg/Kg

Analyte Diesel Range Organics (DRO) Result **PQL** ND 10 SPK value SPK Ref Val %REC LowLimit

70

70

%RPD HighLimit

RPDLimit Qual

Motor Oil Range Organics (MRO) Surr: DNOP

ND 50

110

130

Sample ID LCS-32581

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS

Batch ID: 32581

PQL

RunNo: 43908

Prep Date: 6/30/2017

Result

11

Analysis Date: 6/30/2017

SeqNo: 1384677

Units: mg/Kg

LowLimit HighLimit

%RPD **RPDLimit** Qual

Page 6 of 10

Analyte Diesel Range Organics (DRO) Surr: DNOP

46 5.1

10 50.00 5.000

10.00

SPK value SPK Ref Val 0 91.6 101

%REC

114

73.2 70 130

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POI. Practical Quanitative Limit % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Detection Limit RL.
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F83

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID RB

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

PBS

Batch ID: G43930

Client ID:

RunNo: 43930

Prep Date:

Analysis Date: 6/30/2017

SeqNo: 1385181

Units: mg/Kg

150

Surr: BFB

Result **PQL** SPK value SPK Ref Val %REC LowLimit

HighLimit

RPDLimit Qual

Analyte Gasoline Range Organics (GRO)

ND 1000 5.0 1000

101

54

%RPD

Sample ID 2.5UG GRO LCS

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

%REC

Client ID: LCSS

Batch ID: G43930

RunNo: 43930

HighLimit

Prep Date:

Analysis Date: 6/30/2017

PQL

SeqNo: 1385182

Units: mg/Kg

Analyte

Result 23

25.00 5.0

91.3 111

76.4 54

LowLimit

125

%RPD

RPDLimit Qual

Page 7 of 10

Gasoline Range Organics (GRO) Surr: BFB

1100

1000

SPK value SPK Ref Val

150

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RLReporting Detection Limit Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F83

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID RB	Samp1	ype: ME	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batcl	1D: B4	3930	F	RunNo: 4	3930				
Prep Date:	Analysis D	ate: 6/	30/2017	SeqNo: 1385187			Units: mg/K	(g		
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	0.95		1.000		95.0	66.6	132			

Sample ID 100NG BTEX L	CS Samp	Type: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles			
Client ID: LCSS	Batc	h ID: B4	3930	F	RunNo: 4	3930					
Prep Date:	Analysis [Date: 6/	30/2017	S	SeqNo: 1	385188	Units: mg/k	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.93	0.025	1.000	0	92.9	80	120				
Toluene	0.93	0.050	1.000	0	93.4	80	120				
Ethylbenzene	0.92	0.050	1.000	0	91.8	80	120			4	
Xylenes, Total	2.7	0.10	3.000	0	91.3	80	120				
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	66.6	132				

- 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
- PQL Practical Quanitative Limit
- 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
- Page 8 of 10

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F83

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID rb	Samp1	Гуре: МЕ	BLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batc	h ID: R4	3928	F	RunNo: 4	3928						
Prep Date:	Analysis [Analysis Date: 6/30/2017			SeqNo: 1	384975	Units: mg/K	(g				
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: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130					
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130					
Surr: Dibromofluoromethane	0.50		0.5000		99.1	70	130					
Surr: Toluene-d8	0.50		0.5000		99.6	70	130					

Sample ID 100ng ics	Samp	Гуре: LC	s	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batc	h ID: R4	3928	F	RunNo: 4	3928				
Prep Date:	Analysis [Date: 6/	30/2017	5	SeqNo: 1	384976	Units: mg/k			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	70	130			
Toluene	1.0	0.050	1.000	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.9	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
- PQL Practical Quanitative Limit
- 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

Page 9 of 10

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F83

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID rb

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

PBS Client ID:

Result

ND

520

Batch ID: A43928

RunNo: 43928

Prep Date:

Analysis Date: 6/30/2017

PQL

SegNo: 1384987

Units: mg/Kg

130

Qual

Analyte Gasoline Range Organics (GRO)

5.0

%REC 104

HighLimit

%RPD

RPDLimit

Surr: BFB

SampType: MS

500.0

SPK value SPK Ref Val

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID:

Sample ID 1706f83-005ams

RunNo: 43928

%REC

Prep Date:

SC-17

Batch ID: A43928 Analysis Date: 6/30/2017

SeqNo: 1385529

Units: mg/Kg HighLimit

Analyte Gasoline Range Organics (GRO) Surr: BFB

Result 110 2000

Result

110

2000

SPK value SPK Ref Val PQL 103.7 9.019 2075

99.3 63.2 98 5 70

LowLimit

LowLimit

63.2

70

70

LowLimit

128 130

%RPD **RPDLimit** Qual

20

0

Qual

Sample ID 1706f83-005amsd

Gasoline Range Organics (GRO)

SC-17

SampType: MSD

Batch ID: A43928

SPK value

103.7

2075

TestCode: EPA Method 8015D Mod: Gasoline Range RunNo: 43928

128

130

Client ID: Prep Date: Analyte

Analysis Date: 6/30/2017

SPK Ref Val

9.019

SeqNo: 1385530

%REC

93.4

96.6

Units: mg/Kg

HighLimit %RPD **RPDLimit**

5.60

0

Surr: BFB

Prep Date

Sample ID 2.5ug gro Ics

SampType: LCS

Analysis Date: 6/30/2017

PQL

5.0

PQL

21

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS

Batch ID: A43928

RunNo: 43928

Units: mg/Kg

130

%RPD **RPDLimit**

Analyte Gasoline Range Organics (GRO) Surr: BFB

Result 23 520 SPK value SPK Ref Val 25.00 500.0

%REC LowLimit 90.7

SegNo: 1385531

103

HighLimit 70 130

Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

POI. Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Value above quantitation range E

Analyte detected below quantitation limits

Page 10 of 10

Sample pH Not In Range P

Reporting Detection Limit RL

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.hallenviranmental.com

Sample Log-In Check List

Client Name:	WPX ENERGY	,	Work Order N	lumber:	1706F	83			Rop	tNo:	1
Received By:	Anne Thome		6/30/2017 7:00	MA 00:			Arne L	A-	_		
Completed By:	Anne Thome		6/30/2017 7:33				am _	H	_		
Reviewed By:	at	(6130117	,							
Chain of Cus	tody										
1. Custody sea	als intact on samp	ole bottles?			Yes		No		Not Present	✓	
2. Is Chain of C	Custody complete	?			Yes	\mathbf{V}	No		Not Present		
3. How was the	e sample delivere	d?			Court	<u>er</u>					
<u>Log In</u>											
4. Was an atte	mpt made to coc	I the samples?			Yes	V	No		NA.		
5. Were all sar	mples received at	a temperature	of >0° C to 6.0°	С	Yes	Z	No [NA		
6. Sample(s) i	n proper containe	r(s)?			Yes	V	No				
7. Sufficient sa	Imple volume for	indicated test(s)	?		Yes	V	No				
8. Are samples	except VOA an	d ONG) properly	y preserved?		Yes	✓	No				
9. Was presen	vative added to be	ottles?			Yes		No	V	NA		
10.VOA vials ha	ave zero headspa	ice?			Yes		No		No VOA Viais	V	
11. Were any sa	ample containers	received broke	n?		Yes		[′] No	☑ [# of amount		
						,		_	# of preserved bottles checke	d	
	work match bottle pancies on chain				Yes	×	No	┙╽	for pH:	(<2 o	r >12 unless noted)
-	correctly identific	••	Custody?		Yes	V	No		Adjusted	-	
	at analyses were				Yes	abla	No	□│			
	ding times able to				Yes	lacksquare	No	□│	Checked	by:	
(IT no, noury	customer for auti	onzation.)						_			
Special Hand	iling (if applic	able)									
16. Was client n	otified of all discr	epancies with ti	nls order?		Yes		No		NA NA	V	
Persor	n Notified:	 	2 Di 10 C 2 X 20 D 10 P	Date T							
By Wh	nom:			Via:	eMa	i 🗌	Phone 🗌	Fax	☐ In Person	-	
Regan			***************************************							-	}
L	Instructions:										J
17. Additional re	emarks:										
18. Cooler Info							_				
Cooler N		Condition Se	al Intact Seal	No S	eal Da	be	Signed B	у			-
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C	hain-	of-Cu	stody Record	Turn-Around	Time:											-						
Client:	WPX	Evergy		□ Standard Project Name	Ö Rush ∷	Same d	ay.				A	N		YS	SIS	Ł	AE	30	ME RA			
Mailing	Address	721	S Main	NW Lybu	ok Unit	# 1334 1	vell Pad		490	01 H			iE -						109			
		Aztec	NM 87410	Project #:					Те	l. 50	5-34	5-39	975	F	ax !	505-	345-	4107	7			
		<u> 333 18</u>								/ (2)			Α	naly	sis	Req	uest					
-		deboral	n.waton@upxenergy.com	Project Mana	дег:		٠	₽	ഉ	(S)					8	Ø					l	
QAVQC !	Package: dard		☐ Level 4 (Full Validation)	D. Watso	М			(8021)	(Gas c				SIMS)		,PO4,S	PCB's						
Accred				Sampler: ${\mathcal D}$	Watson				표	Ø	=	=	8		Š	3087						2
□ NEL		□ Othe	er	On Ice	PARSIAL	T.No.	242 (47.67.2)	+	+	5)	498	凝	8	ဖ	ő	3 / S		8				ō
	(Type) _	T		1	ดาสาราบหน้าส่วนกำรับ 	1.0			뛜		ब्र	ğ	မ္မ	eta	핑	cide	€	Νį				\ <u>\</u>
Date	Time	Matrix	Sample Request ID	Asol/3d/7 Container Type and # Mothch	Preservative Type	TOBE		BTEX +4	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GROYDROY MRD)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		i		Air Bubbles (Y or N)
629.17	1405	Sol	SC-UR	1-40 Zalass	Cold		ادى	X		X												
6.29.17		કન્પ	SC-13R	1-4070/48 COLA -COL X						×												
6.29.17		Sorl	Sc-15	1-402 /08	cold		703	X		X											\Box	
	1	Shl	8c-16	1-4074ES			704	Х		γ.												
6.29,17	1	Sol	SC-17	1-407gm			705	Х		Х				-						\exists	\dashv	-
		<u> </u>																			\dashv	+
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Date: Date:	1. 0001			Received by: Date Time Remarks:																		
Date:	Time: [84]	Relingulah	ed by: Walt	Received by:	In-) 04/	Time 30//7															
		sameles sub	mitted to Hall Environmental may be subc	contracted to other a	ccredited laboratoric			possi	bility.	Any su	b-conf	racteo	data	will be	clear	ty note	rted cr	n the a	nalytic	al repo	rt.	



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

July 03, 2017

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Well Pad

OrderNo.: 1706F82

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/30/2017 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

Lab Order 1706F82

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-1R

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:20:00 PM

Lab ID:

1706F82-001

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analyst	JME
Diesel Range Organics (DRO)	16	9.1	mg/Kg	1	6/30/2017 11:21:49 AM	32581
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	6/30/2017 11:21:49 AM	32581
Surr: DNOP	108	70-130	%Rec	1	6/30/2017 11:21:49 AM	32581
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	17	mg/Kg	5	6/30/2017 9:49:33 AM	G43930
Surr: BFB	107	54-150	%Rec	5	6/30/2017 9:49:33 AM	G43930
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.084	mg/Kg	5	6/30/2017 9:49:33 AM	B43930
Toluene	ND	0.17	mg/Kg	5	6/30/2017 9:49:33 AM	B43930
Ethylbenzene	ND	0.17	mg/Kg	5	6/30/2017 9:49:33 AM	B43930
Xylenes, Total	ND	0.34	mg/Kg	5	6/30/2017 9:49:33 AM	B43930
Surr: 4-Bromofluorobenzene	98.6	66.6-132	%Rec	5	6/30/2017 9:49:33 AM	B43930

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 8
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F82

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-2R

 Project:
 NW Lybrook Unit #133H Well Pad
 Collection Date: 6/29/2017 1:25:00 PM

 Lab ID:
 1706F82-002
 Matrix: SOIL
 Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANIC	s	•		Analyst	JME
Diesel Range Organics (DRO)	45	10	mg/Kg	1	6/30/2017 11:46:27 AM	32581
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/30/2017 11:46:27 AM	32581
Surr: DNOP	105	70-130	%Rec	1	6/30/2017 11:46:27 AM	32581
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	6/30/2017 10:13:21 AM	G43930
Surr: BFB	113	54-150	%Rec	5	6/30/2017 10:13:21 AM	G43930
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.10	mg/Kg	5	6/30/2017 10:13:21 AM	B43930
Toluene	ND	0.20	mg/Kg	5	6/30/2017 10:13:21 AM	B43930
Ethylbenzene	ND	0.20	mg/Kg	5	6/30/2017 10:13:21 AM	B43930
Xylenes, Total	ND	0.40	mg/Kg	5	6/30/2017 10:13:21 AM	B43930
Surr: 4-Bromofluorobenzene	99.3	66.6-132	ˈ %Rec	5	6/30/2017 10:13:21 AM	B43930

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 2 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1706F82

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-3R

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:28:00 PM

Lab ID:

1706F82-003

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	st: JME
Diesel Range Organics (DRO)	51	9.7	mg/Kg	1	6/30/2017 12:11:19 P	M 32581
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/30/2017 12:11:19 P	M 32581
Surr: DNOP	102	70-130	%Rec	1	6/30/2017 12:11:19 P	M 32581
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	16	mg/Kg	5	6/30/2017 10:36:54 A	M G43930
Surr: BFB	113	54-150	%Rec	5	6/30/2017 10:36:54 A	M G43930
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.081	mg/Kg	5	6/30/2017 10:36:54 A	M B43930
Toluene	ND	0.16	mg/Kg	5	6/30/2017 10:36:54 A	M B43930
Ethylbenzene	ND	0.16	mg/Kg	5	6/30/2017 10:36:54 A	M B43930
Xylenes, Total	ND	0.32	mg/Kg	5	6/30/2017 10:36:54 A	M B43930
Surr: 4-Bromofluorobenzene	96.8	66.6-132	%Rec	5	6/30/2017 10:36:54 A	M B43930

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 8
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706F82

Date Reported: 7/3/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-4R

Project: NW Lybrook Unit #133H Well Pad

Collection Date: 6/29/2017 1:30:00 PM

Lab ID:

1706F82-004

Matrix: SOIL

Received Date: 6/30/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESÉL RAN	GE ORGANIC	s			Analy	st: JME
Diesel Range Organics (DRO)	39	9.4	mg/Kg	1	6/30/2017 12:36:05 P	M 32581
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/30/2017 12:36:05 P	M 32581
Surr: DNOP	104	70-130	%Rec	1	6/30/2017 12:36:05 P	M 32581
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	16	mg/Kg	5	6/30/2017 11:00:35 A	M G43930
Surr: BFB	108	54-150	%Rec	5	6/30/2017 11:00:35 A	M G43930
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.082	mg/Kg	5	6/30/2017 11:00:35 A	M B43930
Toluene	ND	0.16	mg/Kg	5	6/30/2017 11:00:35 A	M B43930
Ethylbenzene	ND	0.16	mg/Kg	5	6/30/2017 11:00:35 A	M B43930
Xylenes, Total	ND	0.33	mg/Kg	5	6/30/2017 11:00:35 A	M B43930
Surr: 4-Bromofluorobenzene	98.8	66.6-132	%Rec	5	6/30/2017 11:00:35 A	M B43930

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F82

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID MB-32573

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS

Batch ID: 32573

POL

Batch ID: 32573

RunNo: 43910

Prep Date: 6/30/2017 Analysis Date: 6/30/2017

9.8

SeqNo: 1384022

Units: %Rec

Analyte Surr: DNOP Result

SPK value SPK Ref Val

%REC LowLimit 97.8

HighLimit 130 %RPD **RPDLimit**

Qual

Sample ID LCS-32573

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Prep Date:

6/30/2017 Analysis Date: 6/30/2017

RunNo: 43910

Units: %Rec

Analyte

Result **PQL**

SeqNo: 1384023

4.6

SPK value SPK Ref Val 5.000

10.00

%REC LowLimit 91.7

HighLimit

RPDLimit

Qual

Surr: DNOP

Result

PQL

130

70

%RPD

Sample ID MB-32581

SampType: MBLK

RunNo: 43908

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: Prep Date: 6/30/2017

PBS

Batch ID: 32581

Analysis Date: 6/30/2017

SPK value SPK Ref Val

SeqNo: 1384676

%REC

Units: mg/Kg HighLimit

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

ND 10 ND

50 11 10.00 110

%RPD **RPDLimit**

Qual

Surr: DNOP Sample ID LCS-32581

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS

Batch ID: 32581

PQL

10

RunNo: 43908

130

Prep Date: 6/30/2017

Analysis Date: 6/30/2017

SeqNo: 1384677 %REC

Units: mg/Kg

Analyte

Result 46

Result

Result

76

85

5.0

SPK value SPK Ref Val 50.00

5.000

48.92

4.892

49.26

LowLimit

LowLimit

70

HighLimit

RPDLimit Qual

Diesel Range Organics (DRO) Sun: DNOP

5.1

91.6 101

%REC

73.2 114 70 130 %RPD

Sample ID 1706F82-001AMS

SampType: MS

Batch ID: 32581

PQL

9.8

TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 43910

Prep Date: 6/30/2017 Analyte

Client ID: TSP-1R

Analysis Date: 6/30/2017

SeqNo: 1384900

Units: mg/Kg

Qual

Surr: DNOP

SampType: MSD

Analysis Date: 6/30/2017

PQL

9.9

16.17 141 LowLimit HighLimit

122

%RPD **RPDLimit**

16.17

SPK value SPK Ref Val

SPK value SPK Ref Val

В

TestCode: EPA Method 8015M/D: Diesel Range Organics

130

Sample ID 1706F82-001AMSD

Client ID: TSP-1R

Prep Date: 6/30/2017

Diesel Range Organics (DRO)

Batch ID: 32581

RunNo: 43910 SeqNo: 1384926

%REC

122

102

Lowl imit

55.8

55.8

70

Units: mg/Kg

HighLimit

122

%RPD

11.1

RPDLimit

20

Page 5 of 8

Qual

Analyte Diesel Range Organics (DRO)

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

- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F82

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID 1706F82-001AMSD

SampType: MSD

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: TSP-1R

Prep Date: 6/30/2017

Batch ID: 32581

RunNo: 43910

Analysis Date: 6/30/2017

SeqNo: 1384926

Units: mg/Kg

Analyte

Result

PQL SPK value SPK Ref Val

%REC

LowLimit 70

130

%RPD

RPDLimit Qual

Sun: DNOP

5.1

4.926

104

HighLimit

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

Analyte detected below quantitation limits

Page 6 of 8

Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F82

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID RB

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

LowLimit

54

Client ID: **PBS**

Batch ID: G43930

RunNo: 43930

Prep Date:

Surr: BFB

Analysis Date: 6/30/2017 **PQL**

SeqNo: 1385181

%REC

Units: mg/Kg

%RPD

RPDLimit Qual

Analyte Gasoline Range Organics (GRO)

ND 5.0 1000

Result

1000

SPK value SPK Ref Val

101

150

HighLimit

Sample ID 2.5UG GRO LCS

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS

Batch ID: G43930

RunNo: 43930

Prep Date:

Analysis Date: 6/30/2017

SeqNo: 1385182

Units: mg/Kg

%RPD HighLimit

Analyte Gasoline Range Organics (GRO) Result SPK value SPK Ref Val **PQL** 23 5.0 25.00

%REC LowLimit 91.3

76.4 125 54

RPDLimit Qual

Sun: BFB

1100 1000

111

150

Sample ID 1706F82-001AMS

Client ID: TSP-1R

SampType: MS

RunNo: 43930

TestCode: EPA Method 8015D: Gasoline Range

Prep Date:

Batch ID: G43930 Analysis Date: 6/30/2017

84.46

3379

84.46

3379

SeqNo: 1385183

101

133

Units: mg/Kg

HighLimit

Analyte Gasoline Range Organics (GRO) Surr: BFB

Result **PQL** 86

4500

85

4200

SPK value SPK Ref Val

%REC

LowLimit

77 R

54

%RPD

RPDLimit

Qual

Sample ID 1706F82-001AMSD

SampType: MSD

TestCode: EPA Method 8015D: Gasoline Range

Client ID: TSP-1R Prep Date:

Batch ID: G43930

RunNo: 43930

Units: mg/Kg

128

150

RPDLimit Qual

Page 7 of 8

Analyte Gasoline Range Organics (GRO)

Sun: BFB

SPK value SPK Ref Val Result **PQL**

17

Analysis Date: 6/30/2017

SeqNo: 1385184 %REC

101

124

LowLimit

77.8

HighLimit 128

150

%RPD 0.198

20 0 0

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Detection Limit RI.
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706F82

03-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Well Pad

Sample ID RB	Samp1	Type: ME	3LK	Tes	tCode: E	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batcl	h ID: B4	3930	F	RunNo: 4	3930				
Prep Date:	Analysis E)ate: 6/	30/2017	8	SeqNo: 1	385187	Units: mg/K	(g		
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	0.95		1.000		95.0	66.6	132			

		. , ,	•		·					
Client ID: LCSS	Batc	h ID: B4	: B43930 RunNo: 43930							
Prep Date:	Analysis [Date: 6/	30/2017	7 SeqNo: 1385188 U		Units: mg/K	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.9	80	120			
Toluene	0.93	0.050	1.000	0	93.4	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.3	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	66.6	132			

Sample ID 1706F82-002AM	S Samp	Type: MS	8	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: TSP-2R	Bato	h ID: B 4	3930	F	RunNo: 4	3930				
Prep Date:	Analysis	Date: 6	30/2017	5	SeqNo: 1	385189	Units: mg/l	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.7	0.10	4.010	0	92.5	80.9	132			
Toluene	3.7	0.20	4.010	0.05092	91.6	79.8	136			
Ethylbenzene	3.7	0.20	4.010	0.05160	91.0	79.4	140			
Xylenes, Total	11	0.40	12.03	0.1213	90.7	78.5	142			
Sur: A. Bromofluorobonzono	42		4 010		104	88.8	132			

Sample ID 1706F82-002AM	SD SampT												
Client ID: TSP-2R	Batch	ID: B4	3930	F	RunNo: 4	3930							
Prep Date:	Analysis D	ate: 6/	30/2017	8	SeqNo: 1	385190	Units: mg/k	(g					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	3.6	0.10	4.010	0	90.7	80.9	132	2.03	20				
Toluene	3.7	0.20	4.010	0.05092	90.2	79.8	136	1.53	20				
Ethylbenzene	3.7	0.20	4.010	0.05160	90.2	79.4	140	0.792	20				
Xylenes, Total	11	0.40	12.03	0.1213	88.8	78.5	142	2.15	20				
Surr: 4-Bromofluorobenzene	4.2		4.010		104	66.6	132	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

PQL Practical Quanitative Limit

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

Page 8 of 8



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 Num	ber: 1706F82		RcptNo:	1
Received By:	Anne Thome	6/30/2017 7:00:00 A	AM	an In	_	
Completed By:	Anne Thorne	6/30/2017 7:23:54	AM	Aone Sh Aone Sh	. .	
Reviewed By:	az	6 130 17			_	
Chain of Cus	<u>tody</u>					
1. Custody sea	ils intact on sample bo	ttles?	Yes 🗌	No 🗆	Not Present 🗹	
2. Is Chain of C	Custody complete?		Yes 🗹	No 🗆	Not Present	
3. How was the	sample delivered?		Courier			
<u>Log In</u>						
4. Was an atte	mpt made to cool the	samples?	Yes 🗹	No 🗆	, NA	
5. Were all sam	nples received at a ter	mperature of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) in	n proper container(s)?		Yes 🗹	No 🗆		
7, Sufficient sar	mple volume for indica	ated test(s)?	Yes 🗹	No 🗆		
8. Are samples	(except VOA and ON	G) properly preserved?	Yes 🗹	No 🗆		
9. Was preserve	ative added to bottles	?	Yes 🗆	No 🗹	na 🗆	• •
10.VOA vials ha	ve zero headspace?		Yes 🗌	No 🗆	No VOA Vials 🗹	
11. Were any sa	imple containers recei	ived broken?	Yes	No 🗹	# of preserved	
					bottles checked	
	vork match bottle label pancies on chain of cu		Yes ₩	No 🗆	for pH: (<2 o	r >12 unless noted)
	correctly identified on		Yes 🗹	No 🗆	Adjusted?	
	at analyses were requ	•	Yes 🗹	No 🗆		
	ling times able to be n customer for authoriza		Yes 🗹	No 🗆	Checked by:	
Special Handi	ling (if applicable	. 1				
	otified of all discrepan	_	Yes 🗌	No 🗆	na 🗹	
Person	Notified:	Date	Personant and and and and and and and and and and]
By Who	om:	Via:	'	Phone Fax	In Person	
Regard	ling:	***************************************				
Client I	nstructions:					
17. Additional re	marks:					-
18. <u>Cooler Infor</u> Cooler No	 .	tion Seal Intact Seal No	Seal Date	Signed By		
1	Good	Yes		4:5:104 b)		

	<u>hain</u>	-of-Cu	istody Record	Turn-Around				F	1					=	NIZA	TE	•	n i n	.eei	NTA		
Client:	WPX	Energ) \	□ Standard Project Name	X Rush	Same day					A	N	AL	YS	SIS	S L		30		TO		,
Mailing	Address	: 721	S Main'	NW LY	arook Ur	nt #1336 Well	t Pad		498	01 H:	awki:								109			
		Aztec	UM 87410	Project #:		·					5-34							4107				
Phone	#: 505		1880														uest					
			. watson@wooxencray.com	Project Mana	ger:		٠	(1	only)	R					(7)							
QA/QC	Package: d ard		□ Level 4 (Full Validation)	D Wa	tom			8 (8021)	TPH (Gas o	OS OS			SIMS)		,PO4,S	2 PCB's						
Accredi		☐ Othe	er	Sampler: D	Watani			# ##	+ TPH	000	18.1)	9.1	8270		J ₃ ,NO ₂	3 / 8082		¥				S N
□ EDD	(Type)			Sample Text	econs:			 #	H	©	В 4	od 5	00	stals	N.	ides	(¥					<u>></u>
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL N 1706 F 8	Program of the	BTEX + MA	BTEX + MTBE	TPH 8015B (GROYORO WIRD)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
4.29.17	1320	Sort	TSP-IR	1-402 gas	old.		-00	х		Х												
6.29.17	1325	Sol	TSP-2R	1-40 Z gan			702	x		x				_								
	1328		TSP-3R	1-407 den	cold		703	×		Х												
	1330	_	TSP-4R	1-407 den	Cold		204	x		χ	Ì											
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				<u> </u>															\sqcup	\perp	╽-	Ļ
Date:	Times	Delinguish	led by	Received by:	<u> </u>	Date 17	lme]					L		Ш	L_		上
Date: 1/29/17	Time: 1770	Relinquish	W) atu	Muster	e Wart	4/29/17	1720	Ren	папк	S.												
Date: 2/29/17	Time:	Relinquish	Lialt	Received by:	hard	Date Ti	ime 7 <i>()700</i>															
· · · · ·	f necessary,	samples sub	Mitted to Hall Environmental may be subc	contracted to other a	ccredited laboratori	es. This serves as r	notice of this	possil	offity.	Any su	b-cont	racted	d data	wiil be	dear	ly note	eted or	n the a	nalytica	report.		



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

July 06, 2017

Debbie Watson
WPX Energy
721 S Main Ave
Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit 133 H Well Pad

OrderNo.: 1707089

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/4/2017 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

Lab Order 1707089

Date Reported: 7/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-15

Project: NW Lybrook Unit 133 H Well Pad

Collection Date: 7/3/2017 11:23:00 AM

Lab ID: 1707089-001

Matrix: SOIL

Received Date: 7/4/2017 9:30:00 AM

Analyses	Result	PQL (Qual Units	DF Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	Analys	t: TOM			
Diesel Range Organics (DRO)	48	10	mg/Kg	1 7/5/2017 10:20:39 AM	32628
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1 7/5/2017 10:20:39 AM	32628
Surr: DNOP	104	70-130	%Rec	1 7/5/2017 10:20:39 AM	32628
EPA METHOD 8015D: GASOLINE RAI	Analyst: NSB				
Gasoline Range Organics (GRO)	ND	2.9	mg/Kg	1 7/5/2017 9:40:15 AM	32616
Surr: BFB	122	54-150	%Rec	1 7/5/2017 9:40:15 AM	32616
EPA METHOD 8021B: VOLATILES	Analyst: NSB				
Benzene	ND	0.015	mg/Kg	1 7/5/2017 9:40:15 AM	32616
Toluene	ND	0.029	mg/Kg	1 7/5/2017 9:40:15 AM	32616
Ethylbenzene	ND	0.029	mg/Kg	1 7/5/2017 9:40:15 AM	32616
Xylenes, Total	ND	0.058	mg/Kg	1 7/5/2017 9:40:15 AM	32616
Surr: 4-Bromofluorobenzene	133	66.6-132	S %Rec	1 7/5/2017 9:40:15 AM	32616

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Analyte detected below quantitation limits Page 1 of 8 j
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1707089

Date Reported: 7/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-16

Project:

NW Lybrook Unit 133 H Well Pad

Collection Date: 7/3/2017 11:33:00 AM

Lab ID:

1707089-002

Matrix: SOIL

Received Date: 7/4/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	: TOM
Diesel Range Organics (DRO)	49	9.5	mg/Kg	1	7/5/2017 10:45:28 AM	32628
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	7/5/2017 10:45:28 AM	32628
Surr: DNOP	103	70-130	%Rec	1	7/5/2017 10:45:28 AM	32628
EPA METHOD 8015D: GASOLINE RAN	NGE			Analyst: NSB		
Gasoline Range Organics (GRO)	ND	2.7	mg/Kg	1	7/5/2017 10:04:06 AM	32616
Surr: BFB	115	54-150	%Rec	1	7/5/2017 10:04:06 AM	32616
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.014	mg/Kg	1	7/5/2017 10:04:06 AM	32616
Toluene	ND	0.027	mg/Kg	1	7/5/2017 10:04:06 AM	32616
Ethylbenzene	ND	0.027	mg/Kg	1	7/5/2017 10:04:06 AM	32616
Xylenes, Total	ND	0.055	mg/Kg	1	7/5/2017 10:04:06 AM	32616
Surr: 4-Bromofluorobenzene	128	66.6-132	%Rec	1	7/5/2017 10:04:06 AM	32616

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

- Value exceeds Maximum Contaminant Level.
- O Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- 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 Page 2 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1707089

Date Reported: 7/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-17

Project: NW Lybrook Unit 133 H Well Pad Collection Date: 7/3/2017 11:52:00 AM

Lab ID: 1707089-003 Matrix: SOIL Received Date: 7/4/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN		Analys	t: TOM				
Diesel Range Organics (DRO)	24	9.6	mg/Kg	1	7/5/2017 11:10:15 AM	32628	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	7/5/2017 11:10:15 AM	32628	
Surr: DNOP	106	70-130	%Rec	1	7/5/2017 11:10:15 AM	32628	
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB		
Gasoline Range Organics (GRO)	ND	3.0	mg/Kg	1	7/5/2017 10:28:03 AM	32616	
Surr: BFB	107	54-150	%Rec	1	7/5/2017 10:28:03 AM	32616	
EPA METHOD 8021B: VOLATILES					Analys	t: NSB	
Benzene	ND	0.015	mg/Kg	1	7/5/2017 10:28:03 AM	32616	
Toluene	ND	0.030	mg/Kg	1	7/5/2017 10:28:03 AM	32616	
Ethylbenzene	ND	0.030	mg/Kg	1	7/5/2017 10:28:03 AM	32616	
Xylenes, Total	ND	0.059	mg/Kg	1	7/5/2017 10:28:03 AM	32616	
Surr: 4-Bromofluorobenzene	131	66.6-132	%Rec	1	7/5/2017 10:28:03 AM	32616	

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1707089

Date Reported: 7/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-18

Project: NW Lybrook Unit 133 H Well Pad

Collection Date: 7/3/2017 11:41:00 AM

Lab ID:

1707089-004

Matrix: SOIL

Received Date: 7/4/2017 9:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN		-	Analyst	: TOM		
Diesel Range Organics (DRO)	27	9.8	mg/Kg	1	7/5/2017 11:35:08 AM	32628
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	7/5/2017 11:35:08 AM	32628
Surr: DNOP	108	70-130	%Rec	1	7/5/2017 11:35:08 AM	32628
EPA METHOD 8015D: GASOLINE RAI		Analyst	NSB			
Gasoline Range Organics (GRO)	ND	2.9	mg/Kg	1	7/5/2017 10:52:01 AM	32616
Surr: BFB	107	54-150	%Rec	1	7/5/2017 10:52:01 AM	32616
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.014	mg/Kg	1	7/5/2017 10:52:01 AM	32616
Toluene	ND	0.029	mg/Kg	1	7/5/2017 10:52:01 AM	32616
Ethylbenzene	ND	0.029	mg/Kg	1	7/5/2017 10:52:01 AM	32616
Xylenes, Total	ND	0.058	mg/Kg	1	7/5/2017 10:52:01 AM	32616
Surr: 4-Bromofluorobenzene	122	66.6-132	%Rec	1	7/5/2017 10:52:01 AM	32616

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 8
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707089

06-Jul-17

Client:

WPX Energy

Project: NW Lyb	rook Unit 133 F	H Well Pad								
Sample ID MB-32628	SampType:	MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID:	RunNo: 43983								
Prep Date: 7/5/2017	Analysis Date:	7/5/2017	. 8	SeqNo: 1	386465 Units: mg/Kg					
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND :	50								
Surr: DNOP	9.8	10.00		97.6	70	130				
Sample ID LCS-32628	SampType:	LCS	Tes	Code: E	PA Method	8015M/D: Di	esel Rang	e Organics		
Client ID: LCSS	Batch ID:	32628	F	lunNo: 4	3983					
Prep Date: 7/5/2017	Analysis Date:	7/5/2017	8	SeqNo: 1	386492	Units: mg/k	(g			
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	46	10 50.00	0	91.6	73.2	114				
Surr: DNOP	4.5	5.000		89.8	70	130				
Sample ID 1707089-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics										
Client ID: TSP-15	Batch ID:	32628	RunNo: 43983							
Prep Date: 7/5/2017	Analysis Date:	7/5/2017	S	SeqNo: 1	386915	Units: mg/K	(g			
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	87 9	.7 48.36	48.28	79.7	55.8	122				
Surr: DNOP	4.8	4.836		99.9	70	130				
Sample ID 1707089-001AMSI	D SampType:	MSD	Tes	Code: E	PA Method	8015M/D: DI	esel Range	e Organics		
Client ID: TSP-15	Batch ID:	32628	F	tunNo: 4	3983					
Prep Date: 7/5/2017	Analysis Date:	7/5/2017	S	SeqNo: 1386919			Units: mg/Kg			
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	120 9	.6 48.12	48.28	142	55.8	122	29.3	20	RS	
Surr: DNOP	5.2	4.812		108	70	130	0	0		
Sample ID MB-32588	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: PBS	Batch ID:	32588	R	unNo: 4	3983					
Prep Date: 6/30/2017	Analysis Date:	7/5/2017	S	eqNo: 1	387024	Units: %Re	C			
Analyte		L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	9.9	10.00		99.3	70	130				
Sample ID LCS-32588	SampType:	LCS	Tes	Code: E	PA Method	8015M/D: Die	esel Rango	e Organics		
Client ID: LCSS	Batch ID:	32588	R	tunNo: 4	3983					
Prep Date: 6/30/2017	Analysis Date:	7/5/2017	S	eqNo: 1	387357	Units: %Re	C			
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

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

PQL Practical Quanitative Limit

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

Page 5 of 8

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707089

06-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit 133 H Well Pad

Sample ID LCS-32588

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS

Batch ID: 32588

RunNo: 43983

Prep Date: 6/30/2017 Analysis Date: 7/5/2017

SeqNo: 1387357

Units: %Rec

Analyte

Result **PQL**

RPDLimit Qual

130

%RPD

%REC LowLimit SPK value SPK Ref Val HighLimit Sur: DNOP 4.7 5.000 93.8 70

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 6 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707089

06-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit 133 H Well Pad

Sample ID MB-32616

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: **PBS**

Batch ID: 32616

RunNo: 43994

Prep Date: 7/3/2017

Analysis Date: 7/5/2017

SeqNo: 1387418

Units: mg/Kg

HighLimit

Qual

Analyte Gasoline Range Organics (GRO) Result ND

970

PQL SPK value SPK Ref Val %REC LowLimit 5.0

1000

SPK value SPK Ref Val %REC

96.8

54

%RPD

RPDLimit

Surr: BFB Sample ID LCS-32616

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

150

Client ID: LCSS

Batch ID: 32616

RunNo: 43994

Prep Date: 7/3/2017

Analysis Date: 7/5/2017

PQL

SeqNo: 1387419

Units: mg/Kg

LowLimit HighLimit

Gasoline Range Organics (GRO) Surr: BFB

23 1100

Result

25.00 1000 91.0 108 76.4 54

125 150

%RPD **RPDLimit** Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Ε Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

Page 7 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#:

1707089

06-Jul-17

Client:

WPX Energy

Project:

NW Lybrook Unit 133 H Well Pad

Sample ID MB-32616	Samp	Гуре: М	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: 32	616	F	RunNo: 4	3994				
Prep Date: 7/3/2017	Analysis [Date: 7/	5/2017	\$	SeqNo: 1	387443	Units: mg/k	ζg		
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	1.3		1.000		128	66.6	132			
Sample ID I CS-32616	Samn	[vne: LC	s	Tes	tCode: Fi	PA Method	8021B: Vola	iles		

Sample ID LCS-32010	Sampi	ype. Lo		163	Code. E	PA WELLIOU	OUZID. VUIA	uies		
Client ID: LCSS	Batcl	n ID: 32	616	F	RunNo: 4	3994				
Prep Date: 7/3/2017	Analysis E)ate: 7/	5/2017	\$	SeqNo: 1	387444	Units: mg/H	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	113	80	120			
Toluene	1.1	0.050	1.000	0	113	80	120			
Ethylbenzene	1.1	0.050	1.000	0	115	80	120			
Xylenes, Total	3.5	0.10	3.000	0	116	80	120			
Surr: 4-Bromofluorobenzene	1.4		1.000		139	66.6	132			S

Sample ID 1707089-001AMS	Samp	Type: MS	3	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: TSP-15	Bato	h ID: 32	616	F	RunNo: 4	3994				
Prep Date:	Analysis I	Date: 7/	5/2017	5	SeqNo: 1	387445	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.62	0.015	0.5838	0	107	80.9	132			
Toluene	0.64	0.029	0.5838	0.008348	108	79.8	136			
Ethylbenzene	0.64	0.029	0.5838	0.006422	108	79.4	140			
Xylenes, Total	1.9	0.058	1.751	0.009282	110	78.5	142			
Surr: 4-Bromofluorobenzene	0.74		0.5838		127	66.6	132			

Sample ID 1707089-001AM	SD SampT	ype: MS	SD	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: TSP-15	Batch	1D: 32	616	F	RunNo: 4	3994				
Prep Date:	Analysis D	ate: 7/	5/2017	S	SeqNo: 1	387446	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.62	0.015	0.5838	0	106	80.9	132	1.17	20	
Toluene	0.63	0.029	0.5838	0.008348	107	79.8	136	0.690	20	
Ethylbenzene	0.63	0.029	0.5838	0.006422	107	79.4	140	1.45	20	
Xylenes, Total	1.9	0.058	1.751	0.009282	108	78.5	142	2.19	20	
Surr: 4-Bromofluorobenzene	0.73		0.5838		125	66.6	132	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank

Ε Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

RL

Reporting Detection Limit Sample container temperature is out of limit as specified Page 8 of 8



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 Numb	er: 1707089		RcptNo:	1
Received By:	Andy Freeman	7/4/2017 9:30:00 AN	1	ald		
Completed By:	Erin Melendrez	7/5/2017 7:56:47 AN	1	und,	-	
Reviewed By:	FNM/SQ	2 7/5/17		, 0		
Chain of Cus	stody			•		
1. Custody sea	als intact on sample bo	ottles?	Yes 🗹	No 🗆	Not Present	
2. Is Chain of (Custody complete?		Yes 🗹	No 🗆	Not Present	
3. How was the	e sample delivered?		Courier			
<u>Log In</u>						
4. Was an atte	empt made to cool the	samples?	Yes 🗹	No 🗆	NA 🗆	
5. Were all sar	mples received at a ter	mperature of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) i	in proper container(s)?		Yes 🗹	No 🗀		
7. Sufficient sa	ample volume for Indica	ated test(s)?	Yes 🗹	No 🗆		
8. Are samples	s (except VOA and ON	G) properly preserved?	Yes 🗹	No 🗆		
9. Was presen	vative added to bottles	?	Yes 🗌	No 🗹	NA 🗆	
10.VOA vials h	ave zero headspace?		Yes 🔲	No 🗆	No VOA Vials	
11. Were any s	ample containers rece	ived broken?	Yes 🗀	No 🗹	# of preserved bottles checked	
	work match bottle labe		Yes 🗹	No 🗆	for pH:	r >12 unless noted)
13. Are matrices	s correctly identified or	Chain of Custody?	Yes 🗹	No 🗆	Adjusted?	
14. Is it clear wh	hat analyses were requ	ested?	Yes 🗹	No 🗆		
	ding times able to be r customer for authorize		Yes 🗹	No 🗆	Checked by:	· · · · · · · · · · · · · · · · · · ·
Special Hang	iling (if applicable	9)				
	notified of all discrepan		Yes 🗆	No 🗆	NA 🗹	
Person	n Notified:	Date		 		į
By Wh	nom:	Via:	eMail 🔲	Phone 🗌 Fax	☐ In Person	
Regard						•
<u> </u>	Instructions:	··· , , ,				
17. Additional r	emarks:					
18. Cooler Info				I		
Cooler N	lo Temp °C Cond 1.5 Good	ition Seal Intact Seal No Not Present	Seal Date	Signed By		
<u>[1</u>		HOLFIGOGIL:				

												Date Time		Received by:		Reinquished by:	Time:	Date:
									Ś	Remarks		2	111	Received by:	Water	Selinquished by:	1615	7
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Al- D. Internation		8270 (Semi-	8081 Pestici 8260B (VOA	Anions (F,C	RCRA 8 Me	PAH's (8310	EDB (Metho	TPH (Metho	TPH 8015B	BTEX + MT	BTEX +	HEAL NO.	Preservative Type	Container Type and #	Sample Request ID	Matrix	Time	Date
1)/				_	_	or	od 5	-			BE.)°5	perature: /, S	Sample Temperature:			□ EDD (Type)	□ EDD
AD.		A)	/ 80	_	_	8270	04.1)	-	-		1	□ No	Wies 1	On loe:	1	□ Other	AP	O NELAP
			82	_		SI		_	-		BIS			7 8			tation	Accreditation
			PCB'			MS)					(802		a design	7.100	□ Level 4 (Full Validation)		Standard	Standard
			S	_							1)		iger:	Project Manager			T Hax#:	email or hax#:
16.		1St	Analysis Request	A SIS	naly	Þ			-						0881	200 200	1 20	TIOIE #.
		Fax 505-345-4107	05-34	ax 5		6/6	lel. 505-345-3975	05-3	<u>e</u> .	-					1000	1222		UF COR
	109	Albuquerque, NM 87109	rque.	uque		, IT	4901 Hawkins NE -	NAME	017	4 4		12 12 1 tab	MOOK WA	Project #:	- 18 87 F- 7	ATI		
		.COM	www.nanenvironmental.com	TOTAL	-	1 2	WWW.		2	5		NIM W 1 NI W 1 1 1 1 1 1 1 1	and the	MIW CV	SALAN	751	Mailing Address:	Mailing
		i	İ							E.	-	· C		Project Name:				
AP	ANALYSIS LABORATORY	BO	7	SI	Z I	PF	ANAL	-				of Rush Dyne day	1	□ Standard	The same	WPX Greigy	WP.	Client
	-	1	1	-				-			_				actions income	0.00		

Air Bubbles (Y or N)

Chain-of-Custody Record

Turn-Around Time:



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

June 28, 2017

Debbie Watson

WPX Energy

721 S Main Ave

Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Facility

OrderNo.: 1706E06

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/27/2017 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

Brilish

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1706E06

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: SC-10R

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 1:10:00 PM

Lab ID:

1706E06-001

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.0	mg/Kg	1	6/27/2017 3:26:50 PM	G43825
Surr: BFB	98.1	70-130	%Rec	1	6/27/2017 3:26:50 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analyst	: JME
Diesel Range Organics (DRO)	28	9.7	mg/Kg	1	6/27/2017 12:35:36 PM	32505
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/27/2017 12:35:36 PM	32505
Surr: DNOP	110	70-130	%Rec	1	6/27/2017 12:35:36 PM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	RAA
Benzene	ND	0.020	mg/Kg	1	6/27/2017 3:26:50 PM	R43825
Toluene	ND	0.040	mg/Kg	1	6/27/2017 3:26:50 PM	R43825
Ethylbenzene	ND	0.040	mg/Kg	1	6/27/2017 3:26:50 PM	R43825
Xylenes, Total	ND	0.079	mg/Kg	1	6/27/2017 3:26:50 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 3:26:50 PM	R43825
Surr: 4-Bromofluorobenzene	97.5	70-130	%Rec	1	6/27/2017 3:26:50 PM	R43825
Surr: Dibromofluoromethane	104	70-130	%Rec	1.	6/27/2017 3:26:50 PM	R43825
Surr: Toluene-d8	110	70-130	%Rec	1	6/27/2017 3:26:50 PM	R43825

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J
- Analyte detected below quantitation limits Page 1 of 5
- P Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706E06

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: SC-14

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 1:04:00 PM

Lab ID:

1706E06-002

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	RAA
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	6/27/2017 3:56:20 PM	G43825
Surr: BFB	99.1	70-130	%Rec	1	6/27/2017 3:56:20 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	}			Analyst	JME
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	6/27/2017 12:57:46 PM	32505
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/27/2017 12:57:46 PM	32505
Surr: DNOP	110	70-130	%Rec	1	6/27/2017 12:57:46 PM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	RAA
Benzene	ND	0.020	mg/Kg	1	6/27/2017 3:56:20 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 3:56:20 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 3:56:20 PM	R43825
Xylenes, Total	ND	0.079	mg/Kg	1	6/27/2017 3:56:20 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 3:56:20 PM	R43825
Surr: 4-Bromofluorobenzene	96.7	70-130	%Rec	1	6/27/2017 3:56:20 PM	R43825
Surr: Dibromofluoromethane	105	70-130	%Rec	1	6/27/2017 3:56:20 PM	R43825
Surr: Toluene-d8	109	70-130	%Rec	1	6/27/2017 3:56:20 PM	R43825

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 5
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E06

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID MB-32505	SampT	ype: MI	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batcl	1D: 32	505	F	RunNo: 4	3810				
Prep Date: \ 6/27/2017	Analysis D	ate: 6/	27/2017	5	SeqNo: 1	380557	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		112	70	130			
Sample ID LCS-32505	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015M/D: DI	esel Rang	e Organics	
Client ID: LCSS	Batch	1D: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis D	ate: 6/	27/2017	8	SeqNo: 1	380558	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.9	73.2	114			
Surr: DNOP	5.0		5.000		100	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
- PQL Practical Quanitative Limit
- 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

Page 3 of 5

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E06

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 100ng Ics	Samp	Type: LC	s	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	•	h ID: R4		F	RunNo: 4	3825				
Prep Date:	Analysis [Date: 6/	27/2017	S	SeqNo: 1	380928	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.92	0.050	1.000	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			
Sample ID rb	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Sample ID rb Client ID: PBS	•	Гуре: МЕ h ID: R4			tCode: El		8260B: Voia	tiles Short	List	
•	•	h ID: R4		F		3825	8260B: Volar		List	
Client ID: PBS	Batc	h ID: R4	3825 27/2017	F	RunNo: 4	3825			List RPDLimit	Qual
Client ID: PBS Prep Date: Analyte	Batc Analysis [h ID: R4 Date: 6/	3825 27/2017	F	RunNo: 4 SeqNo: 1	3825 380935	Units: mg/K	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene	Batc Analysis I Result	h ID: R4 Date: 6/	3825 27/2017	F	RunNo: 4 SeqNo: 1	3825 380935	Units: mg/K	(g		Qual
Client ID: PBS Prep Date:	Batc Analysis [Result ND	h ID: R4 Date: 6/ PQL 0.025	3825 27/2017	F	RunNo: 4 SeqNo: 1	3825 380935	Units: mg/K	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene	Batc Analysis [Result ND ND	PQL 0.025 0.050	3825 27/2017	F	RunNo: 4 SeqNo: 1	3825 380935	Units: mg/K	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene	Batc Analysis I Result ND ND ND	PQL 0.025 0.050	3825 27/2017	F	RunNo: 4 SeqNo: 1	3825 380935	Units: mg/K	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Batc Analysis I Result ND ND ND ND ND ND	PQL 0.025 0.050	3825 27/2017 SPK value	F	RunNo: 4 SeqNo: 1 %REC	3825 380935 LowLimit	Units: mg/k HighLimit	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4	Batc Analysis I Result ND ND ND ND ND ND ND O.52	PQL 0.025 0.050	3825 27/2017 SPK value 0.5000	F	RunNo: 4 SeqNo: 1 %REC	3825 380935 LowLimit 70	Units: mg/K HighLimit	(g		Qual

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
- PQL Practical Quanitative Limit
- 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
- Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E06

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 2.5ug gro lcs

SampType: LCS

TestCode: EPA Method 8015D Mod: Gasoline Range

LCSS

Batch ID: G43825

RunNo: 43825

Client ID:

Analysis Date: 6/27/2017

Prep Date:

SeqNo: 1380925

Units: mg/Kg

130

%RPD **RPDLimit**

Analyte Gasoline Range Organics (GRO) Result 27

25.00

SPK value SPK Ref Val %REC

SPK value SPK Ref Val %REC

107 100 70 70

LowLimit

LowLimit

Qual

Surr: BFB

500

500.0

500.0

130

HighLimit

Sample ID rb

SampType: MBLK

RunNo: 43825

TestCode: EPA Method 8015D Mod: Gasoline Range

%RPD

Client ID: PBS

Batch ID: G43825

PQL

5.0

Units: mg/Kg

HighLimit

Prep Date: Analyte

Analysis Date: 6/27/2017 **PQL**

SeqNo: 1380926

RPDLimit

Qual

Gasoline Range Organics (GRO) Surr: BFB

ND 500

Result

5.0

100

70

130

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 5 of 5



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 Nur	mber: 1708E08		RcptNo:	1
Received By:	Anne Thome	6/27/2017 8:45:00	DAM .	am II-	_	
Completed By:	Anne Thome	6/27/2017 9:18:44	AM .	Ame St-	_	
Reviewed By:	a]	6127 17		Cina Ji		
Chain of Cu	stody					
1. Custody se	als intact on sam	ple bottles?	Yes 🗌	No 🗆	Not Present 🗹	
2. Is Chain of	Custody complete	9?	Yes 🗹	No 🗆	Not Present	
3. How was th	e sample delivere	ed?	Courter			
<u>Log In</u>						
4. Was an att	empt made to co	ol the samples?	Yes 🗹	No 🗆	na 🗆	
5. Were all sa	imples received a	t a temperature of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s)	in proper containe	or(s)?	Yes 🗹	No 🗆	·	
7. Sufficient s	ample volume for	indicated test(s)?	Yes 🗹	No 🗆		
8. Are sample	s (except VOA an	d ONG) properly preserved?	. Yes 🗹	No 🗆		
9. Was presei	vative added to b	ottles?	Yes 🗌	No 🗹	na 🗆	
10.VOA vials h	ave zero headspa	ice?	Yes 🗌	No 🗆	No VOA Vials	
11. Were any	sample containers	received broken?	Yes 🗆	No 🗹	# of preserved	
40 -			🖼		bottles checked	
	work match bottle spancies on chain		Yes 🗹	No 🗆	for pH: (<2 o	>12 unless noted)
•	•	ed on Chain of Custody?	Yes 🗹	No 🗆	Adjusted?	<u> </u>
14. Is it clear w	hat analyses were	requested?	Yes 🗹	No 🗆		
	iding times able to customer for aut		Yes 🗹	No 🗆	Checked by:	
0i-i H						
	diing (if applie	epancles with this order?	Yes 🗆	No 🗆	na 🗹	
				140 🗆		1
Perso By W	n Notified:	Da	'	Phone T Fax	☐ In Person	
Regar	E	Via		LIGHE Lax		
_	Instructions:					
17. Additional						J
18. <u>Cooler inf</u>						
Cooler N		Condition Seal Intect Seal No	Seal Date	Signed By		
1	2.7 G	cod Yes				

C	hain.	-of-Cu	stody Record	Turn-Around	Time:										_					
Client:	WPX	Energ	94	☐ Standard	Rush	Some day	 			A	NA	LY		5 L	AI	30			'AL OR'	
Mailing A	Address	721	S Main	_				490	01 H	w awkin							100			
			NM 87410	Project #:			1			5-345			Fax	•						
Phone #		333		NW LV	brook U	nit # (3) 1 129 facility							lysis			_				
email or	Fax#:d	lcborali	watson@wyxenergy.com	Project Mana	ger:	facility		رچ ا	(2)				(6)							\Box
QA/QC F	'ackage:		ان ا Level 4 (Full Validation)	Dwa			+ 310 's (8021)	(Gas or				(SIMIS)	PO4,SC	PCB's						,,
Accredit				Sampler: \mathcal{D}	Watson		價[ᇤᅵ	ΙĘ	=		٤̈́	Š	3082			Ì			3
□ NEL/		☐ Othe	or	On Ice:	'Dyres	CENO.			(S)	418.	2 , 5	ا ا	, Ĉ	S		[ફ	ŀ			ō
	(Type) _			Sample Len			日本	TBE		ğ	ğ	0 0 10 0		cide	 8	١٠/-				λ) s
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	BTEX + MEBE	BTEX + MTBE + TPH (Gas only)	TPH 80158 (GROCOBO) (MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAHS (6310 OF 6270 SIMS)	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
6.26.17	1310	Sorl	SC-10R	1-40z		-7/1	X		X					-				寸	\top	\dagger
6.26.17	1304	Snl	SC-14	1-40Z		762	X		X		1							\top	\top	\top
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Data	Timor	Dolinguish	d bu	Received by:		Date Time	ļ		<u></u>					<u></u>	<u> </u>	<u> </u>				للـــــــــــــــــــــــــــــــــــــ
Date:	Time:	Relinquish Relinquish	h Water	Received by:	to has	k White ma		nark	s:											
6/26/17	1840	1/h	Multed to Hall Environmental may be sub	contracted to other a	considered teleprotection	Date Time U6/21/14 es. This serves as notice of the	S DOSS	hilly	Amy eu	h-contra	octed d	ata wiii	ha dos	ety not		n tho a	nahéla:			



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

June 28, 2017

Debbie Watson WPX Energy 721 S Main Ave Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Facility

OrderNo.: 1706E04

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/27/2017 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

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-11

Project: NW Lybrook Unit #133H Facility Collection Date: 6/26/2017 1:46:00 PM

Lab ID: 1706E04-001 Matrix: SOIL Received Date: 6/27/2017 8:45:00 AM

Analyses Result POL Oual Units DF Date Analyzed

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: RAA
Gasoline Range Organics (GRO)	20	3.9	mg/Kg	1	6/27/2017 1:28:56 PM	G43825
Surr: BFB	103	70-130	%Rec	1	6/27/2017 1:28:56 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	}			Analyst	: JME
Diesel Range Organics (DRO)	110	9.2	mg/Kg	1	6/27/2017 10:41:42 AM	32505
Motor Oil Range Organics (MRO)	48	46	mg/Kg	1	6/27/2017 10:41:42 AM	32505
Surr: DNOP	91.6	70-130	%Rec	1	6/27/2017 10:41:42 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: RAA
Benzene	ND	0.019	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Xylenes, Total	ND	0.078	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Surr: 1,2-Dichloroethane-d4	106	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: 4-Bromofluorobenzene	108	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: Dibromofluoromethane	106	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: Toluene-d8	108	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 1 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-12

Project: NW Lybrook Unit #133H Facility Collection Date: 6/26/2017 1:52:00 PM

Lab ID: 1706E04-002 Matrix: SOIL Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analysi	: RAA
Gasoline Range Organics (GRO)	8.3	3.9	mg/Kg	1	6/27/2017 1:58:15 PM	G43825
Surr: BFB	97.6	70-130	%Rec	1	6/27/2017 1:58:15 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analyst	: JME
Diesel Range Organics (DRO)	36	9.1	mg/Kg	1	6/27/2017 11:09:57 AM	32505
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/27/2017 11:09:57 AM	32505
Surr: DNOP	92.8	70-130	%Rec	1	6/27/2017 11:09:57 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: RAA
Benzene	ND	0.019	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Xylenes, Total	ND	0.077	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Surr: 1,2-Dichloroethane-d4	105	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: 4-Bromofluorobenzene	90.8	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: Toluene-d8	109	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 2 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-13

 Project:
 NW Lybrook Unit #133H Facility
 Collection Date: 6/26/2017 1:59:00 PM

 Lab ID:
 1706E04-003
 Matrix: SOIL
 Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	RAA
Gasoline Range Organics (GRO)	15	3.5	mg/Kg	1	6/27/2017 2:27:46 PM	G43825
Surr: BFB	104	70-130	%Rec	1	6/27/2017 2:27:46 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analyst	JME
Diesel Range Organics (DRO)	94	9.9	mg/Kg	1	6/27/2017 11:37:58 AM	32505
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/27/2017 11:37:58 AM	32505
Surr: DNOP	91.0	70-130	%Rec	1	6/27/2017 11:37:58 AM	32505
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	RAA
Benzene	ND	0.018	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Toluene	ND	0.035	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Ethylbenzene	ND	0.035	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Xylenes, Total	ND	0.070	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: 4-Bromofluorobenzene	110	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: Toluene-d8	113	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Project: NW Lybrook Unit #133H Facility

Lab ID: 1706E04-004

Collection 1

Collection Date: 6/26/2017 2:05:00 PM Received Date: 6/27/2017 8:45:00 AM

Client Sample ID: TSP-14

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: RAA
Gasoline Range Organics (GRO)	24	3.4	mg/Kg	1	6/27/2017 2:57:21 PM	G43825
Surr: BFB	115	70-130	%Rec	1	6/27/2017 2:57:21 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;			Analys	t: JME
Diesel Range Organics (DRO)	76	9.6	mg/Kg	1	6/27/2017 12:06:05 PN	A 32505
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/27/2017 12:06:05 PN	1 32505
Surr: DNOP	91.1	70-130	%Rec	1	6/27/2017 12:06:05 PM	1 32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	t: RAA
Benzene	ND	0.017	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Toluene	ND	0.034	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Ethylbenzene	ND	0.034	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Xylenes, Total	ND	0.067	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: 4-Bromofluorobenzene	111	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: Toluene-d8	110	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825

Matrix: SOIL

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 4 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Troject.	brook Office	1133111								
Sample ID MB-32505	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch	ID: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis D	ate: 6/	27/2017	5	SeqNo: 1	380557	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	· LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10						•		
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		112	70	130			
Sample ID LCS-32505	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015M/D: DI	esel Rang	e Organics	
Client ID: LCSS	Batch	ID: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis D	ate: 6/	27/2017	S	SeqNo: 1	380558	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.9	73.2	114			
Surr: DNOP	5.0		5.000		100	70	130			

- 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
- PQL Practical Quanitative Limit
- 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
- Page 5 of 7

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 100ng Ics	Samp	Type: LC	s	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batc	h ID: R4	3825	F	RunNo: 4	3825				
Prep Date:	Analysis [Date: 6/	27/2017	5	SeqNo: 1	380928	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.92	0.050	1.000	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			
	V11				04.0					
Sample ID rb		уре: МЕ		Tes			8260B: Volat	tiles Short	List	
	Samp	ype: ME	BLK			PA Method	· · · · · · ·	tiles Short	List	
Sample ID rb	Samp	n ID: R4	3LK 3825	F	tCode: El	PA Method 3825	· · · · · · ·		List	
Sample ID rb Client ID: PBS	Samp ¹ Batc	n ID: R4	3LK 3825 27/2017	F	tCode: El	PA Method 3825	8260B: Vola		List RPDLimit	Qual
Sample ID rb Client ID: PBS Prep Date: Analyte	Samp ¹ Batc Analysis [n ID: R4 Date: 6/	3LK 3825 27/2017	F	tCode: El RunNo: 4: SeqNo: 1:	PA Method 3825 380935	8260B: Volat	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene	Samp ^a Batc Analysis I Result	n ID: R4 Date: 6/	3LK 3825 27/2017	F	tCode: El RunNo: 4: SeqNo: 1:	PA Method 3825 380935	8260B: Volat	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene Toluene	Samp Batc Analysis I Result ND	PQL 0.025	3LK 3825 27/2017	F	tCode: El RunNo: 4: SeqNo: 1:	PA Method 3825 380935	8260B: Volat	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene	Samp ^a Batc Analysis I Result ND ND	PQL 0.025 0.050	3LK 3825 27/2017	F	tCode: El RunNo: 4: SeqNo: 1:	PA Method 3825 380935	8260B: Volat	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene	Samp ^a Batc Analysis I Result ND ND	PQL 0.025 0.050	3LK 3825 27/2017	F	tCode: El RunNo: 4: SeqNo: 1:	PA Method 3825 380935	8260B: Volat	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Samp ¹ Batc Analysis [Result ND ND ND ND ND	PQL 0.025 0.050	3LK 3825 27/2017 SPK value	F	tCode: EI RunNo: 4: SeqNo: 1: %REC	PA Method 3825 380935 LowLimit	8260B: Volate Units: mg/K HighLimit	(g		Qual
Sample ID rb Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4	Samp ¹ Batc Analysis I Result ND ND ND ND ND ND ND 0.52	PQL 0.025 0.050	3825 27/2017 SPK value 0.5000	F	tCode: EI RunNo: 4: SeqNo: 1: %REC	PA Method 3825 380935 LowLimit	8260B: Volati Units: mg/K HighLimit	(g		Qual

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
- PQL Practical Quanitative Limit
- 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

Page 6 of 7

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 2.5ug gro Ics

SampType: LCS

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS

Batch ID: G43825

RunNo: 43825

Prep Date:

Analysis Date: 6/27/2017

SeqNo: 1380925

Units: mg/Kg

Qual

Analyte

Result **PQL** 27

SPK value SPK Ref Val 25.00 0

%REC LowLimit 107

HighLimit 130 %RPD **RPDLimit**

Gasoline Range Organics (GRO) Surr: BFB

500

500.0

100

70 130

70

Sample ID rb

SampType: MBLK

5.0

TestCode: EPA Method 8015D Mod: Gasoline Range RunNo: 43825

%RPD

Client ID: PBS Prep Date:

Batch ID: G43825 Analysis Date: 6/27/2017

SeqNo: 1380926

Units: mg/Kg

Analyte

Result **PQL**

5.0

SPK value SPK Ref Val %REC LowLimit

HighLimit

RPDLimit Qual

Gasoline Range Organics (GRO) Sun: BFB

ND 500

500.0

100

70

130

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Sample container temperature is out of limit as specified

Ε Value above quantitation range

Analyte detected below quantitation limits

Page 7 of 7

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

Sample Log-In Check List

Website: www.hallenvironmental.com **WPX ENERGY** Work Order Number: 1708E04 RcptNo: 1 Client Name: an Il-6/27/2017 8:45:00 AM Received By: **Anne Thome Anne Thome** 6/27/2017 9:08:40 AM Completed By: 6127 (17 Reviewed By: **Chain of Custody** No 🗆 Not Present 🗹 Yes 🗌 1. Custody seals intact on sample bottles? No 🗆 Not Present Yes 🗹 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier <u>Log in</u> No 🗆 NA 🗆 Yes 🗸 4. Was an attempt made to cool the samples? No 🗆 NA 🗍 Yes 🔽 5. Were all samples received at a temperature of >0° C to 6.0°C No 🗆 Yes 🔽 6. Sample(s) in proper container(s)? No 🗆 Yes 🗹 Sufficient sample volume for indicated test(s)? No 🗆 Yes 🗹 8. Are samples (except VOA and ONG) properly preserved? No 🗹 NA 🗆 Yes 🗌 9. Was preservative added to bottles? Yes 🗌 No 🗆 No VOA Vials 10. VOA vials have zero headspace? Yes 🗆 No 🗹 11. Were any sample containers received broken? # of preserved bottles checked Yes 🗹 No \square for pH: 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗆 Yes 🔽 13. Are matrices correctly identified on Chain of Custody? No 🗆 Yes 🗹 14, is it clear what analyses were requested? No 🗆 Checked by: Yes 🗹 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) No 🗆 NA 🗹 16. Was client notified of all discrepancies with this order? Yes 🗌 Person Notified: By Whom: 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** 2.7 Good Yes

C	hain-	of-Cu	stody Record	Turn-Around	Time:	•														
Client:	WPX	Ener	94	☐ Standard	Rush	Sameday. not #(33 H Facility											YEI RA			"
				Project Name):	U	•			W	ww.l	halle	nviror	men	tal.c	om				
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•		Azlec	NM 87410	Project #:		Faculity		Те	1. 50	5-345	-397	7 5	Fax	505	-345	410	7			
Phone :	#: 505	33.3	1880									Ana	alysis	Rec	lues	t				
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QA/QC F	Package:		5 . 0/	1	•		22	lo si	3];	က ကြ),	B'S						
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□ EDD	(Type)_					27	#	.BE	8	8	١٣	ō i		Ä	∣ହ					ح
·				Arob 27/17 Container	Preservative	1/47	BTEX + MATBE	BTEX + MTBE + TPH (Gas only)	崩	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	Acres 6 metals Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (SemI-VOA)				Air Bubbles (Y or N)
Date	Time	Matrix	Sample Request ID	Type and #	Type	HEAL No.	×	×	8	≥	ِ اڃ	နှုံ	≨ <u>ĕ</u>	4 P	8	s) o	. 1			[죑
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·- // (f necessary,	samples sub	mitted to Hall Environmental may be sub	contracted to other e	ocredited laboratori		possi	bility.	Any su	ıb-contr	acted o	lata wi	i be clea	rly not	teted o	n the a	naivtica	l report		



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

June 28, 2017

Debbie Watson WPX Energy 721 S Main Ave Aztec, NM 87410

TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Facility

OrderNo.: 1706E02

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/27/2017 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

Lab Order 1706E02

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-1

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 1:17:00 PM

Lab ID:

1706E02-001

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE		,		Analyst:	RAA
Gasoline Range Organics (GRO)	27	3.8	mg/Kg	1	6/27/2017 11:03:04 AM	G43825
Surr: BFB	105	70-130	%Rec	1	6/27/2017 11:03:04 AM	G43825
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	,			Analyst:	JME
Diesel Range Organics (DRO)	170	9.8	mg/Kg	1	6/27/2017 10:40:02 AM	32505
Motor Oil Range Organics (MRO)	85	49	mg/Kg	1	6/27/2017 10:40:02 AM	32505
Surr: DNOP	113	70-130	%Rec	1	6/27/2017 10:40:02 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst:	RAA
Benzene	ND	0.019	mg/Kg	1	6/27/2017 11:03:04 AM	R43825
Toluene	ND	0.038	mg/Kg	1	6/27/2017 11:03:04 AM	R43825
Ethylbenzene	ND	0.038	mg/Kg	1	6/27/2017 11:03:04 AM	R43825
Xylenes, Total	ND	0.076	mg/Kg	1	6/27/2017 11:03:04 AM	R43825
Surr: 1,2-Dichloroethane-d4	103	70-130	%Rec	1	6/27/2017 11:03:04 AM	R43825
Surr: 4-Bromofluorobenzene	104	70-130	%Rec	1	6/27/2017 11:03:04 AM	R43825
Surr: Dibromofluoromethane	99.3	70-130	%Rec	1	6/27/2017 11:03:04 AM	R43825
Surr: Toluene-d8	108	70-130	%Rec	1	6/27/2017 11:03:04 AM	R43825

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 8 J
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706E02

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: TSP-2 **CLIENT: WPX Energy**

Project: NW Lybrook Unit #133H Facility Collection Date: 6/26/2017 1:21:00 PM **Lab ID:** 1706E02-002 Matrix: SOIL Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qua	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE			-	Analyst	RAA
Gasoline Range Organics (GRO)	21	3.4	mg/Kg	1	6/27/2017 11:32:09 AM	G43825
Sum: BFB	113	70-130	%Rec	1	6/27/2017 11:32:09 AM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;			Analyst	JME
Diesel Range Organics (DRO)	140	9.8	mg/Kg	1	6/27/2017 11:05:49 AM	32505
Motor Oil Range Organics (MRO)	81	49	mg/Kg	1	6/27/2017 11:05:49 AM	32505
Surr: DNOP	115	70-130	%Rec	1	6/27/2017 11:05:49 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	RAA
Benzene	ND	0.017	mg/Kg	1	6/27/2017 11:32:09 AM	R43825
Toluene	ND	0.034	mg/Kg	1	6/27/2017 11:32:09 AM	R43825
Ethylbenzene	ND	0.034	mg/Kg	1	6/27/2017 11:32:09 AM	R43825
Xylenes, Total	ND	0.069	mg/Kg	1	6/27/2017 11:32:09 AM	R43825
Surr: 1,2-Dichloroethane-d4	106	70-130	%Rec	1	6/27/2017 11:32:09 AM	R43825
Surr: 4-Bromofluorobenzene	92.4	70-130	%Rec	1	6/27/2017 11:32:09 AM	R43825
Surr: Dibromofluoromethane	109	70-130	%Rec	1	6/27/2017 11:32:09 AM	R43825
Surr: Toluene-d8	106	70-130	%Rec	1	6/27/2017 11:32:09 AM	R43825

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 8
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706E02

Date Reported: 6/28/2017

6/27/2017 12:01:12 PM R43825

6/27/2017 12:01:12 PM R43825

6/27/2017 12:01:12 PM R43825

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-3

 Project:
 NW Lybrook Unit #133H Facility
 Collection Date: 6/26/2017 1:25:00 PM

 Lab ID:
 1706E02-003
 Matrix: SOIL
 Received Date: 6/27/2017 8:45:00 AM

POL Qual Units DF Date Analyzed Batch **Analyses** Result **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA Gasoline Range Organics (GRO) 26 3.9 mg/Kg 1 6/27/2017 12:01:12 PM G43825 6/27/2017 12:01:12 PM G43825 Surr: BFB 114 70-130 %Rec **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: JME Diesel Range Organics (DRO) 130 99 mg/Kg 6/27/2017 10:42:18 AM 32505 6/27/2017 10:42:18 AM 32505 Motor Oil Range Organics (MRO) 56 49 mg/Kg Sur: DNOP 110 70-130 %Rec 6/27/2017 10:42:18 AM 32505 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA Benzene 0.020 mg/Kg 6/27/2017 12:01:12 PM R43825 Toluene ND 0.039 mg/Kg 6/27/2017 12:01:12 PM R43825 mg/Kg 6/27/2017 12:01:12 PM R43825 Ethylbenzene ND 0.039 6/27/2017 12:01:12 PM R43825 Xylenes, Total ND 0.078 mg/Kg Surr: 1,2-Dichloroethane-d4 70-130 %Rec 6/27/2017 12:01:12 PM R43825 99.9

70-130

70-130

70-130

924

98.8

106

%Rec

%Rec

%Rec

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

Qualifiers:

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

- 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1706E02

Date Reported: 6/28/2017

6/27/2017 12:30:22 PM R43825

6/27/2017 12:30:22 PM R43825

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: TSP-4 **CLIENT: WPX Energy**

101

110

Project: NW Lybrook Unit #133H Facility Collection Date: 6/26/2017 1:29:00 PM 1706E02-004 Received Date: 6/27/2017 8:45:00 AM

Matrix: SOIL

Result **PQL Qual Units DF** Date Analyzed Batch **Analyses EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: RAA 6/27/2017 12:30:22 PM G43825 Gasoline Range Organics (GRO) 4.0 mg/Kg 6/27/2017 12:30:22 PM G43825 Surr: BFB 89.8 70-130 %Rec Analyst: JME **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** 6/27/2017 11:06:51 AM 32505 Diesel Range Organics (DRO) 1 9.5 mg/Kg Motor Oil Range Organics (MRO) ND 47 mg/Kg 6/27/2017 11:06:51 AM 32505 Surr: DNOP 107 70-130 %Rec 6/27/2017 11:06:51 AM 32505 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: RAA 0.020 6/27/2017 12:30:22 PM R43825 Benzene mg/Kg 6/27/2017 12:30:22 PM R43825 Toluene ND 0.040 mg/Kg 1 Ethylbenzene ND 0.040 mg/Kg 6/27/2017 12:30:22 PM R43825 6/27/2017 12:30:22 PM R43825 Xylenes, Total ND 0.080 mg/Kg Surr: 1,2-Dichloroethane-d4 104 70-130 %Rec 1 6/27/2017 12:30:22 PM R43825 6/27/2017 12:30:22 PM R43825 Surr: 4-Bromofluorobenzene 106 70-130 %Rec

70-130

70-130

%Rec

%Rec

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

Qualifiers:

Lab ID:

Surr: Dibromofluoromethane

Surr: Toluene-d8

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 8 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706E02

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-5

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 1:35:00 PM

Lab ID:

1706E02-005

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analysi	: RAA
Gasoline Range Organics (GRO)	29	3.9	mg/Kg	1	6/27/2017 12:59:39 PM	G43825
Surr: BFB	88.7	70-130	%Rec	1	6/27/2017 12:59:39 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;			Analyst	: JME
Diesel Range Organics (DRO)	55	9.7	mg/Kg	1	6/27/2017 11:31:35 AM	32505
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/27/2017 11:31:35 AM	32505
Surr: DNOP	107	70-130	%Rec	1	6/27/2017 11:31:35 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: RAA
Benzene	ND	0.020	mg/Kg	1	6/27/2017 12:59:39 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 12:59:39 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 12:59:39 PM	R43825
Xylenes, Total	ND	0.079	mg/Kg	1	6/27/2017 12:59:39 PM	R43825
Surr: 1,2-Dichloroethane-d4	105	70-130	%Rec	1	6/27/2017 12:59:39 PM	R43825
Surr: 4-Bromofluorobenzene	87.3	70-130	%Rec	1	6/27/2017 12:59:39 PM	R43825
Surr: Dibromofluoromethane	104	70-130	%Rec	1	6/27/2017 12:59:39 PM	R43825
Surr: Toluene-d8	112	70-130	%Rec	1	6/27/2017 12:59:39 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 8
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E02

28-Jun-17

Client:

WPX Energy

Project: NW Lyl	orook Unit #133H l	Facility							
Sample ID MB-32505	SampType: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch ID: 32	505	F	RunNo: 4:	3810		_		
Prep Date: 6/27/2017	Analysis Date: 6/			SeqNo: 1		Units: mg/k	(a		
Fiep Date. 6/2//2017	•			•		•	•		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10								
Motor Oil Range Organics (MRO)	ND 50								
Surr: DNOP	11	10.00		112	70	130			
Sample ID LCS-32505	SampType: LC	s	Tes	tCode: El	PA Method	8015M/D: DI	esel Rang	e Organics	
Client ID: LCSS	Batch ID: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis Date: 6/	27/2017	S	SeqNo: 1	380558	Units: mg/k	(g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45 10	50.00	0	89.9	73.2	114			
Surr: DNOP	5.0	5.000		100	70	130			
Sample ID 1706E02-001AM	S SampType: MS	 S	Tes	Code: EF	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: TSP-1	Batch ID: 32	505	F	lunNo: 4	3810				
Prep Date: 6/27/2017	Analysis Date: 6/	27/2017	s	SeqNo: 1	381504	Units: mg/K	(g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	220 10	49.90	166.9	100	55.8	122			
Surr: DNOP	5.7	4.990		113	70	130			
Sample ID 1706E02-001AM	SD SampType: MS	SD.	Tes	Code: EF	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: TSP-1	Batch ID: 32	505	R	lunNo: 4	3810				
Prep Date: 6/27/2017	Analysis Date: 6/	27/2017	s	eqNo: 1	381506	Units: mg/K	(g		
Analyte	Result PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	210 9.5	47.71	166.9	84.4	55.8	122	4.65	20	
Surr: DNOP	5.5	4.771		116	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

PQL Practical Quanitative Limit

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

Page 6 of 8

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E02

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

										-
Sample ID 100ng Ics	Samp ⁻	Гуре: LC	s	Tes	tCode: El	PA Method	8260B: Vola	iles Short	List	
Client ID: LCSS	Batc	h ID: R4	3825	F	RunNo: 4	3825				
Prep Date:	Analysis [Date: 6/	27/2017	S	SeqNo: 1	380928	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.92	0.050	1.000	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			
Sample ID rb	Samp	ype: ME	BLK	Test	Code: E	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batc	n ID: R4	3825	R	RunNo: 4	3825				
	Date		0020							
Prep Date:	Analysis [SeqNo: 1		Units: mg/K	g		
Prep Date: Analyte			27/2017				Units: mg/K	g %RPD	RPDLimit	Qual
Analyte	Analysis [)ate: 6/	27/2017	S	SeqNo: 1	380935	_	•	RPDLimit	Qual
Analyte Benzene	Analysis [PQL	27/2017	S	SeqNo: 1	380935	_	•	RPDLimit	Qual
Analyte Benzene Toluene	Analysis I Result ND	PQL 0.025	27/2017	S	SeqNo: 1	380935	_	•	RPDLimit	Qual
Analyte Benzene Toluene Ethylbenzene	Analysis D Result ND ND	PQL 0.025 0.050	27/2017	S	SeqNo: 1	380935	_	•	RPDLimit	Qual
•	Analysis I Result ND ND ND	PQL 0.025 0.050 0.050	27/2017	S	SeqNo: 1	380935	_	•	RPDLimit	Qual
Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Analysis I Result ND ND ND ND	PQL 0.025 0.050 0.050	27/2017 SPK value	S	SeqNo: 1:	380935 LowLimit	HighLimit	•	RPDLimit	Qual
Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4	Analysis I Result ND ND ND ND ND	PQL 0.025 0.050 0.050	27/2017 SPK value 0.5000	S	SeqNo: 1: %REC 103	380935 LowLimit 70	HighLimit	•	RPDLimit	Qual

- 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
- PQL Practical Quanitative Limit
- 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
- Page 7 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E02

28-Jun-17

Client:

WPX Energy

Project:	NW Lybr	ook Unit #	#133H	Facility							
Sample ID	2.5ug gro lcs	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	LCSS	Batcl	D: G4	13825	F	RunNo: 4	3825				
Prep Date:		Analysis D	ate: 6/	27/2017	5	SeqNo: 1	380925	Units: mg/l	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	5.0	25.00	0	107	70	130			
Surr: BFB	·	500		500.0		100	70	130			
Sample ID	rb	SampT	ype: MI	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	PBS	Batch	1 ID: G 4	3825	F	RunNo: 4	3825				
Prep Date:		Analysis D	ate: 6/	27/2017	\$	SeqNo: 1	380926	Units: mg/l	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rango	e Organics (GRO)	ND	5.0								
Surr: BFB		500		500.0		100	70	130			
Sample ID	1706e02-001ams	SampT	ype: MS	3	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	TSP-1	Batch	1D: G 4	3825	F	RunNo: 4	3825				
Prep Date:		Analysis D	ate: 6/	27/2017	. 8	SeqNo: 1	381597	Units: mg/l	< g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sasoline Range	e Organics (GRO)	46	3.8	19.01	27.05	100	63.2	128	· · ·		
Surr: BFB		440		380.2		115	70	130			
Sample ID	1706e02-001amsd	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	,
Client ID:	TSP-1	Batch	ID: G4	3825	F	RunNo: 4	3825				•
Prep Date:		Analysis D	ate: 6/	27/2017	S	SeqNo: 1	381598	Units: mg/l	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	44	3.8	19.01	27.05	89.6	63.2	128	4.57	20	
Surr: BFB		420		380.2		109	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
- PQL Practical Quanitative Limit
- 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

Page 8 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysts 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:	1708E02		RcptNo:	1
				a N		
Received By:	Anne Thome	8/27/2017 8:45:00 AM		Am II-	_	
Completed By:	Anne Thome	6/27/2017 8:57:42 AM		an Il-	_	
Reviewed By:	as	6127117				
Chain of Cur	An also					
Chain of Cus				M- [Net Dreset 7	
	ils intact on sample bott	des?	Yes ∐ Yes ☑	No □ No □	Not Present ☑ Not Present □	
	Custody complete?			NO L	Not Plesent	
3. How was the	sample delivered?		Courter			
<u>Log In</u>						
4. Was en atte	mpt made to cool the s	amp les ?	Yes 🗹	No 🗆	na 🗆	
5. Were all san	mples received at a tem	perature of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) in	n proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient sa	mple volume for indicat	ed test(s)?	Yes 🗹	No 🗆		
8. Are samples	(except VOA and ONG	i) properly preserved?	Yes 🗹	No 🗌		
9. Was preserv	ative added to bottles?		Yes 🗌	No 🗹	NA 🗆	
10 VOA viala ha	ave zero headspaca?		Yes 🗆	No 🗆	No VOA Vials 🗹	
	ample containers receiv	ed broken?	Yes 🗆	No 🗹 [
7 7, 110.0 2.0, 0.0					# of preserved bottles checked	
12. Does paperv	vork match bottle labels	?	Yes 🗹	No 🗆	for pH:	
,	pancies on chain of cus	**	🗔	No □	(<2 o≀ Adjusted?	>12 unless noted)
	correctly identified on (at analyses were reque		Yes M∠ Yes M∠	No 🗆		
1.2	at analyses were reque ling times able to be m		Yes 🗹	No 🗆	Checked by:	
	customer for authorizati			– [
<u>Special Hand</u>	ling (if applicable)	1				
16. Was client n	otified of all discrepanci	es with this order?	Yes 🗆	No 🗆	NA 🗹	
Person	Notified:	Date				
By Wh	om:	Via: [eMail 🗌	Phone 🗌 Fax	☐ In Person	
Regard			0.0.1110.0011400		· · · · · · · · · · · · · · · · · · ·	
Client	Instructions:					
17. Additional re	emarks:					
18. <u>Cooler Info</u>			_	-		
Cooler No			Seal Date	Signed By		
<u>[</u>	2.7 Good	Yes				

C	hain-	-of-Cu	stody Record	Turn-Around								_								
Client:		(Ena	94	☐ Standard Project Name	Rush	Saniday 1 # 133H Faulin				AN		.YS	5 I S	L	AE	30	1EN RA			
Mailing	Address	<u> 121</u>	SMain	NW LY	wooklin	nt #133H Faculin	1			wkins	NE -	Alb	uque	erque	э, N N	M 87				
Phono	#: 50		NM 87410					Те	1. 505	5-345-			ax : /sis			4107				
			.watson@upxcnergy.co	Project Mana	ger:			<u>\$</u>	(6)											
QA/QC I	Package:	<u> </u>	□ Level 4 (Full Validation)	D Wads			EMB 's (8021)	TPH (Gas only)	SO AN		SIMS)		PO4,SO	PCB's		ļ				
Accredi	tation	□ Othe		Sampler: D		2 A. C (4.170)		TPH (£ 5			,NO ₂ ,	8082			ľ			î
□ EDD		- Cale		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100	+	+	8	4 6	9.9	<u>%</u>	ပ္ခ်	les/		≬	}	1		٥
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX +松阳	BTEX + MTBE	TPH 8015B (GRO DOROXMRO	TPH (Method 418.1) FDB (Method 504.1)	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		;		Air Bubbles (Y or N)
26.17	1317	Sou	-3p-1	1-40-2	(بر)	الع-	X		X											\Box
1	1321		TSP-2		1	702	χ		K										\prod	П
	1325		TSP 3			703	X		ν.									T		П
	1329		TSP-4			704	V		F								7	1		П
1	1335	مل	TSP-5			765	1		4		1	_					1	1		
									$\frac{1}{2}$								\pm	\pm		Н
									_	-		_					$\overline{+}$	lacksquare		
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				ļ														丄		
Date:	Time:	Relinquish	ed by:	Received by:	L'act	Date Time	Rer	narks	S :											
1/26/17	1840		deld	Cak.	m-de	16/27/17								•						•
ı	f necessary,	samples sub	mitted to Hall Environmental may be sub-	contracted to other a	ccreanea laboratori	es. Ins serves as notice of thi	si boasi	wuny. A	eurry suit)-COMTEC	ed date	will b	e assi	у пота	KEC OU	100 01	naryucal	report.		



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

June 28, 2017

Debbie Watson WPX Energy 721 S Main Ave

Aztec, NM 87410 TEL: (505) 333-1880

FAX

RE: NW Lybrook Unit #133H Facility

OrderNo.: 1706E04

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/27/2017 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

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-11

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 1:46:00 PM

Lab ID:

1706E04-001

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	:: RAA
Gasoline Range Organics (GRO)	20	3.9	mg/Kg	1	6/27/2017 1:28:56 PM	G43825
Surr: BFB	103	70-130	%Rec	1	6/27/2017 1:28:56 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analyst	: JME
Diesel Range Organics (DRO)	110	9.2	mg/Kg	1	6/27/2017 10:41:42 AM	32505
Motor Oil Range Organics (MRO)	48	46	mg/Kg	1	6/27/2017 10:41:42 AM	32505
Surr: DNOP	91.6	70-130	%Rec	1	6/27/2017 10:41:42 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: RAA
Benzene	ND	0.019	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Xylenes, Total	ND	0.078	mg/Kg	1	6/27/2017 1:28:56 PM	R43825
Surr: 1,2-Dichloroethane-d4	106	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: 4-Bromofluorobenzene	108	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: Dibromofluoromethane	106	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825
Surr: Toluene-d8	108	70-130	%Rec	1	6/27/2017 1:28:56 PM	R43825

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 7 J
- Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Project: NW Lybrook Unit #133H Facility

Lab ID: 1706E04-002

Client Sample ID: TSP-12

Collection Date: 6/26/2017 1:52:00 PM

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL			Analysi	: RAA		
Gasoline Range Organics (GRO)	8.3	3.9	mg/Kg	1	6/27/2017 1:58:15 PM	G43825
Surr: BFB	97.6	70-130	%Rec	1	6/27/2017 1:58:15 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;			Analyst	: JME
Diesel Range Organics (DRO)	36	9.1	mg/Kg	1	6/27/2017 11:09:57 AM	32505
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/27/2017 11:09:57 AM	32505
Surr: DNOP	92.8	70-130	%Rec	1	6/27/2017 11:09:57 AM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	:: RAA
Benzene	ND	0.019	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Toluene	ND	0.039	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Ethylbenzene	ND	0.039	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Xylenes, Total	ND	0.077	mg/Kg	1	6/27/2017 1:58:15 PM	R43825
Surr: 1,2-Dichloroethane-d4	105	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: 4-Bromofluorobenzene	90.8	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825
Surr: Toluene-d8	109	70-130	%Rec	1	6/27/2017 1:58:15 PM	R43825

Matrix: SOIL

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 2 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy Client Sample ID: TSP-13

Project: NW Lybrook Unit #133H Facility Collection Date: 6/26/2017 1:59:00 PM

Lab ID: 1706E04-003 Matrix: SOIL Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: RAA
Gasoline Range Organics (GRO)	15	3.5	mg/Kg	1	6/27/2017 2:27:46 PM	G43825
Surr: BFB	104	70-130	%Rec	1	6/27/2017 2:27:46 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS	3			Analys	t: JME
Diesel Range Organics (DRO)	94	9.9	mg/Kg	1	6/27/2017 11:37:58 AM	1 32505
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/27/2017 11:37:58 AM	1 32505
Surr: DNOP	91.0	70-130	%Rec	1	6/27/2017 11:37:58 AM	1 32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	t: RAA
Benzene	ND	0.018	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Toluene	ND	0.035	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Ethylbenzene	ND	0.035	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Xylenes, Total	ND	0.070	mg/Kg	1	6/27/2017 2:27:46 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: 4-Bromofluorobenzene	110	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825
Surr: Toluene-d8	113	70-130	%Rec	1	6/27/2017 2:27:46 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- 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 Page 3 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1706E04

Date Reported: 6/28/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: WPX Energy

Client Sample ID: TSP-14

Project: NW Lybrook Unit #133H Facility

Collection Date: 6/26/2017 2:05:00 PM

Lab ID:

1706E04-004

Matrix: SOIL

Received Date: 6/27/2017 8:45:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	: RAA
Gasoline Range Organics (GRO)	24	3.4	mg/Kg	1	6/27/2017 2:57:21 PM	G43825
Surr: BFB	115	70-130	%Rec	1	6/27/2017 2:57:21 PM	G43825
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analys	: JME
Diesel Range Organics (DRO)	76	9.6	mg/Kg	1	6/27/2017 12:06:05 PM	32505
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/27/2017 12:06:05 PM	32505
Surr: DNOP	91.1	70-130	%Rec	1	6/27/2017 12:06:05 PM	32505
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	RAA
Benzene	ND	0.017	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Toluene	ND	0.034	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Ethylbenzene	ND	0.034	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Xylenes, Total	ND	0.067	mg/Kg	1	6/27/2017 2:57:21 PM	R43825
Surr: 1,2-Dichloroethane-d4	102	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: 4-Bromofluorobenzene	111	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825
Surr: Toluene-d8	110	70-130	%Rec	1	6/27/2017 2:57:21 PM	R43825

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

- 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
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 7 J
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID MB-32505	SampT	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch	ID: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis D	ate: 6/	27/2017	5	SeqNo: 1	380557	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Sun: DNOP	11		10.00		112	70	130			
Sample ID LCS-32505	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015M/D: Die	esel Range	o Organics	
Client ID: LCSS	Batch	ID: 32	505	F	RunNo: 4	3810				
Prep Date: 6/27/2017	Analysis D	ate: 6/	27/2017	S	SeqNo: 1	380558	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.9	73.2	114		,	
Surr: DNOP	5.0		5.000		100	70	130			

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 100ng Ics	Samp ⁻	Type: LC	s	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batc	h ID: R4	3825	F	RunNo: 4	3825				
Prep Date:	Analysis [Date: 6/	27/2017	9	SeqNo: 1	380928	Units: mg/h	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.92	0.050	1.000	0	91.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			
			_							
Sample ID rb	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Sample ID rb Client ID: PBS	•	Type: ME			tCode: El		8260B: Vola	tiles Short	List	
•	•	h ID: R4		F		3825	8260B: V olat		List	
Client ID: PBS Prep Date:	Batc	h ID: R4	3825 27/2017	F	RunNo: 4	3825			List RPDLimit	Qual
Client ID: PBS Prep Date: Analyte	Batci Analysis D	h ID: R4 Date: 6/	3825 27/2017	F	RunNo: 4: SeqNo: 1:	3825 380935	Units: mg/k	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene	Batci Analysis D Result	h ID: R4 Date: 6/	3825 27/2017	F	RunNo: 4: SeqNo: 1:	3825 380935	Units: mg/k	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Foluene	Batci Analysis E Result ND	h ID: R4 Date: 6/ PQL 0.025	3825 27/2017	F	RunNo: 4: SeqNo: 1:	3825 380935	Units: mg/k	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Foluene Ethylbenzene	Batci Analysis I Result ND ND	PQL 0.025 0.050	3825 27/2017	F	RunNo: 4: SeqNo: 1:	3825 380935	Units: mg/k	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene	Batci Analysis I Result ND ND ND	PQL 0.025 0.050	3825 27/2017	F	RunNo: 4: SeqNo: 1:	3825 380935	Units: mg/k	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene foluene Ethylbenzene Kylenes, Total	Batci Analysis D Result ND ND ND ND	PQL 0.025 0.050	3825 27/2017 SPK value	F	RunNo: 4 SeqNo: 1: %REC	3825 380935 LowLimit	Units: mg/K HighLimit	(g		Qual
Client ID: PBS Prep Date: Analyte Benzene Toluene Ethylbenzene Kylenes, Total Surr: 1,2-Dichloroethane-d4	Batci Analysis D Result ND ND ND ND ND	PQL 0.025 0.050	3825 27/2017 SPK value 0.5000	F	RunNo: 4: SeqNo: 1: %REC	3825 380935 LowLimit	Units: mg/K HighLimit 130	(g		Qual

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
- PQL Practical Quanitative Limit
- 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

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706E04

28-Jun-17

Client:

WPX Energy

Project:

NW Lybrook Unit #133H Facility

Sample ID 2.5ug gro ics	SampT	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch	ID: G4	13825	F	RunNo: 4	3825					
Prep Date:	Analysis D	ate: 6/	27/2017	SeqNo: 1380925			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	107	70	130				
Surr: BFB	500		500.0		100	70	130				

Sample ID rb	SampT	ype: ME	BLK	TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch	ID: G4	3825	F	RunNo: 4	3825				
Prep Date:	Analysis D	ate: 6/	27/2017	SeqNo: 1380926 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	500		500.0		100	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
- PQL Practical Quanitative Limit
- 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

Page 7 of 7



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	Wo	rk Order Number:	1706E04	•	RcptNo:	1
Received By:	Anne Thome	8/27/2	2017 8:45:00 AM		am Il-	_	
Completed By: Reviewed By:	Anne Thome		2017 9:06:40 AM 27 (17		am Il-	~	
Chain of Cus	tody						
1. Custody sea	ls intact on sampl	e bottles?		Yes 🗌	No 🗆	Not Present	
2. Is Chain of C	custody complete?			Yes 🗹	No 🗀	Not Present	
3. How was the	sample delivered	?		Courier			
<u>Log In</u>							
4. Was an atte	mpt made to cool	the samples?		Yes 🗹	No 🗆	NA 🗆	
5. Were all sam	nples received at a	a temperature of >0°	C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) in	proper container	(s)?		Yes 🗹	No 🗆		
7. Sufficient sar	mple volume for in	dicated test(s)?		Yes 🗹	No 🗆		
8. Are samples	(except VOA and	ONG) property pres	erved?	Yes 🗹	No 🗆		
9. Was preserve	ative added to bol	tles?		Yes 🗌	No 🗹	NA 🗆	
10.VOA vials ha	ve zero headspac	19 ?		Yes 🔲	No 🗆	No VOA Vials 🗹	
11. Were any sa	imple containers r	eceived broken?		Yes	No 🗹	# of preserved	
	ork match bottle i			Yes 🗹	No 🗆	bottles checked for pH:	
•	pancies on chain o			v G	No 🗆	(<2 o	r >12 unless noted)
• = -	at analyses were i	d on Chain of Custoo	iy?	Yes ☑	No 🗆	_	
	ing times able to			Yes 🗹	No 🗆	Checked by:	
	customer for author						
Special Handi	ing (if applica	nble)					
16. Was client no	otified of all discre	pancles with this ord	er? 	Yes 🗆	No 🗆	NA 🗹	7
Person	Notified:		Date				
By Who	2		Via: [_ eMail [Phone Fax	☐ In Person	
Regard	_						1
	nstructions:]
17. Additional re							
18. Cooler Infor		ondition Seal Inta	zt SealNo S	ieal Date	Signed By	ı	
1	2.7 Go:		A GOOD ING S	DAI DAW	Signed by	,	
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C	hain-	of-Cu	stody Record	Turn-Around	•	:	HALL ENVIRONMENTAL													
Client:	WPX	Ener	34	□ Standard Project Name	Rush	Sameday not #133 H Facility				A	NA! ww.h:	LY:	SIS	S L	A.	30				
Mailing	Address	721	S. Main	שנ שמ	brook W	nd-#1334		490)1 H	" awkin							109			
		Azlec	NM 87410	Project #:		Facility	1			5-345			•	•		4107				
Phone #	#: 505	333	1880			0						Anal	ysis	Req	uesi					
email o	r Fax#:	leboral	watsopwoxening	- Project Mana	ger:		(<u>Ş</u>	19 1				3							\Box
QA/QC F	Package:	•	☐ Level 4 (Full Validation)	D Wats	•		+ *FRES (8021)	(Gas o			SIMS)		PO4,SC	PCB's						.
Accredi					watson		盤	F			<u>- 8</u>		ĝ	087						
□ NEL	AP	□ Othe	r	On Ice:	EX 109	☑ No.		1 +	(S)	æ ;	3 8	_	18	8/8	<u> </u>	(A)				ᅵΖ
□ EDD	(Type)_				-	27	#	38.	8	8		ğ	Ž	ğ	8	1		1		اخ
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	BTEX + MATBE	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO) (DRO) WIRO	TPH (Method 418.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
6.26.17	1346	Sol	TSP-11	1-402_	~	001	X		X										\top	\Box
1	1352	1	TSP-12	i		162	K		X			1								\Box
	1359		TSP-13		·	703	4		X										T	\Box
工	1405	4	TSP-14	7		704	X		X			_							1	\prod
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Date:	Time: 1758	Relinquish Relinquish		Received by:	et ,	Date Time	Rer	narks	5 :											
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

June 26, 2017

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

FAX

RE: WPX NW Lybrook 133H

OrderNo.: 1706C78

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/23/2017 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1706C78

Date Reported: 6/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: TSP-6 (6/22/17)

Project:

WPX NW Lybrook 133H

Collection Date: 6/22/2017 1:00:00 PM

Lab ID:

1706C78-001

Matrix: SOIL

Received Date: 6/23/2017 7:25:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analy	st: JME
Diesel Range Organics (DRO)	37	9.2	mg/Kg	1	6/23/2017 10:30:16 A	M 32452
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/23/2017 10:30:16 A	M 32452
Surr: DNOP	88.2	70-130	%Rec	1	6/23/2017 10:30:16 A	M 32452
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	11	4.0	mg/Kg	1	6/23/2017 9:42:22 AM	32437
Surr: BFB	243	54-150	S %Rec	1	6/23/2017 9:42:22 AM	32437
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.020	mg/Kg	1	6/23/2017 9:42:22 AM	32437
Toluene	ND	0.040	mg/Kg	1	6/23/2017 9:42:22 AM	32437
Ethylbenzene	ND	0.040	mg/Kg	1	6/23/2017 9:42:22 AN	32437
Xylenes, Total	ND	0.080	mg/Kg	1	6/23/2017 9:42:22 AM	32437
Surr: 4-Bromofluorobenzene	120	66.6-132	%Rec	1	6/23/2017 9:42:22 AM	32437

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 9 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706C78

Date Reported: 6/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: WPX NW Lybrook 133H

Lab ID: 1706C78-002 **Client Sample ID:** TSP-7 (6/22/17)

Collection Date: 6/22/2017 12:50:00 PM

Received Date: 6/23/2017 7:25:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	st: JME
Diesel Range Organics (DRO)	54	9.7	mg/Kg	1	6/23/2017 10:55:06 A	VI 32452
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/23/2017 10:55:06 A	M 32452
Surr: DNOP	95.8	70-130	%Rec	1	6/23/2017 10:55:06 A	M 32452
EPA METHOD 8015D: GASOLINE RAM	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	10	3.7	mg/Kg	1	6/23/2017 10:06:13 Al	M 32437
Surr: BFB	244	54-150	S %Rec	1	6/23/2017 10:06:13 Al	M 32437
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.019	mg/Kg	1	6/23/2017 10:06:13 Al	M 32437
Toluene	ND	0.037	mg/Kg	1	6/23/2017 10:06:13 AI	M 32437
Ethylbenzene	ND	0.037	mg/Kg	1	6/23/2017 10:06:13 AI	M 32437
Xylenes, Total	ND	0.075	mg/Kg	1	6/23/2017 10:06:13 AI	M 32437
Surr: 4-Bromofluorobenzene	124	66.6-132	%Rec	1	6/23/2017 10:06:13 AI	M 32437

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 9 J
- Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706C78

Date Reported: 6/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: TSP-8 (6/22/17)

Project: Lab ID:

1706C78-003

WPX NW Lybrook 133H

Matrix: SOIL

Collection Date: 6/22/2017 12:45:00 PM

Received Date: 6/23/2017 7:25:00 AM

Analyses	Result	PQL (Qual Unit	s	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S				Analys	st: JME
Diesel Range Organics (DRO)	45	9.7	mg/l	Kg	1	6/23/2017 11:19:48 AI	M 32452
Motor Oil Range Organics (MRO)	ND	49	mg/l	Kg	1	6/23/2017 11:19:48 Al	M 32452
Surr: DNOP	81.9	70-130	%Re	ес	1	6/23/2017 11:19:48 AI	M 32452
EPA METHOD 8015D: GASOLINE RAI	NGE					Analys	st: NSB
Gasoline Range Organics (GRO)	12	4.1	mg/i	Kg	1	6/23/2017 10:29:50 Al	M 32437
Surr: BFB	257	54-150	S %Re	ec	1	6/23/2017 10:29:50 Al	M 32437
EPA METHOD 8021B: VOLATILES						Analys	st: NSB
Benzene	ND	0.020	mg/l	Kg	1	6/23/2017 10:29:50 AI	M 32437
Toluene	ND	0.041	mg/i	Kg	1	6/23/2017 10:29:50 At	M 32437
Ethylbenzene	ND	0.041	mg/l	Kg	1	6/23/2017 10:29:50 Af	M 32437
Xylenes, Total	ND	0.082	mg/l	Kg	1	6/23/2017 10:29:50 Af	d 32437
Surr: 4-Bromofluorobenzene	124	66.6-132	%Re	ec	1	6/23/2017 10:29:50 Af	M 32437

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
 - % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Analyte detected below quantitation limits Page 3 of 9 J
- P Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Lab Order 1706C78

Date Reported: 6/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: TSP-9 (6/22/17)

Project: WPX NW Lybrook 133H

Collection Date: 6/22/2017 12:40:00 PM

Lab ID: 1706C78-004

Matrix: SOIL

Received Date: 6/23/2017 7:25:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analy	st: JME
Diesel Range Organics (DRO)	60	10	mg/Kg	1	6/23/2017 11:44:34 A	M 32452
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/23/2017 11:44:34 A	M 32452
Surr: DNOP	86.6	70-130	%Rec	1	6/23/2017 11:44:34 A	M 32452
EPA METHOD 8015D: GASOLINE RAI	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	12	4.0	mg/Kg	1	6/23/2017 10:53:38 A	M 32437
Surr: BFB	257	54-150	S %Rec	1	6/23/2017 10:53:38 A	M 32437
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.020	mg/Kg	1	6/23/2017 10:53:38 A	M 32437
Toluene	ND	0.040	mg/Kg	1	6/23/2017 10:53:38 A	M 32437
Ethylbenzene	ND	0.040	mg/Kg	1	6/23/2017 10:53:38 A	M 32437
Xylenes, Total	ND	0.080	mg/Kg	1	6/23/2017 10:53:38 A	M 32437
Surr: 4-Bromofluorobenzene	124	66.6-132	%Rec	1	6/23/2017 10:53:38 A	M 32437

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

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 9 J
- Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1706C78

Date Reported: 6/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

WPX NW Lybrook 133H

Project: Lab ID:

1706C78-005

Matrix: SOIL

Collection Date: 6/22/2017 12:35:00 PM Received Date: 6/23/2017 7:25:00 AM

Client Sample ID: TSP-10 (6/22/17)

Analyses	Result	PQL (Qual Un	its	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	s				Analyst	: JME	
Diesel Range Organics (DRO)	79	10	mg	g/Kg	1	6/23/2017 12:09:08 PM	32452
Motor Oil Range Organics (MRO)	ND	51	mg	g/Kg	1	6/23/2017 12:09:08 PM	32452
Surr: DNOP	87.9	70-130	% I	Rec	1	6/23/2017 12:09:08 PM	32452
EPA METHOD 8015D: GASOLINE RAN	IGE					Analyst	NSB
Gasoline Range Organics (GRO)	10	3.9	mg	g/Kg	1	6/23/2017 11:17:26 AM	32437
Surr: BFB	247	54-150	S %	Rec	1	6/23/2017 11:17:26 AM	32437
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	0.020	mg	g/Kg	1	6/23/2017 11:17:26 AM	32437
Toluene	ND	0.039	mg	g/Kg	1	6/23/2017 11:17:26 AM	32437
Ethylbenzene	ND	0.039	mg	g/Kg	1	6/23/2017 11:17:26 AM	32437
Xylenes, Total	ND	0.079	mg	g/Kg	1	6/23/2017 11:17:26 AM	32437
Surr: 4-Bromofluorobenzene	124	66.6-132	%F	Rec	1	6/23/2017 11:17:26 AM	32437

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

- 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
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706C78 26-Jun-17

Client:

Rule Engineering LLC

Project:	WPX NV	/ Lybrook	133H													
Sample ID	LCS-32452	SampTy	pe: L0	cs	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics						
Client ID:	LCSS	Batch	ID: 32	2452	F											
Prep Date:	6/23/2017	Analysis Da	ite: 6	/23/2017	5	SeqNo: 1	377774	Units: mg/Kg								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
	Organics (DRO)	51	10		0	102	73.2	114								
Surr: DNOP		4.6		5.000		91.3	70	130								
Sample ID	MB-32452	SampTy	pe: M	BLK	TestCode: EPA Method 8015M/D: Diesel Range Organics											
Client ID:	PBS	Batch	ID: 32	2452	F	RunNo: 4	3736									
Prep Date:	6/23/2017	Analysis Da	te: 6	/23/2017	5	SeqNo: 1	377775	Units: mg/K	(g							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
•	Organics (DRO)	ND	10													
-	e Organics (MRO)	ND	50			07.0	70	420								
Surr: DNOP		8.7		10.00		87.3	70	130		<u> </u>	<u> </u>					
Sample ID	MB-32440	SampTy	pe: M	BLK	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 43735											
Client ID:	PBS	Batch	ID: 32	2440	F	RunNo: 4	3735									
Prep Date:	6/22/2017	Analysis Da	te: 6	/23/2017	8	SeqNo: 1	377776	Units: %Re								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Surr: DNOP		8.0		10.00		79.5	70	130								
Sample ID	LCS-32440	SampTy	pe: LC	cs	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics						
Client ID:	LCSS	Batch	ID: 32	2440	F	RunNo: 4	3735									
Prep Date:	6/22/2017	Analysis Da	te: 6	/23/2017	5	SeqNo: 1	377777	Units: %Re								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Sun: DNOP		3.8		5.000		75.3	70	130								
Sample ID	1706C78-001AMS	SampTy	pe: M	s	Tes	tCode: El	PA Method	8015M/D: Die	sel Rang	e Organics						
Client ID:	TSP-6 (6/22/17)	Batch	ID: 32	2452	F	RunNo: 4	3735									
Prep Date:	6/23/2017	Analysis Da	te: 6 .	/23/2017	8	SeqNo: 1	378445	Units: mg/K	g							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
-	Organics (DRO)	86	9.5		36.55	105	55.8	122								
Surr: DNOP		3.8		4.730		79.8	70	130								
Sample ID	1706C78-001AMS) SampTy	pe: M	SD	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	o Organics						
Client ID:	TSP-6 (6/22/17)	Batch	ID: 32	2452	F	RunNo: 4	3735									
Prep Date:	6/23/2017	Analysis Da	te: 6	/23/2017	8	SeqNo: 1	378446	Units: mg/Kg								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Diesel Range (Organics (DRO)	97	9.2	46.13	36.55	131	55.8	122	11.8	20	S					

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits

Page 6 of 9

- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706C78

26-Jun-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID 1706C78-001AMSD

SampType: MSD

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: TSP-6 (6/22/17) Batch ID: 32452

RunNo: 43735

Prep Date: 6/23/2017

Analysis Date: 6/23/2017

SeqNo: 1378446 Units: mg/Kg

Analyte

Result

PQL

SPK value SPK Ref Val %REC LowLimit %RPD

RPDLimit

Qual

83.2

70

HighLimit

Surr: DNOP

4.613

3.8

130

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Ε Value above quantitation range

Analyte detected below quantitation limits

Page 7 of 9

Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1706C78

26-Jun-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID MB-32437

SampType: MBLK

PQL

5.0

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: 32437

RunNo: 43758

Units: mg/Kg

HighLimit

Prep Date: 6/22/2017

Analysis Date: 6/23/2017

SeqNo: 1378794

SPK value SPK Ref Val %REC

%RPD **RPDLimit**

Analyte Gasoline Range Organics (GRO)

ND

117

LowLimit

54

Qual

Surr: BFB

1200

Result

1000

150

Sample ID LCS-32437

SampType: LCS

RunNo: 43758

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

LCSS

Batch ID: 32437

Units: mg/Kg

Prep Date: 6/22/2017

Analysis Date: 6/23/2017

5.0

SeqNo: 1378795

76.4

54

%RPD

Analyte Gasoline Range Organics (GRO) Result PQL 24

SPK value SPK Ref Val 25.00

%REC LowLimit 96.0

HighLimit 125 **RPDLimit** Qual

Surr: BFB

1300

SampType: MS

1000

20.00

800.0

131 TestCode: EPA Method 8015D: Gasoline Range

150

Client ID:

TSP-6 (6/22/17)

Sample ID 1706C78-001AMS

Batch ID: 32437

RunNo: 43758

Prep Date: Analyte

Surr: BFB

Analysis Date: 6/23/2017 PQL

10.86

SPK value SPK Ref Val

SeqNo: 1378796

Units: mg/Kg

RPDLimit HighLimit %RPD LowLimit Qual 77.8 128

Gasoline Range Organics (GRO)

Sample ID 1706C78-001AMSD

SampType: MSD

TestCode: EPA Method 8015D: Gasoline Range

%REC

97.7

263

97.4

265

Prep Date:

Surr: BFB

Client ID: TSP-6 (6/22/17) Batch ID: 32437

4.0

RunNo: 43758

SeqNo: 1378797

Units: mg/Kg

150

150

Analysis Date: 6/23/2017 SPK value SPK Ref Val Result **PQL** Analyte Gasoline Range Organics (GRO) 30 4.0

2100

Result

30

2100

20.00 10.86

800.0

%REC

HighLimit LowLimit 77.8 54

%RPD 128 0.211

0

Qual **RPDLimit** 20 0

s

S

Oualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Н

ND Not Detected at the Reporting Limit Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits Page 8 of 9

P Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1

1706C78 26-Jun-17

Client:

Rule Engineering LLC

Project:

WPX NW Lybrook 133H

Sample ID MB-32437	•	Type: ME		Tes									
Client ID: PBS Prep Date: 6/22/2017	Batc Analysis [h ID: 32 Date: 6/		•	RunNo: 4 SeqNo: 1		Units: mg/h	(g					
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		113	66.6	132						
Sample ID LCS-32437	Samp1	ype: LC	s	Tes	tCode: El	PA Method	8021B: Vola	tiles					
Client ID: LCSS	Batcl	n ID: 32	437	F	RunNo: 4								
Pren Date: 6/22/2017	Analysis F	hato: 61	22/2047	c	Seable: 4279942 Units: malks								

1 '	•									
Client ID: LCSS	Batcl	h ID: 32	437	F	RunNo: 4	3758				
Prep Date: 6/22/2017	Analysis D	Date: 6/	23/2017	8	SeqNo: 1	378812	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.5	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80	120			
Xylenes, Total	nes, Total 2.9 0.10 3.000		0	96.9	80	120				
Surr: 4-Bromofluorobenzene	1.2		1.000		120	66.6	132			

Sample ID 1706C78-002AM	S Samp	Гуре: М\$	3	TestCode: EPA Method 8021B: Volatiles									
Client ID: TSP-7 (6/22/17)	Batc	h ID: 32	437	F	RunNo: 4								
Prep Date:	Analysis [Date: 6/	23/2017	S	SeqNo: 1	378813	I3 Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	0.76	0.019	0.7479	0	102	61.5	138						
Toluene	0.77	0.037	0.7479	0.01369	101	71.4	127						
Ethylbenzene	0.76	0.037	0.7479	0.03088	97.6	70.9	132						
Xylenes, Total	2.3	0.075	2.244	0.04166	99.3	76.2	123						
Surr: 4-Bromofluorobenzene	0.98		0.7479		131	66.6	132						

Sample ID 1706C78-002AM	ISD Samp	Гуре: М \$	SD	TestCode: EPA Method 8021B: Volatiles											
Client ID: TSP-7 (6/22/17)	Batc	h ID: 32	437	F	RunNo: 4										
Prep Date:	Analysis [Date: 6/	23/2017	8	SeqNo: 1	378814	Units: mg/k	(g							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Benzene	0.75	0.019	0.7479	0	99.9	61.5	138	1.78	20						
Toluene	0.74	0.037	0.7479	0.01369	97.8	71.4	127	3.07	20						
Ethylbenzene	0.74	0.037	0.7479	0.03088	94.4	70.9	132	3.19	20						
Xylenes, Total	nes, Total 2.2 0.075 2.244						123	2.13	20						
Surr: 4-Bromofluorobenzene	0.7479		130	66.6	132	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
- PQL Practical Quanitative Limit
- 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

Page 9 of 9



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:	1706C78		RcptNo:	1
Received By:	Anne Thome	6/23/2017 7:25:00 AM		an Ilm	_	
Completed By:	Anne Thome	6/23/2017 8:26:57 AM		Aone II		
Reviewed By:	M	6125117		Cane Ji		
Chain of Cu	<u>stody</u>					
1. Custody se	als intact on sample bottles?		Yes 🗌	No 🗆	Not Present 🗹	
2. Is Chain of	Custody complete?		Yes 🗹	No 🗀	Not Present	
3. How was th	ne sample delivered?		Courier			
Log in						
4. Was an att	lempt made to cool the samples	?	Yes 🗹	No 🗆	na 🗆	
5. Were all sa	imples received at a temperatur	e of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s)	in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient s	ample volume for Indicated test	(s)?	Yes 🗹	No 🗆		
8. Are sample	s (except VOA and ONG) prope	erly preserved?	Yes 🗹	No 🗆		
9. Was presen	rvative added to bottles?		Yes 🗌	No 🗹	NA 🗆	
10.VOA vials h	nave zero headspace?		Yes 🗌	No 🗆	No VOA Vials	
11. Were any s	sample containers received brok	en?	Yes	No 🗹	# of preserved bottles checked	
-	work match bottle labels? epancies on chain of custody)		Yes 🗹	No 🗆	for pH:	r >12 unless noted)
13. Are matrice	s correctly identified on Chain o	f Custody?	Yes 🗹	No 🗀	Adjusted?	
14. Is it clear w	hat analyses were requested?		Yes 🗹	No 🗆		
	Iding times able to be met? customer for authorization.)		Yes 🗹	No 🗆	Checked by:	
Special Hand	dling (if applicable)					
16. Was client	notified of all discrepancies with	this order?	Yes 🗌	No 🗆	na 🗹	
Perso	on Notified:	Date			· · · · · ·	-
By W	hom:	Via:] eMail [Phone Fax	In Person	
Rega	rding:			AND DESCRIPTION OF THE PROPERTY OF THE PROPERT		
Client	Instructions:			"		_
17. Additional	remarks:					
18. <u>Cooler Inf</u>	ormation					
Cooler N			ieal Date	Signed By		
1 	1.0 Good Ye			 	 	

7/19/1/	<u>†</u>	Um 1/1 1837 What W								<u>So. 1</u>	4/22/17 1240 Sp.1 TSP-9	Soi 1	50,1	1300 5011	Matrix	□ EDD (Type)	C NELAP C Other	Þ	▼ Standard	QA/QC Package: Deboth. Wodson@ worerd of Com river warage:	Phone #: (395) 716-2787	Farminghon, NM 67401	maining Audiess. 501 Airport		Hule Engineering, UC	Client Client Client Client Client
						1				TSP-10 (6122117)	·9 (6/22/17)	TSP-8 (6/22/17)	TSP-7(6/22/17)	TSP-6(6/22/17)	Sample Request ID				☐ Level 4 (Full Validation)	LOS Harman Buch		401	* 205			cord
	Received by:	· -								۲		_		MACH KIT	Container Type and #	Sample Temperature:	On lœ:	Sampler: He	Heather Woods	Lioject Mana		r oject m.	EPX ZY		☐ Standard Project Name:	lum-Around lime:
706	>	act							,	1-			_	mon/Hours	Preservative Type	erature: /. /	X Yes	sampler: Heather Woods	Woods	ye.		•	WPX NW Lybrook #133K			lime:
1927	į.	1921 1837]/							212	な	COS	702	20	HEAL NO.	2	□No	ods					#1334		A Rush Jame Day	X
							:			×	×	l.	×	×	BTEX +			-	<u> </u>							
	PLS:	Remarks:							<u> </u>		×	×		L	BTEX + MT						<u> </u>	Tel.	4901	i		
	Debbia Wadson	118	-	_	-			-	-	<u>×</u>			×	×	TPH 8015B	•			₹ ○ /	WKC	"	Tel. 505-345-3975	4901 Hawkins NE			
	790	=				H		-	 		一	\vdash	-	\vdash	EDB (Metho	-						345	kins	¥	A	H
	4	to Wex	<u> </u>			Н		 	-						PAH's (831)			·-	SIM	S)		3975		www.hallenvironmental.com	NALYSIS	E
)ade	S.													RCRA 8 Me						Analysis		r Alt	llen	3	M
	202														Anions (F,C	I,NO) ₃ ,N	102	PO	4,SO ₄		Fax	nbnc	/ich	515	7
	_														8081 Pestic	ide	3 / 8	082	PC	B's	Kequest	Fax 505-345-4107	Albuquerque, NM 87109	ment		ENVIRONMENTA
															8260B (VO	۱)					tsen	345	e, N	al.co	AE	<u>õ</u>
															8270 (Semi	-VO	A)					4107	И 87	Ĕ	LABORATOR	Z
												<u> </u>											109		R	Ē
			<u> </u>							igspace		<u> </u>	_		<u> </u>										7	Z
			L					$oxed{oxed}$	L																ĭ	Ď

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laborationes. This serves as notice of this possibility. Any sub-contracted data will be dearly notated on the analytical report