

AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



App Number: pJK1424834050

3RP - 1013

Williams Four Corners, LLC

3/1/2018

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

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

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			Rele	ease Notific	ation	and Co	rrective A	ction							
						OPERA	ГOR		Initia	al Report		Final Report			
Name of Co	ompany: W	illiams Fou	r Corne	rs LLC		Contact: Kijun Hong									
		Dr., Farm				Telephone No.: (505) 632-4475									
Facility Nat	ne: Later	al L-2				Facility Typ									
Surface Ow	ner: BLM			Minera	Owne	r			BLM P	roject No.	NMN	M0013315			
				LOCA	TIOI	OF REI	LEASE								
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/W	est Line	County					
1	14	28N	10W	T - 414 - 3 - 1	26.6602	T - 24 1	105 0505			San Juan					
						Longitude									
				NAT	URE	OF RELI									
Type of Rele							Release: 144 MC			Recovered: (
Source of Re	lease: Pipel	ine				Committee of the Commit	lour of Occurrence at 4:00 PM			Hour of Dis					
Was Immedia	ate Notice (Given?				If YES, To									
			Yes	No Not Re	equired	NA									
By Whom?	NA					Date and H	lour: NA								
Was a Water	course Reac	hed?				If YES, Volume Impacting the Watercourse.									
			Yes 🛚	No		NA									
If a Watercou	irse was Im	pacted, Descr	ibe Fully.*			1									
NA															
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				as been repaired											
Describe Are	a Affected :	and Cleanun A	Action Tak	en *											
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public health	or the envir	conment. The	accentanc	e of a C-141 repo	ort by the	NMOCD m	arked as "Final Re	eport" do	es not reli	ieve the one	rator of	Cliability			
should their o	perations h	ave failed to a	dequately	investigate and r	emediate	contamination	on that pose a thre	eat to gro	und water	r. surface wa	iter, hu	man health			
or the environ	nment. In a	ddition, NMC	CD accep	tance of a C-141	report de	oes not relieve	e the operator of i	responsib	ility for c	ompliance v	vith any	other			
federal, state,	or local lav	vs and/or regu	lations.												
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Printed Name	· Kiiun Ho	nσ								>					
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Title: Enviro	nmental S _I	pecialist			Approval Date: 831307 Expiration Date:										
E-mail Addre	ss: <mark>kijun.h</mark>	ong@william	s.com		Conditions of Approval:										
Date: 08/2/20	17	Pho	ne: (505)	632-4475		Attached									
		1110								1					

* Attach Additional Sheets If Necessary

NVF 1734 832528 OIL CONS. DIV DIST. 3

AUG 07 2017

Operator/Responsible Party,

The OCD has received the form C-141 you provided on regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete <u>division-approved corrective action</u> for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District III office in 30 days on or before him and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- •Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.
- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.
- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465

jim.griswold@state.nm.us

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

FEB 1 2 20 18 Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification	on and Co	rrective A	ction					
	OPERATOR Initial Report Final Repo							
Name of Company: Williams Four Corners LLC	Contact: Ki							
Address: 1755 Arroyo Dr., Farmington, NM 87413		No.: (505) 632-4	1475					
Facility Name: Kutz Government 7	Facility Typ	e: Pipeline						
Surface Owner: State of NM Mineral Own	ner		В	BLM P	roject No.			
LOCATIO	ON OF RE	LEASE						
Unit Letter Section Township Range Feet from the Nor 3 27N 10W	th/South Line	Feet from the	East/West	t Line	County San Juan			
Latitude 36.5985								
Type of Release: Natural Gas	Volume of		Vo	olume R	Recovered: 0 MCF			
Type of Release. Natural Gas	Gas loss ca	alculation pendir timated at 10 BF	ng	Junie 1	covered. V Mer			
Source of Release: Pipeline		lour of Occurrenc a 2:30 PM			Hour of Discovery: 3 @ 3:30 PM			
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required		Whom? Vanes	sa Fields					
By Whom? Kijun Hong	Date and H	Date and Hour: 1/26/2018@4:36PM						
Was a Watercourse Reached? ☐ Yes ☐ No		If YES, Volume Impacting the Watercourse. Approximately 1 BBL of produced water/condensate mix impacted a dry wash to the south of the location.						
If a Watercourse was Impacted, Describe Fully.* Approximately 10 E and ran about 180ft down the lease road to reached the dry wash to Describe Cause of Problem and Remedial Action Taken.* Failure of the pipeline resulted in a gas/liquids release which ran do location. Upon discovery, the well was shut in, and the upstream m of pipeline. A crew was dispatched the next morning to begin remediately a company of the progress.	wn the lease re	impacted about	60ft of the	wash. a dry w	ash to the south of the			
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by should their operations have failed to adequately investigate and remedi	to the best of my knowledge and understand that pursuant to NMOCD rules and the notifications and perform corrective actions for releases which may endanger the NMOCD marked as "Final Report" does not relieve the operator of liability interest contamination that pose a threat to ground water, surface water, human health the does not relieve the operator of responsibility for compliance with any other							
Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist:							
Printed Name: Kijun Hong	V Cm							
Title: Environmental Specialist	Approval Date: 2/22/2018 Expiration Date:							
E-mail Address: kijun.hong@williams.com	Conditions of Approval:				Attached A			
Date: 2/8/2018 Phone: (505) 632-4475								
Attach Additional Sheets If Necessary	NVF 1805335187							

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 12200 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number has been assigned. Please refer to this case number in all future correspondence.

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for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

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Jim Griswold

OCD Environmental Bureau Chief 1220 South St. Francis Drive Santa Fe, New Mexico 87505 505-476-3465 jim.griswold@state.nm.us <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 811 S. First St., Artesia, NM 88210 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. Santa Fe, NM 87505

Release Notification and Corrective Action

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

		OPERA'			Initia	al Report Final Report			
Name of Company Williams Four Corners LLC		Contact Michael Hannan							
Address 1755 Arroyo Drive			No. 505-632-48						
Facility Name Royce Canyon Former Drip Tank Location	I	Facility Type Former Tank Battery							
Surface Owner Private Mineral O	wner				API No).			
LOCA	TION	OF RE	LEASE						
Unit Letter Section Township Range E 11 29N 6W Feet from the	North/S	th/South Line Feet from the East/West Line County San Juan							
Latitude 36.741	.548° N	Longitud	e -107.43981°	W					
NAT	URE	OF REL	EASE						
Type of Release Petroleum Hydrocarbons			Release unknow	/n	Volume I remedial	Recovered see attached			
Source of Release Historical Operations		Date and I	lour of Occurrence	ce		Hour of Discovery			
		Unknown			June 27, 2	2017			
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Re	equired	If YES, To	Whom?						
By Whom?		Date and I	Iour						
Was a Watercourse Reached? ☐ Yes ☑ No		If YES, Volume Impacting the Watercourse. Not Applicable							
		Not Applic	aute						
If a Watercourse was Impacted, Describe Fully.*					M	MOCD			
Not Applicable					IVI	עטטווו			
Describe Cause of Problem and Remedial Action Taken.*					HEB	2 8 2018			
See attached remedial report.									
Describe Area Affected and Cleanup Action Taken.*					3 1 3 1 K	ICT III			
See attached remedial report.									
I hereby certify that the information given above is true and complete	lata to th	a best of my	knowledge and u	ındomton	d that num	guest to NMOCD sules and			
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.									
Signature: Michael Hannan			OIL CON	SERV	ATION	DIVISION			
Printed Name: Michael Hannan		Approved by	Environmental S	Specialist		my fr &			
Title: Engineer, Sr.	Approval Date: 2/28/18 Expiration Mate:								
E-mail Address: michael.hannan@williams.com	Conditions of Approval: Attached								
Date: 2/28/2018 Phone: 505-632-480	7								
Attach Additional Sheets If Necessary ## NCS \	1256	4145	6						





848 East 2nd Avenue Durango, Colorado 81301 T 970 385 1096 / F 303 433 1432

February 16, 2018

Mr. Cory Smith New Mexico Oil Conservation Division 1000 Rio Brazos Road Aztec, New Mexico 87410

RE: Soil Boring Delineation and Excavation Confirmation Sampling Summary Report Royce Canyon Former Drip Tank Williams Four Corners LLC Rio Arriba County, New Mexico

Dear Mr. Smith:

LT Environmental, Inc. (LTE), on behalf of Williams Four Corners LLC (Williams), conducted a preliminary subsurface investigation consisting of soil borings and subsequent confirmation soil sampling events following excavation remediation activities at the Royce Canyon Former Drip Tank (Site) located in the southwest quarter of the northwest quarter of Section 11, Township 29 North, and Range 6 West in the San Juan Basin in Rio Arriba County, New Mexico (Figure 1).

BACKGROUND

Soil at the Site was believed to be impacted by petroleum hydrocarbons due to historical releases from a former drip tank in use at the convergence of several natural gas lines. Suspected impacted soil was confirmed by a 5-point composite soil sample collected on October 5, 2015, containing a concentration of 1,700 milligram per kilogram (mg/kg) total petroleum hydrocarbons (TPH)-diesel range organics (DRO). No benzene, toluene, ethylbenzene, or total xylenes (BTEX) or TPH-gasoline range organics (GRO) and TPH-motor oil range organics (MRO) were detected. Based on those results, Williams advanced potholes to approximately 4 feet to 5 feet below ground surface (bgs) in the corners of the former drip tank bermed area. Field observations indicated the northeast corner of the area was impacted, but no visual soil impacts were observed in the northwest, southwest, or southeast corners during the preliminary shallow subsurface investigation.

Groundwater at the Site is estimated to be greater than 100 feet bgs. There is no water well or livestock well within 1,000 feet of the Site. The closest livestock well is approximately 1,459 feet northwest of the Site. The nearest surface water is a dry wash located approximately 258 feet southwest of the Site. Based on these criteria, New Mexico Oil Conservation Division (NMOCD) site ranking for remediation action levels is a 10. Per this ranking, the NMOCD remediation action levels for benzene is 10 mg/kg, total BTEX is 50 mg/kg, and total TPH (sum of TPH-GRO, TPH-DRO, and TPH-MRO) is 1,000 mg/kg.





SOIL BORING DELINEATION SUMMARY AND RESULTS

On October 19, 20, 26, and 27, 2017 and November 15-16, 2017, LTE conducted a subsurface soil investigation to laterally and vertically define soil impacts at the Site. LTE advanced 14 soil borings (BH01 through BH14) using a CME 55 truck-mounted hollow-stem auger drill rig in and around the suspected historical release location. Soil boring locations are depicted on Figure 2. Soil borings were logged by an LTE geologist and described using the Unified Soil Classification System to delineate hydrocarbon impacts in the subsurface. The intervals from immediately beneath the ground surface and then every five feet thereafter were screened for volatile organic compounds (VOCs) using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp per methods in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993. Soil samples collected from the section of core with the highest PID values and a soil sample from the bottom of each borehole were submitted for confirmation laboratory analysis. The soil samples were collected directly into pre-cleaned glass jars, labeled, and delivered at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Hall Environmental Analytical Laboratory Sciences (Hall) in Albuquerque, New Mexico, for analysis of BTEX using United States Environmental Protection Agency (USEPA) Method 8260/8021 and TPH-GRO, DRO, and MRO per USEPA Method 8015. Soil boring logs are included in Attachment 1.

Laboratory analytical results indicated that total BTEX and total TPH concentrations from soil samples BH01@3-5', BH02@13'-15', and BH05@10' exceeded the applicable remediation action levels for this Site. The total BTEX concentration exceedances ranged from 88.1 mg/kg in BH02@13-15' to 317.8 mg/kg in BH05@10'. The total TPH exceedances ranged from 1,348 mg/kg in BH02@13-15' to 10,300 mg/kg in BH01@3-5'. All remaining borehole soil samples submitted for laboratory analysis were in compliance with the applicable remediation action levels for benzene, total BTEX, and total TPH. The analytical results and field screening data are summarized in Table 1. The complete laboratory analytical reports are included as Attachment 2.

EXCAVATION ACTIVITIES AND CONFIRMATION SAMPLE RESULTS

NORTH EAST EXCAVTION

Following receipt of the soil boring laboratory analytical results, it was determined that excavation of the soil impacts within the former drip tank area would be the correct approach to remediation based on lithology, concentration, and extent of historical impacts to soil. Beginning in November 2017, Williams excavated at the identified subsurface impacts near boreholes BH01 and BH02 on the northeast side of the former drip tank area (Figure 2). On November 27, 2017, Williams personnel collected 5-point composite confirmation soil samples from the sidewalls and floor of the excavation under the observation of the NMOCD. A total of six sidewall and two floor confirmation soil samples were collected and submitted to Hall for analysis of BTEX and TPH following the same procedures previously described. Laboratory analytical results indicated all eight confirmation soil samples were in compliance with the applicable remediation action levels



for benzene, total BTEX, and total TPH. The excavation extent and soil sample locations are depicted on Figure 3.

SOUTH WEST EXCAVTION

The excavation crew then moved to the area surrounding borehole BH05 where soil impacts were previously identified, to begin a second excavation southwest of an existing pipeline. Between December 6 and December 27, 2017, there were five separate confirmation soil sampling events conducted in the presence of the NMOCD to determine if additional remediation was necessary. Upon receiving the laboratory analytical results from each confirmation sampling event, any excavation areas represented by a composite confirmation sample that exhibited benzene, total BTEX, or total TPH concentrations that exceeded the applicable remediation action levels were designated for further excavation. Following additional excavation, subsequent confirmation soil samples were collected under the supervision of the NMOCD. A total of ten sidewall samples and two floor samples were collected to confirm the excavated area was in compliance with the applicable remediation action levels for benzene, total BTEX, and total TPH. The excavation extent and soil sample locations are depicted on Figure 3.

In total, approximately 3,068 cubic yards of soil were excavated and transported for disposal. Two soil samples were collected from the overburden stockpile on site confirming that the soil was in compliance with remediation action levels to be used for backfill. Analytical results for soil samples are presented in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

Fourteen soil borings were advanced around the former drip tank location to define the lateral and vertical extent of impacts. Laboratory analytical results identified the areas where excavation would be necessary. Groundwater was not encountered in any borehole.

Excavation confirmation soil samples did not exhibit any BTEX or total TPH concentrations that exceeded NMOCD remediation action levels, and confirmed that Williams had successfully remediated the historical impacts to the soil. Williams requests that a No Further Action Status be granted by the NMOCD for closure of this Site.





LTE appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments, do not hesitate to contact me at (970) 385-1096 or via electronic mail at dburns@ltenv.com or aager@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Danny Burns

Project Geologist

Ashley A. Ager Ashley Ager, M.S., P.G. Senior Geologist, V.P.

Attachments:

Figure 1 – Site Location Map

Figure 2 – Site Borehole Location Map

Figure 3 – Excavation Soil Sample Location Map

Table 1 – Soil Analytical Results

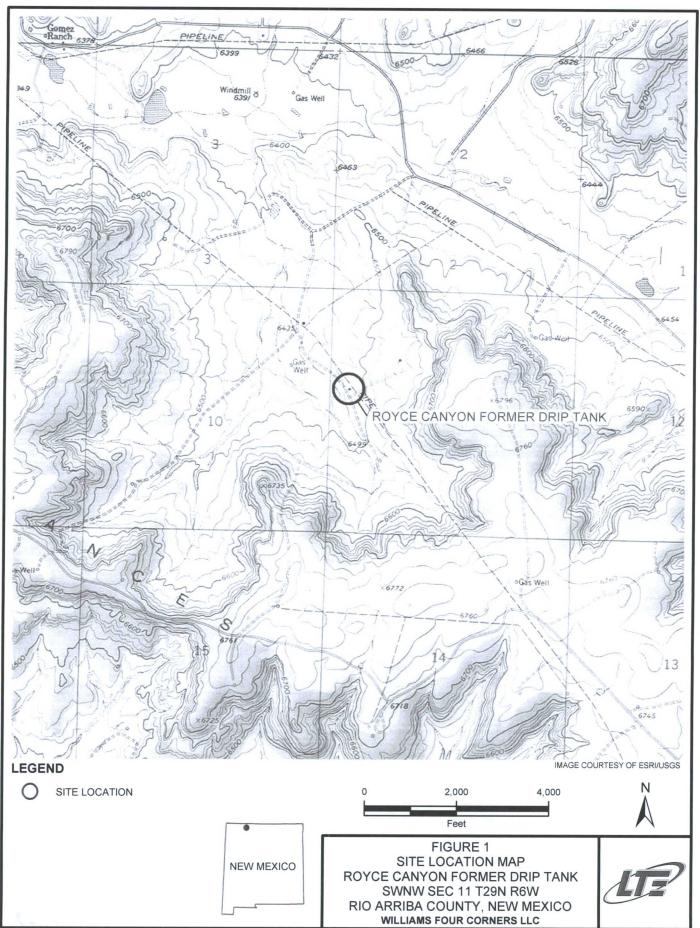
Attachment 1 – Soil Boring Logs

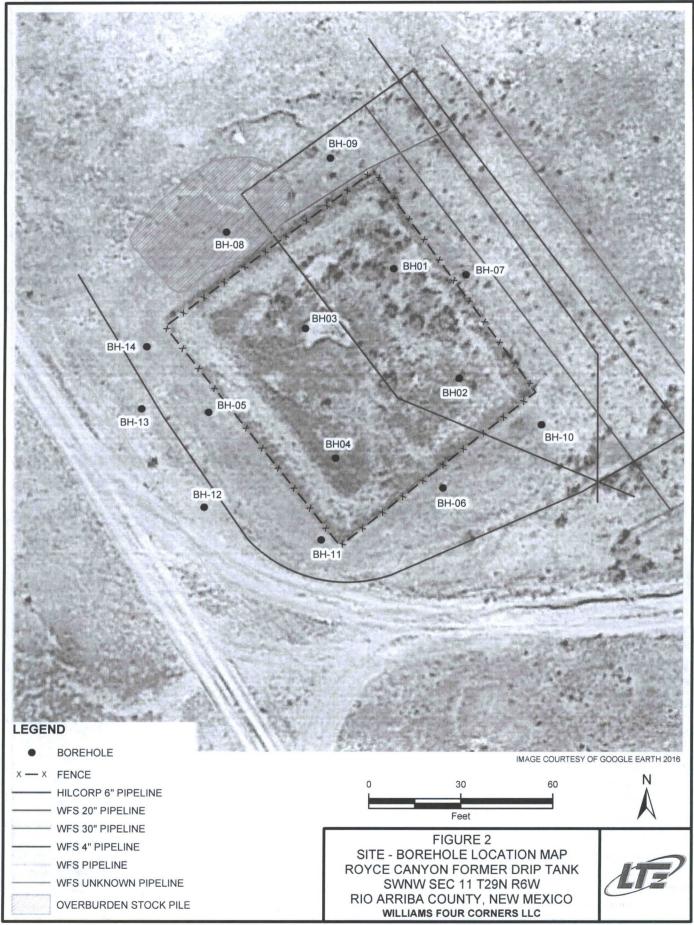
Attachment 2 – Laboratory Analytical Reports

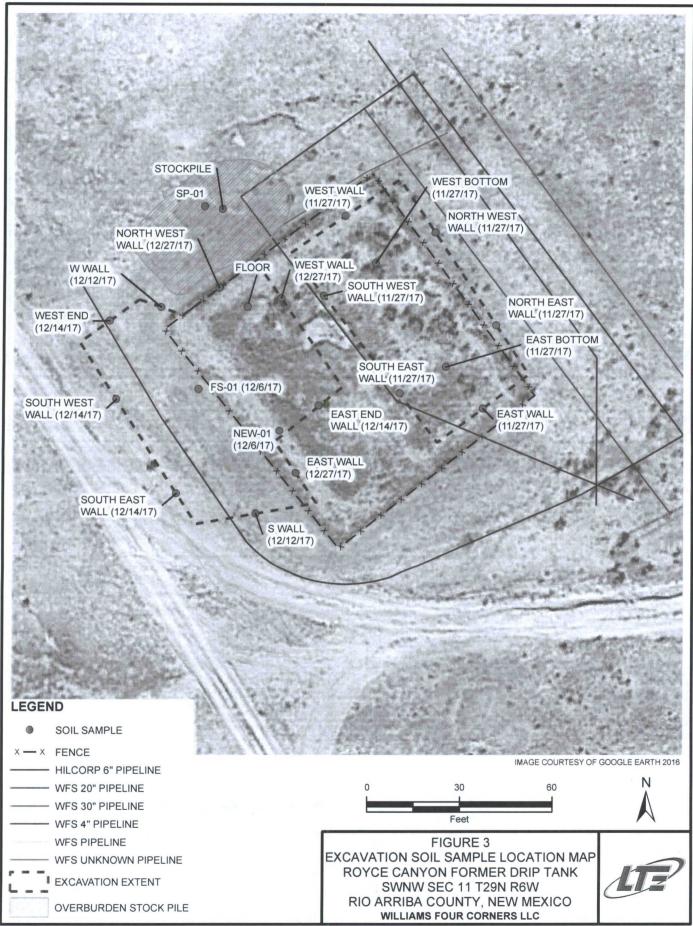


FIGURES









TABLES



TABLE 1 SOIL ANALYTICAL RESULTS

ROYCE CANYON FORMER DRIP TANK RIO ARRIBA COUNTY, NEW MEXICO WILLIAMS FOUR CORNERS LLC

Sample ID	Sample Date	Vapor (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
Borehole Samples		SERVICE SERVICE	NOTE OF THE				ALL THE PARTY OF T	NAME OF TAXABLE PARTY.	No. of Street, or other		
BH01 @ 3-5'	10/19/2017	1,183	5.0	60	14	220	299	5,600	2,400	2,300	10,300
BH01 @ 15-17'	10/19/2017	964	< 0.018	0.093	< 0.037	0.44	0.533	21	26	<48	47
BH01 @ 33-35'	10/19/2017	105	0.045	0.46	< 0.047	0.38	0.885	<4.7	<9.4	<47	<61.1
BH02 @ 13-15'	10/19/2017	827	< 0.12	25	5.1	58	88.1	1,100	180	68	1,348
BH02 @ 24-25'	10/19/2017	84	< 0.024	< 0.049	< 0.049	< 0.097	< 0.219	<4.9	<9.5	<47	<61.4
BH03 @ 0-5'	10/19/2017	1,685	0.40	8.1	1.3	17	26.80	440	290	<47	730
BH03 @ 33-35'	10/19/2017	361	< 0.024	0.069	< 0.048	< 0.097	0.069	<4.8	51	<50	51
BH04 @ 19-20'	10/19/2017	1,165	0.11	0.90	0.14	1.6	2.75	71	<9.3	<46	71
BH04 @ 34-35'	10/19/2017	764	0.22	1.8	0.18	2.7	4.9	54	39	<46	93
BH05 @ 10'	10/26/2017	1,194	3.8	110	14	190	317.8	6,000	570	290	6,860
BH05 @ 45'	10/26/2017	31	< 0.024	0.15	< 0.048	< 0.096	0.15	<4.8	<9.6	<48	<62.4
BH06 @ 35'	10/27/2017	1,902	0.083	0.63	< 0.047	0.98	1.693	10	37	<48	47
BH06 @ 50'	10/27/2017	488	< 0.025	0.17	< 0.049	0.15	0.32	<4.9	<9.3	<47	<61.2
BH07 @ 20'	10/27/2017	352	< 0.025	< 0.050	< 0.050	< 0.10	< 0.225	< 5.0	19	<50	19
BH07 @ 30'	10/27/2017	15	< 0.024	< 0.049	< 0.049	< 0.097	< 0.219	<4.9	<8.4	<42	<55.3
BH08 @ 15'	10/27/2017	701	< 0.024	< 0.047	< 0.047	< 0.095	< 0.213	<4.7	<10	<51	<65.7
BH08 @ 35'	10/27/2017	77	0.030	0.15	< 0.049	0.16	0.340	<4.9	<9.5	<47	<61.4
BH09 @ 20-22'	11/15/2017	309	< 0.024	< 0.048	< 0.048	< 0.096	< 0.216	<4.8	38	<48	38
BH09 @ 33-35'	11/15/2017	29	0.084	0.45	< 0.046	0.21	0.74	<4.6	<9.2	<46	<59.8
BH10 @ 23-25'	11/15/2017	114	0.048	0.30	< 0.049	0.22	0.57	<4.9	31	<47	31
BH10 @ 28-30'	11/15/2017	78	< 0.024	< 0.048	< 0.048	< 0.095	< 0.215	<4.8	26	<47	26
BH11 @ 38-40'	11/16/2017	1,994	< 0.025	0.057	< 0.050	0.20	0.257	6.7	<9.7	<49	6.7
BH11 @ 48-50'	11/16/2017	65	< 0.023	< 0.047	< 0.047	< 0.093	< 0.210	<4.7	<9.3	<46	<60
BH12 @ 23-25'	11/16/2017	169	< 0.024	< 0.048	< 0.048	< 0.095	< 0.215	<4.8	15	<46	15
BH12 @ 28-30'	11/16/2017	72	< 0.024	< 0.048	< 0.048	< 0.096	< 0.216	<4.8	<9.7	<48	<62.5
BH13 @ 23-25'	11/16/2017	308	< 0.025	< 0.049	< 0.049	< 0.099	< 0.222	<4.9	21	<46	21
BH13 @ 33-35'	11/16/2017	121	0.031	0.24	< 0.048	0.470	0.741	<4.8	<9.8	<49	<63.6
BH14 @ 8-10'	11/16/2017	2,166	< 0.25	2.3	< 0.49	28	30.3	810	120	<48	930
BH14 @ 28-30'	11/16/2017	253	0.93	6.0	0.23	6.3	13.46	46	<10	<50	46
North East Excava	ation Confirmati	ion Samples									
North East Wall	11/27/2017	NM	< 0.024	< 0.048	< 0.048	< 0.096	< 0.216	<4.8	<9.6	<48	<62.4
North West Wall	11/27/2017	NM	< 0.023	< 0.046	< 0.046	< 0.093	<0.208	<4.6	<9.3	<46	<59.9
South East Wall	11/27/2017	NM	< 0.024	< 0.047	0.056	0.37	0.426	25	16	<47	41
South West Wall	11/27/2017	NM	< 0.046	< 0.092	0.22	1.5	1.72	68	110	<46	178
East Wall	11/27/2017	NM	< 0.024	< 0.048	< 0.048	< 0.096	< 0.216	<4.8	<10	<50	<64.8
West Wall	11/27/2017	NM	< 0.12	1.5	0.47	6.7	8.67	160	38	<46	198
East Bottom	11/27/2017	NM	0.14	3.4	1.3	16	20.8	360	100	<48	460
West Bottom	11/27/2017	NM	< 0.050	0.91	0.19	2.6	3.70	52	21	<52	73
South West Excav	ation Confirmat	ion Samples	THE RESERVE	-		A PROVINCE	THE REAL PROPERTY.			Carlo Carlo Carlo	
NEW-01	12/6/2017	556	< 0.10	< 0.21	< 0.21	< 0.41	<0.93	44	28	<46	72
FS-01	12/6/2017	1,740	0.25	4.0	0.67	9.5	14.42	300	75	<49	375
W Wall	12/12/2017	NM	<0.19	<0.38	<0.38	2.8	2.8	120	48	<47	168
S Wall	12/12/2017	NM	< 0.020	< 0.040	< 0.040	< 0.081	<0.181	9.4	30	<48	39.4
West End	12/14/2017	NM	< 0.12	< 0.24	< 0.24	< 0.48	<1.08	<24	<9.7	<48	<81.7
South East Wall	12/14/2017	NM	< 0.097	< 0.19	< 0.19	0.66	0.66	49	25	<48	74
South West Wall	12/14/2017	NM	< 0.10	< 0.20	< 0.20	< 0.40	< 0.90	<20	<9.7	<48	<77.7
East End Wall	12/19/2017	NM	< 0.12	1.4	0.34	5.7	7.44	110	28	<48	138
North West Wall	12/27/2017	NM	0.76	13	1.6	20	35.36	730	47	<51	777
West Wall	12/27/2017	NM	< 0.44	3.3	0.99	19	23.29	640	110	<49	750
East Wall	12/27/2017	NM	< 0.094	< 0.19	< 0.19	0.76	0.76	35	14	<51	49
Floor	12/27/2017	NM	< 0.11	0.34	< 0.21	1.2	1.54	45	41	<48	86
Overburden Stock	pile Confirmatio	on Samples	Part Transport	THE RESERVE						22.00	
Stockpile	11/27/2017	NM	< 0.024	< 0.048	< 0.048	< 0.095	< 0.215	<4.8	<9.6	<48	<62.4
SP-01	12/6/2017	86.5	< 0.10	< 0.21	< 0.21	< 0.41	< 0.93	<21	19	49	68
NMOCD Closure	Caltanata	ALCOHOLD AND ADDRESS OF THE PARTY OF THE PAR	10	NE	NE	NE	50	NE	NE	NE	1,000

BTEX - benzene, toluene, ethylbenzene, total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NE - not established

NM - not measured

ppm - parts per million

TPH- total petroleum hydrocarbons

< - indicates result is less than the stated laboratory reporting limit

BOLD indicates result exceeds applicable standard

ATTACHMENT 1
SOIL BORING LOGS



Compliance . Engineering . Remediation LT Environmental, Inc. 848 E. 2nd Ave Durango, Colorado 81301 BORING LOG/MONITORING WELL COMPLETION DIAGRAM Bosing/Well Number: Royce Canyon Former Drip Tank Project Number: 10-19-17 034017013 Geomat Engineering Daniel Burns PID Hollow Stem Auger Continuous Gravel Pack: Grout: 10-20 Silica Sand Bentonite Chips Bentonite Slurry Casing Type: Depth to Liquid: Length: Schedule 40 PVC Total Depth: 35 Screen Type: Length: Depti to Water. Schedule 40 PVC 0.010" Penetration Resistance Vapor (ppm) Staining Sample # Depth Sample Well Lithology/Remarks (ft. bgs.) Run Completion Lt grayish brown topsoil/ SIT. previously disturbed. Loom 10/10 moist dark gray to black for soundy silt w/ organics, swampy to the storm of place of the storm of place of the storm of the sto 3 strong TOW 984 Movst 1183 5 4.05 MURST 6 gray med sand w/ some silt. 5-8' strong ador /sturn Dryyes 1170 st. wist Reddish brown. for sandy silt, slightly are consolidated. No starm, moderate stight 9 Med 8-10 625 No DIT en sundy 10 commented purple silt str. Hard. 192 11-0) Pland Dry 11 Il refusal w/ continuous sampler 12 Split spoon, auger down to 15', hard @ approx.
[4'-15'. 13 14 15

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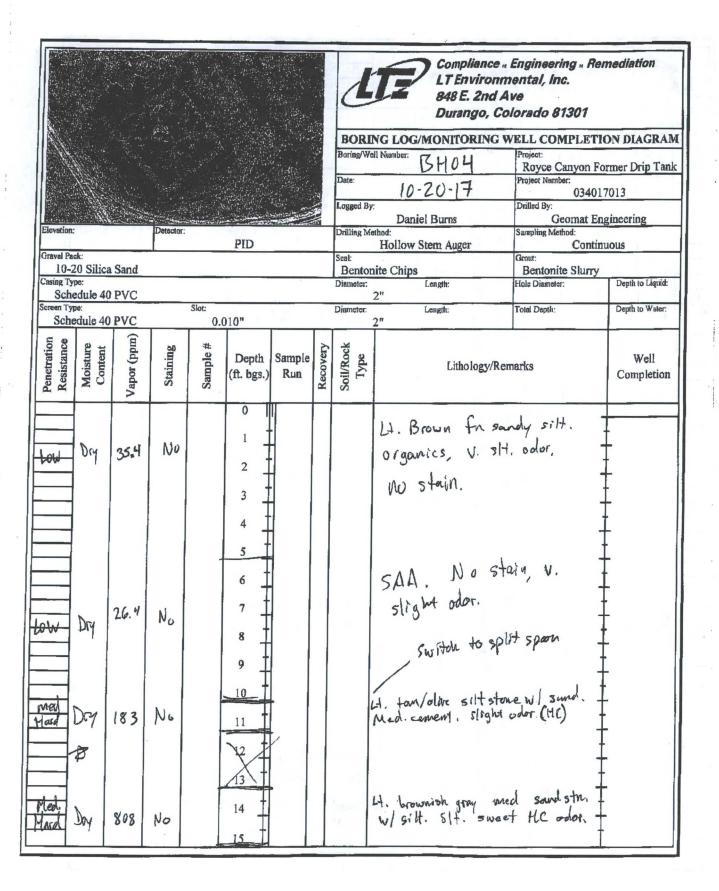
	7 -							Boring/Well#	BHOI	m-1
TE				ering " I	Remedi	atio	7	Project:	Royce Canyon Former Dri	D Tank
	LTEn	vironi	mental,	inc.		1		Project #		
g o		T	7			1 1		Date	10- 1A.17	
Penetration Resistance Moisture	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		ology/Remarks	Well Completion
Hard Dry	964	No		15 16 17		.Go split split		L+ gray, framosty consolid degreeded file	med soul w/silt eted/ceneral. Musty. /produced water odor	
V. Dry	54.7	No	7	18 19 20		3"		V. It. gray mee well comented. Not enough	d. encl. stn. sit. odor. Cor 402 jour	
V. Dry	235	N-		22 23		6"	į.		soud stn. odor. no stain	
retuit Dry	184	No		24 25 26		6"		SAA/		'
Dry	317,	No		27 28 29 30	4	Į a į	٠	5A.A.		
arth Deg	105	No	BHO! 33.35 10-20-17 09:40	32 33 34 35 36		24		Gray for sand s odor, but . Refusal	it. No stain, v. st.	

							77 ag 7 a	1	LT Environm 848 E. 2nd A		mediation
14			AN IN	1. 18					NG LOG/MONITORING W	ELL COMPLETI	ON DIAGRAM
1								Boring/Wei	Number: BH02	Project: Royce Canyon Fo	ormer Drip Tank
						100		Date:	10-20-17	Project Number: 03401	7013
(f)								Logged By	Daniel Burns	Drilled By: Geomat En	gineering
Elevation:		Section thereto	Detector:	A Common Marine	PID	the strained A	CAL	Drilling Me		Sampling Method: Contin	
Ciravel Pac 10-2	k: O Silica	Sand						Seal: Benton	ite Chips	Grout: Bentonite Slurry	
Casing Typ			-					Diameter:	Length:	Hole Diameter:	Depth to Liquid:
Screen Typ				Stot:	10"			Diameter:	Length:	Total Depth: 25	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
					0				LA Remove touscoul	laam	
	Dry				1 -	-			Lt Brown topsoil/ w/organics. No Fn. silty sand.	stain loder	+ 1
Jow					2				wy vigania,		+ 1
			No		3]	41		Fn. silty sand.		‡
	Dry	0.0	1		4	1			No stem lodos	-	‡
	- 1				5	1			Lt. Brown selfy me.		‡ [
					6	1			Lt. Brown silty me	a. source,	<u> </u>
					7				No stanloder	S-1	į l
140	Day	0.0	No		8						-
					9 7		2'		Litely approaching siltstone recovery, switching	e and limited	Ŧĺ
	í				10	1	-	i	recovery, switching	to split-spoon -	Ŧ
						1 1	-	ĺ	campling. Auger	70 13, -	‡
					11				split spoon 1977	•	‡
					12				() 13	-	† 1
				-	13				Lt. Brownsh gray Vi	fn. silty -	
terd	Dry	827	No		15	. [8"		saulstone with son siltstone. Moderate	ne sprudy -	

	-							Boring/Well #	BHOZ	
	Com	nlianco	Engine	ering " l	Pom odi	odio.	_	Project:	Royce Canyon Former D	Orio Tank
12		nvironn			reilled!!	uoi	1	Project #	034017013	
-	- 1 E	i vii QIII	rerital,	1116.				Date	10-20-17	
ince ince		ng gu	# 0	Donal	Sample	ery	ck Ck			Well
Resistance Moisture	Vapor	Staining	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Litho	logy/Remarks	Completion
				15						
\exists				16						‡
				17				74		‡
				18				14		‡
				19						İ
Day	1,512	No		20		4"	V	cemented. Mud	s stn., Hard well - the away odds. aderial for you sample in	+
7				21				* No.1 enough m	exterial tor 102. samples	7
				22						+
				Ī					-	‡
				23						<u>†</u>
DIA	84.1	No	-	24		4"		V. Lt. gray, med	. s. atn. General No stain,	\pm
	0.51	,,,,	+	25 I		١.		V. 14. MC odor. Befusale connet go e	No stain,	-
1				26				beinger contact do	ocaja o ,	‡
1.			ĺ	27					-	‡
				28				*	_	‡
_				29						<u> </u>
_				30						
				31						
				32						
				I						†
1				33					-	-
_				34				<i>t</i> .		_
-				35		1	. +	ر.		-
]	7.			36					Ĭ	-
1				37					1	-

			4	LT Environm 848 E. 2nd A		nediation
P. Leaver L			7	NG LOG/MONITORING W	ELL COMPLETIO	N DIAGRAM
				Number: BH03	Royce Canyon For	mer Drip Tank
			Date:	10-20-17	Project Number: 034017	013
		100	Logged By	Daniel Burns	Drilled By: Geomat Eng	ineering
Elevation:	Detector:	ID	Drilling Me	ethod: Hollow Stem Auger	Sampling Method: Continu	ous
Gravel Pack: 10-20 Silica Sand			Seal: Bentor	nite Chips	Grout: Bentonite Slurry	
Casing Type: Schedule 40 PVC		у.	Diameter:	Length:	Hole Diameter:	Depth to Liquid:
Screen Type: Schedule 40 PVC	Slot: 0.010'	1	Diameter:	Length:	Total Depth: 35	Depth to Water:
					J - J-	
Penetration Resistance Moisture Content Vapor (ppm)		Depth Sample Run	Recovery Soil/Rock Type	Lithology/Ren	narks	Well Completion
1484 1484 1484 1941 Med Dry 961	slight yes	3 4 5 6 7 8 9 0 1 2 3 4		Brown, chanse, low plasticistit. Sour, diesely odor, MC. Sitghty grayish brown silt. Organic/manure diesel odor. SAA, gayish brown filt. coorsening down Dieselish odor. Lt. yellowish/gray ten sand. And spirit storing of sit. storing gas/conden. ador. Lt. grayish ton, siltstormoderate coment. Mod. Switch to split sp. Gray med. sond stone, med. cernent. Mod.	In soundy like and In soundly morard. silty med for in, med. sweet me w/ sound stain/coder.	

_	-							Boring/Well#	BH03	1820
11	Com	pliance	Engin	eering " l	Remedia	atio	n	Project:	Royce Canyon Former	Drip Tank
LIZ	LTE	nviror	nmental	. Inc.				Project #	034017013	The second leaves and the second
								Date	10-20-17	WE THE TOTAL
Resistance Moisture	Content	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithol	ogy/Remarks	Well Completio
V.	708	No.		15 16 17 18 19 20 21		811		the V. It gay mee cemented. Mod	l, sand stn. Hurd, l, sweet gassy t/C udor.	
Josep Dist	783	No		22 23 24 25 26 27	6			Lt. gray med. so 514-mod. sweet	nd stn. HC ochr.	+ + + + + + + + + + + + + + + + + + + +
d Dry	538	No	-	28 29 30 31	6			5AQ Med. s. slt. tic odor	r+n.	
Dry	361	Nø	BH 03 @ 53-35 10-20-17 14:00	32 33 34 35 36	12'			-t. gray imed. 5. SIt. HC odbr., Spefusel @ 35', com further.	damp odor .	



								D	OHAU	
	7							Boring/Well #	B HO 4 Royce Canyon Former Dr	rio Tank
I LIZ	Comp	oliance	" Engine	ering " F	1emedia	atio	n	Project #	034017013	th I dux
	LIE	nviron	mental,	inc.				Date	10-20-17	
9 9 7							14		10-60 17	
Penetration Resistance Moisture	Vapor	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	ology/Remarks	Well Completion
Hard Dry Hard Dry	, 919	No	Samp	(ft. bgs.) 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	Run	Reco		V. It. gray med well compreded. It a gray med s. Mod. sweet the gassy odo	In sound stone. Hours! No stam most sweet onesty oder radadmusty degradad - it. S. St. Convented. sty obegraded gas odor.	
V Dry	764	No	BH 04 934 -35	32 33 34 35 36 37				Gray med. st mod-strong mu	n. v. hard, cenented, sty degraded gas octor,	

				_					BH04		
								Boring/Well #	Royce Canyon Former Dr	in Tank	
LIZ					Remedia	tio	7	Project:	034017013		
	LT En	vironn	rental,	Inc.				Project #	10.20-17		
								Date	10.00-1-1		
Penetration Resistance Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Lith	ology/Remarks	Well Completion	
1-				37							
V.V. Marid Dry	74.1	No		37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58		2"		-17. blursh grat comented to refusal, count feedings due to debris of same blue No record	y, v. dense, consolidated. It store. advance further, OVM. o slough/cutting olstone above re sittstone. ery for 402 jov.		
				_	П					1	

	16.	Compliance E LT Environme 848 E. 2nd Av Durango, Colo	e .
Congression to		BORING LOG/MONITORING	WELL COMPLETION DIAGRAM
		Boring/Well Number: BH-05 Date:	Project: Royce Canyon Former Drip Tank Project Number:
		10/26/2017 Logged By:	034017013 Drilled By:
M. Carlotte		Daniel Burns	Geomat Engineering
Elevation: Detector:	PID	Drilling Method: Hollow Stem Auger	Sampling Method: Continuous
Gravel Pack: -10-20 Silica-Sand	1.20	Seal:	Grout:
Casing Type:		Bentonite Chips Diameter: Length:	Hole Diameter: Depth to Liquid:
Schedule 40 PVC Screen Type: Slot:		Diameter: Length:	Total Depth: Depth to Water:
Schedule 40 PVC	0.010"	2" NA	Total Depth: 45 Depth to Water:
Resistance Moisture Content Vapor (ppm) Staining	Depth Sample (ft. bgs.) Run	Soil/Rock Type Type Type	emarks Well Completion
mais 1194 No	0	Brown for Sand Strong odor, No	, trace Silb

		•					The V		Boring/Well #	BHOS	July Gogli M
1	TE				ng " Rem	ediation			Project:	Royce Canyon Former Di	rip Tank
	Z	LT Env	ironme	ntal, Inc	C.				Project #	034017013	
_	_	_			80 B. C.		1	4 0	Date	10/26/17	Y To Are
Resistance	Moisture	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithol	ogy/Remarks	Well Completion
			NP		15				It brown w/wh	itelorey mottles	
	DRY	87.6	Young		16	2				silt Strong afor	
	1			Jan 1	17	-	-			-	+
				2 10	18						-
					19				4 1	-	‡
					20	-	4				-
	DRY	589.0	Wo		21	3			SAA	-	-
					22		_				-
				-	23					- 1	-
\exists					24						-
					25	-	+			1	-
	DRY	603.8	NO	}	26	4			SAA	+	-
7	- 1	J. J. V			27		+		~	#	-
					28					‡	-
=					29					‡	-
					30	-	+		16 brown, vry	fine sand	-
	ORY	106.1	NO		31	5				g Slight oder	
					32		+	-		‡	
\exists					33					‡	
	1	7			34					‡	
					35		+	-		‡	
Ho	ny	46,3/	vo		36	6			SAA	‡	
\neg	'		1		37	-				†	

						Boring/Weil #	BH05	
	Compliance E	ngineering " Rem	adieti			Project:	Royce Canyon Former	Drip Taak
	T Condender	rymeering » ReMi	euiution			Project #	034017013	7 7
L	T Environmen	ntal, mc.				Date Date	0/26/17	100
p T	1					Date	WINGIT	T
Moisture Content	Vapor (ppm) Staining	# Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litholo	ogy/Remarks	Well Completio
+		37			-		75	
DRY !	30-C NO	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	7			How whitely re No Stain lock SAA	y fn Sand	

								4	ĪZ	LT Ent 848 E. Duran	ironmen 2nd Ave go, Color	rado 81301	
						1. 14		The second second	ell Mumber			ELL COMPLET	ION DIAGRAM
	, e ₁							Date:	В	H - 00			Former Drip Tank
95							14	Logged B		7/17			17013
Elevation:	1997		Defector		1	20	100		Đạn	ol Burns			ingineering
Gravel Paci	1		Delector	•	PID			Drilling M		Stem Auge	er	Conti	nuous
10-2	0 Silica	Sand							nite Chips			Grout: Bentonite Slurry	
	dule 40	PVC						Diameter:	2"	Length:	A	Hole Diameter:	Depth to Liquid:
Screen Type Sche	e: d ule 40	PVC	No. 10.00	Slot: 0.0	010"			Diameter:	2"	Length:	4	Total Depth: 50'	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		Lith	ology/Rem	narks	Well Completion
	DRy (g. d	1/0	•	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1		SM- sw	the brook		l-fh Sa	ole to 8'	

		-140							a.u.d	
-		_		_				Boring/Well #	BHOG Royce Canyon Former Dri	in Tank
LTZ				ng "Rem	ediation			Project #	034017013	P Terry
	LI Envi	ironmei	ntal, ind					Date Date	10/27/17	
E 8 9 4			*			>		Date	Wight	
Penetration Resistance Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	logy/Remarks	Weil Completion
DR1	1, 8	NO		15 16 17	2		GM- siv	SAA NO Stain	ing/oder	
D:/y	7.7	NO		18 19 20 21 22 23 23	3		SM- SW	Vary it brown g trace silt No Stain		
Dry	1210	NO yes		24 25 26 27 28	4		SM-	white/gre the brown w/ fin sand Stra	cy white/grey staining phis color	
DRY	M52	NO Yes		29 30 31 32 33	5	- 1	5;M-	SAA White spaining	Strong odor	
DRy /	902	Aro Yes		34 35 36 37	6	45	m	SAA White Sta	rining, Signs ofor-	

							A STATE OF THE PARTY OF THE PAR	Boring/Well #	BH06	
		-						Project:	Royce Canyon Former	Drip Tank
				ng "Reme	ediation			Project #	034017013	THE SALE TO
	LT Envi	ronmer	ital, inc	•				Date	10/27/17	200
						_		Date	lot 1711.	
Resistance Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lith	ology/Remarks	Well Completion
				37		-				
				38				white gre	/ <u>Green</u>)	
DRY	1393	No		40 _ 41 _ 42 _ 43	7		SM	fn Sand C NO Stain	Laire staining 1 ight Oder	+ + + + + + + + + + + + + + + + + + + +
Dry	3 62.3	No		44 45 46 47	8		SM	white/gre	y fr sand	+ + + + + + + + + + + + + + + + + + + +
				48 49 50 51				ligns they		+
Dily	468, 7	NO		52535455	9		SM		ninglodor com of hole Vill Stem	+
				56 _ 57 _ 58 _ 59						

			<u>I</u>	LT Environment 848 E. 2nd Ave Durango, Colore	ado 81301	
A Physican of the			BORING	LOG/MONITORING W	ELL COMPLETIO	N DIAGRAM
			Boring/Well Nun	BH-07	Project: Royce Canyon For	mer Drip Tank
		3)	Date: 10		Project Number: 034017	013
	100 mg		Logged By:	Erit Carrell	Drilled By: Geomat Eng	ineering
Elevation: Dete	eofor:		Drilling Method:		Sampling Method: Continu	ous
Gravel Pack:	PID		Seal:		Grout: Bentonite Slurry	
10-20 Silica Sand Casing Type:			Diameter:	Length: A	Hole Diameter:	Depth to Liquid:
Schedule 40 PVC Screen Type:	Slot:		Diameter:	Length: W	Total Depth: 2/	Depth to Water:
Schedule 40 PVC	0.010"		2"	74	J.	747
Resistance Moisture Content Vapor (ppm)		Run Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	0 III	7	5M-	Hydrovac poem trace sile - No Stainf	n sand	

			-	200	· * **			Boring/Well #	BH07	
IT=				ng " Reme	ediation			Project:	Royce Canyon Fonner Dr	ip Tank
	LT Env	ironmei	ntai, Ind	c.				Project #	034017013	
C 4)					A SAS		Maria.	Date	10/27/17	
Resistance Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litholo	ogy/Remarks	Well Completio
				15				It brown timber	- Some Staining -	
DRY	133.8	yes	7.	16 17	2		5M-	meditn Saud, tra	ce silt, Slight odol	
				18			y 44			
				19						_
				20		_			.,.	-
DRY	352.3	NO		21	3		SM-		and, tracesile	
		700		22	-	+		No stain/ so	ior	-
				23					. 1	_
				24						_
				25	-	+	-	White It grey	fn Sand w gravel	-
DRY	6.3	NO		26	4	-	SM	No stain/Od	4	-
7				28		_			+	
			1	29					1	
				30		1		child the non-		
				31	r		3M	No Stainled	Y for Sand Warand	
DRY	14.8	NO		32	5	1		100000000	1	
				33				30' total o	1eptn ‡	
				34					‡	
				35					<u>†</u>	
				36					1	
				37						

				rv.		÷ (1)		1	Íz	LT 848	Environments E. 2nd Ave		liation
55			1223					BORI	NG LO	G/MON	ITORING V	WELL COMPLET	ION DIAGRAM
4.6	an had						3		ell Number:			Project:	1-1-2-11
	34g 17					573		Date:		BH-09	8	Royce Canyon F	ormer Drip Tank
	15					101	-	Date.	10/3	7/2	0/7	0340	17013
	14.0		-			A STATE OF THE PARTY OF THE PAR	N. C.	Logged B	y: 5	ric Car	voli	Drilled By:	ngineering
Elevation		1 0	Detector	C. C	TATE OF THE PARTY		£18	Drilling M	ethod:	1		Sampling Method:	
Gravel Page	ck:			# At 5.	PID		_	Seal:	Hollov	v Stem A	uger	Grout: Conti	nuous
10-2	9 Silic	a Sand	-					Bento	nite Chip	s		Bentonite Slurry	I Part II II
Casing Ty	pe: odule 4	0 PVC						Diameter:	2"	Length:	ARA	Hole Diameter:	Depth to Liquid:
Screen Tyr	pe:	DVC		Slot:	010"			Diameter:		Length:		Total Depth:	Depth to Water:
	dulc 4		T	0.	010"				2"		10 11	22	MA
Penetration Resistance	an and	Vapor (ppm)	50	#	Depth	Sample	ery	ock				•	Well
sista	Moisture	or (Staining	Sample #	(ft. bgs.)	_	Recovery	Soil/Rock Type		I	ithology/Re	marks	Completion
Per Re	N S	Vap	NO.	SS			8	S					
					0 1			-			2 44		
					1 .	-			Hyd	rovac	pothol	to 8'	+ 1
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			1		3	-							+ 1
													İ 1
					4	-							+ 1
9.1					5	·							† 1
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					6	- 1							+ 1
- 11					7								† l
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					8 +		_						† 1
					9 🖠								1
711					10	1							+ 1
					10 +		+		- A- B	reddisi	h brown	fn Sand wl	† 1
				ĺ	11	7		SW		Silb,	cohesiv	12	Į l
Y	Mai St	28.6	WO		12	1		JW	4.0		ning/o		+
111					Ŧ		+	_	///) Stal	ning/ 80		†
1					13							/	Į
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1			_		15					400			

	7		F- 1		-		-		Boring/Well #	BHOR	
AT.					ng " Remo	ediation			Project:	Royce Canyon Former D	rip Tank
	LT	Env	ironmer	ntal, inc	C.				Project #	034017013	
E 0]									Date	10127/17	
Penetration Resistance Moisture	Content	(bpm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litholo	gy/Remarks	Well Completio
DR	Y	20.5	NO		15 16 17 17 17 17 17 17 17 17 17 17 17 17 17	2		Spa- sw	light brown, 9 med/fn Sond, NO Staining S	trace Silt	
					18 19 20					Pro Co Od	
DRy	35	1.6	NO		21 22	3		SM	White It grey No Staining	slight oder	
					23						
DRY	30	3.8	NO		26 27 28	4		SM	White fine so No Staining Staining	and 10°	
					29						
DR	292	1.6	NO		31 32	5		SM	SAA Na Staining Slight odor		
					33 34 35				C A A		-
ORY	77.	4	vo		36 37	6			SAA No Storining Slight odo	-	_

									Boring/Well #	BH08	
T		Complin	ince En	naineerii	ng " Rem	ediation			Project:	Royce Canyon Form	ner Drip Tank
		IT Fnui	ronmar	ital, inc					Project #	0340170	
			Jan 161	· wij IIIC	**			I	Date	10/27/	
o l	•			-41				14	Date	101011	. 1
anc	Moisture	5 E	Staining	Sample #	Depth	Sample	er,	e oct			Well
sist	ont	Vapor (ppm)	ain	du	(ft. bgs.)		5	rype Type	Litholo	gy/Remarks	Completi
Resistance	ΣÕ	7 9	St	Sa	(II. Uga.)	ican	Recovery	Soil/Rock Type			Compien
					37	1					
							\neg		2 10		
	- 1				38			-	Stopped @	35'	T
		-	.		1				201100	· Man	T
	- 1		ļ		39]				due to	65,000 NEC	I
]	.			Stopped @ due to 10 Total dept		1
_			1		40	1 1			Total depa	4 351	+
_						.					1
_					41	1 1		- 1			+
-			}			1		- 1			+
-	1				42	- 1		Į			+
\dashv					43						+
-		- 1		1	43	1 1		}			+
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								1	Compliance - Eng LT Environment 848 E. 2nd Ave Durango, Color		ntion
								BORE	NG LOG/MONITORING W	ELL COMPLETION	ON DIAGRAM
								Boring/We	BH - 09	Project: Royce Canyon Fo	rmer Drip Tank
								Date:	11-15-17	Project Number: 03401	, , , , , , , , , , , , , , , , , , ,
	100					ر من من المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة المنظمة		Logged By	:	Drilled By:	
Elevation:			Detector		- Lilera	THE PARTY OF THE P	新	Drilling Mo	Eric Carroll	Geomat En Sampling Method: 5011 Contin	b spann
Gravel Pag	ůk:				PID			Seal:		Grout:	HOUS
Casing Ty	O Silic	arsand						Bento:	Length:	Bentonite Slurry Hole Diameter:	Depth to Liquid:
	dule-4	PVC	<u> </u>	Slot:			·	Diameter:	Z ⁿ VA	7,5"	Depth to Water:
		PVC			010"		_	Diameter.	2º NA	Total Depth: 35'	MA
Penetration Resistance	Moisture	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
					0				Hydrovac Pothole	to 5"	
					1 -				, yourte		<u> </u>
	,				2				. 4		‡
					3 -	-					t II
					4	7					
					'	1					
			,		5	-	-		It there orangish homes	Count on the	- 1
	אל ופריין	_	No		6				No spain/odgr	- 116 SAME 31/2	_
					7				, , ,		<u> </u>
		İ			8						- 1
		1			9 7						- 1
					1	f l					
5					10	-	-	SW-SM	It orangica i	in	-
	DRY	1.4	No		11 . 🗍	1	100%		It orangish brown sand	brace silb :	
	,	,,			12		Ø	GUL.	No Stain/oder	1	· .
					13		T				
			Ž.		I	1			*		.
			i		14 <u>I</u>					-	- "
					15]	

	-							Boring/Well #	BH-9	The state of the s
	Comp	liance	Engineer	ing " Remo	ediation			Project:	Royce Canyon Form	
Z			ental, in					Project #	03401701	3
				T		_		Date	11/15/17	12.73.17.6
Moisture	Vapor	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	logy/Remarks	Well Completion
DRy	2,4	N		15	2	30%	SWY-	He brown med su No Stainlo	sand, trausils der	
				17						‡
		76		18						+
				20				SAA		1
Ry	309	No	ובנ-ופנ	21	3	10/10	5M	It grey in sur Slight odor	nd, No stain	+
				22				yer goog		+
				23						+
				25						†
Ry	56.4	No		26	4	90	SM	SAA		‡
•				27	-	50		NO Stainlo	dor	‡
				28						Ī
				29 30						†
Ry	Mino:			31	5	15%	SM	SAA	,	Ī
7	112	No		32	_	1/3		No Stain/oc	or	+ 1
				33		1				+
				34						+
Ry	29.1	No	روسفيين	~ I	6	6707	SM	Dark grey/bi	own Very sn sand	<u> </u>
		1	331-38	37	6	3		No Stain/odor		T

								1	ſz	LT Environ 848 E. 2nd Durango,	Colorado 81301	
Elevation		e Can o	Detector	and the second			新·	Boring/We	ell Number:	BH-10	Project Number: 0340 Drilled By:	Former Drip Tank 017013 Engineering
Gravel Pa			Dutcolox		PID			Seal:		V Stem Auger		tinuous
10-2	20 Silica	Sand						Bente	nite Chi		Bentonite Slurr	
	edurle-40	PVC						Diameter:	2"	Length:	Hole Diameter: 7.5 "	Depth to Liquid:
Screen Ty	pe: edule 40	PVC		Slot: 0.0	10"			Diameter:	2"	Length:	Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		Litholog	y/Remarks	Well Completion
	Moise Moise	1.9	No		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		100%	5w- 5m	15 0: Smail	reddish hrow	one Silt, bul organic on Sand, trace Sile ~ . 5 - 2.0m.	+

								Boring/Well#	BH-10	1 1 1
11=	Compl	iance " i	Engineeri	ng " Rem	ediation			Project:	Royce Canyon Forme	THE RESERVE TO SHARP THE PARTY OF THE PARTY
LIZ			ental, Inc					Project #	03401701	3
					1		-	Date	11/15/17	
Penetration Resistance Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		logy/Remarks	Well Completion
DRY	5.2	NO		16	3		5W-	it brown in S No Stain/o	and, trace silb;	+
				18 _						†
DRy	45,2	No		20	4		5M	It grey vry fn. No stain Si	sond . ight odor	
				23 24 25						‡ ‡
DRY	114	No	73'-25	26	5		SM	SAA No stain look	700	Ī -
				28 29 30				- 54A		†
DRY	77.9	NO	28'-30	32	6	-	5M	No Stainlook	00	‡
				33 34 35				Stopped @ 3	o' due to	† †
				36						Ŧ

_ 1	*		reconst				A LOS CONTRACTOR OF THE PARTY O	L	LT Environm 848 E. 2nd A Durango, Co	lve plorado 81301	
									G LOG/MONITORING	Project:	N DIAGRAM
								Boring/Well	BH-11	Royce Canyon For	mer Drip Tank
							146.5	Date: 1/	-16-17	034017	013
	100	200	de S				NAME OF THE OWNER, OWNER, OWNE	Logged By:	Eric Carroll	Drilled By: Geomat Eng	
Elevation:		Control of the Control of	Detector:		PID			Drilling Met		Sampling Method: Spile Continu	Spenn IOUS
Gravel Paci		Con d					_	Seal:	ite Chips	Grout: Bentonite Slurry	
Casing Typ	0-Silica							Diameter:	Length:	Hole Diameter:	Depth to Liquid:
Screen Typ	dulo 40.			Stot:	107			Diameter:	Length:	Total Depth:	Depth to Water:
	dule 40				10"		_		2 701		
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/	/Remarks	Well Completion
4		> _			0	11			Topsoil Weganics	donk bear redlinous.	
					1 .					,	Ł I
										,	Ţ
					2 -	$H \mid I$				-	‡
					3 _	H			*	-	
					4 _					-	Į
					5 -	-					‡
	mad.	0 5	Ne		6	- ,	100%	SW-	No Stain lode	sn sand, some silb	<u> </u>
	MOBL	3.8	100]	1	0	5M	No Stainlode	nr.	-
					7 -	H I				-	‡
					8 _	H		2.7		-	<u>†</u>
					9 _	# 1				-	+ 1
					10				CAA	_	Ι Ι
					11 -	- 9	30	SINT	SAA		<u>t</u> 1
	moist	5.3	No			2	100%	5/41	No stain / odor		-
					12	H I					‡ ·
					13	H				-	†
	Da.,		No		14	2	%	Sev-	SAA		- 1
	DRY	1.3	100		15	3	50%	SM	No Stain lodge		

						-		Boring/Well #	B411	
	Compli	nnce Fi	n <i>aineeri</i> i	ng " Remo	ediation			Project:	Royce Canyon Former Dr	ip Tenk
1.12			ntal, inc					Project #	034017013	
	21 21101	· Omme	rically line	•				Date	11/16/17	
Penetration Resistance Moisture	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithe	ology/Remarks	Well Completion
Day Dry	1870	No		15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 35	4	20% 20% 3	SW- SM	It grey for the No Stain, SI White, It. gre Coal, No St.	T fn sand, erocesils.	

4	Z	Compli LT Env	iance " E	ngineeri ental, inc	ng " Rem	ediation			Boring/Well # Project: Project # Date	BH-11 Royce Canyon Form 03401701 11-16-17	The same of the sa
Penetration Resistance	Moisture	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		logy/Remarks	Well Completion
		-			37						
	Day	1994	No	38'-46	41	8	60%	SM	It grey brow No stain, S	n Vryfn Sand Slight Oder	
	DAY	1186	NO		42 43 44 45 46	9	50%	5M	SAA No Stain, SI	ight adar	+ + + + + + + + + + + + + + + + + + + +
	DRy	64.7	No	48'-50	47	10	40%	GM	SAA NO Stain/Od	100	- - - - - - - - - - - - - - - - - - -
					52 53 54 55 56						+ + + + + + + + + + + + + + + + + + + +
					57 58 59						+

)	alter (1)				1	Compliance LT Environme 848 E. 2nd Ai Durango, Col	<i>ie</i>	lation
	204				4/40/	Boring/We Date: 	Eric Carroll	Project: Royce Canyon For Project Number: 0340 Drilled By: Geomat Er	ormer Drip Tank 7013
Gravel Pack: 10-20 Silica		etector:	PID	-		Drilling Me	thod: Hollow Stem Auger	Sampling Method: Split Gentin Grout: Bentonite Sturry	Spoot
Casing Type: Schedule 40 Soreen Type:		Slot:				Diameter:	Length: Length:	Hole Diameter:	Depth to Liquid:
Penetration Resistance Moisture Content	2		Depth (ft. bgs.)	Sample Run	Recovery		2" // A Lithology/R	30'	Well Completion
			0 1 2 3 4 5 6				Hydrovac to s		
Mois, 5	5.3 N	0	7 8 9 10 11 12	Z S	30%	Sw- SM	lt. reddish brown s No stain/oder It. reddish brown, sh	-	
moist 8	. 7 No	9	14 I 15 T	2 3	2010		No stain lodor	2007th/ 01.00C 9110	

						-		Boring/Well #	BH-12	3.09 m
11	Compl	lance 4 E	ngineeri	ng " Rem	ediation			Project:	Royce Canyon Former	
LLZ			ental, inc					Project #	034017013	I BE TO
				- 50				Date	11-16-17	
Resistance Moisture	Vapor (pom)	Staining	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Lithol	ogy/Remarks	Well Completio
Resistance Moisture		No		15 16 17 18 19 20 21 22	3		SM	white for sand NO Stain/odd		+ + + + + + + + + + + + + + + + + + + +
PRY	169	Ne	73'-28 ⁴	23 24 25 26 27	4	30%	5M	SAA NO Stain/oold	o 🖍	+ + + + + + + + + + + + + + + + + + + +
D Ry	71.8	NO	78'·3v	28 29 30 31 32	5		5M	SAA No Seaintala		T
				33 34 35 36 37						† † †

Compliance .. Engineering .. Remediation LT Environmental, Inc. 848 E. 2nd Ave Durango, Colorado 81301 BORING LOG/MONITORING WELL COMPLETION DIAGRAM Boring/Well Number: Royce Canyon Former Drip Tank Project Number: Date: 1-16-17 034017013 Drifled By: Geomat Engineering **Eric Carroll** Sampling Method: 5 Plit Speen Drilling Method: PID Hollow Stem Auger Gravel Pack: Seal: Grout: 10-20 Silica Sand Bentonite Chips Hole Diameter: 7.5 % Depth to Liquid: Diameter: Schedule 40 PVC NA NA Depth to Water: creen Type: Length: NA Schedule 40 PVC 0.010" NA Penetration Resistance Vapor (ppm) Moisture Content Soil/Rock Type Staining Sample # Recovery Well Depth Sample Lithology/Remarks Completion (ft. bgs.) Run Hydrovac Pornole to 5' It reddish brown sand, some sile Sur. No Stains Oder mais 6.2 SM 10 11 12 13 SAM 14 Sw-80% SM moise 54.3 NO 16 grey brown sound Nostain Strong 15

1

	-				450 (600)	-			Boring/Well #	BH-13	
T	Co	mpi	liance "	Engineer	ing "Rem	ediation			Project:	Royce Canyon Form	ner Drip Tank
12				ental, in					Project #	0340170	13
							_		Date	11-16-17	
Moisture	Content	(maa)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithol	logy/Remarks	Well Completion
					15 16	-			grey sand, st Cuttings	rong edor from	
					18						Ī
DRY	14	8	No		19 _	3	30%	SM	No Stain, St		+
					21 22						‡
				:	23		0,		lb greyish brown	o en sand	+
DRY	30	8	No	23'-25'	25	4	600%	5 M	No Stain, Sli		†
					26						†
6 -					28 1	٠, -	1/9	. 04	It brown, for so	and, colools	<u> </u>
DRY	138	3	NO		30 ‡	5	12	5M	No Stain, N	robec (‡
					32	. , .					+
					33	-	+		It brown, fusar		+
Dry.	121		No	33'-35'	35	6	5	IM .	No Stain/o	dor	‡
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	,	12						tal .	Date:	11-16-17	Project Number: 034017	013
							Maria Caranta	2	Logged By	Eric Carroll	Drilled By: Geomat Eng	ineering
	Elevation:	101	War War	Detector		PID	The state of the s	VON	Drilling Ma		Sampling Method: Continu	
l	Gravel Pac		. Cand			FID			Seal:		Grout: Bentonite Slurry	ious .
	Casing Typ	e:	Sand	-	я			_	Diameter:	Length:	Hole Diameter:	Depth to Liquid:
	Screen Тур				Slot:				Diameter:	2" NA	Total Depth:	Depth to Water:
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	Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
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4)		1					· ·	540	11 10-17	
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ATTACHMENT 2 LABORATORY ANALYTICAL REPORTS





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

October 31, 2017

Aaron Galer Williams Four Corners 188 CR 4900 Bloomfield, NM 87413 TEL: (505) 632-4442

FAX

RE: Royce Canyon Former Drip Tank

OrderNo.: 1710C96

Dear Aaron Galer:

Hall Environmental Analysis Laboratory received 9 sample(s) on 10/25/2017 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 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH01@3-5'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/19/2017 3:00:00 PM

Lab ID:

1710C96-001

Matrix: MEOH (SOIL)

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLII	NE RANGE				Analys	t: DJF
Gasoline Range Organics (GRO)	5600	75	mg/Kg	20	10/25/2017 11:27:11 A	M G46636
Surr: BFB	89.1	70-130	%Rec	20	10/25/2017 11:27:11 A	M G46636
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analys	t: TOM
Diesel Range Organics (DRO)	2400	98	mg/Kg	10	10/25/2017 1:14:32 PM	34618
Motor Oil Range Organics (MRO)	2300	490	mg/Kg	10	10/25/2017 1:14:32 PM	34618
Surr: DNOP	0	70-130	S %Rec	10	10/25/2017 1:14:32 PM	34618
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analys	: DJF
Benzene	5.0	0.38	mg/Kg	20	10/25/2017 11:27:11 A	M 34583
Toluene	60	0.75	mg/Kg	20	10/25/2017 11:27:11 A	M 34583
Ethylbenzene	14	0.75	mg/Kg	20	10/25/2017 11:27:11 A	M 34583
Xylenes, Total	220	7.5	mg/Kg	100	10/25/2017 12:24:54 P	M 34583
Surr: 1,2-Dichloroethane-d4	65.7	70-130	S %Rec	20	10/25/2017 11:27:11 A	M 34583
Surr: 4-Bromofluorobenzene	92.3	70-130	%Rec	20	10/25/2017 11:27:11 A	M 34583
Surr: Dibromofluoromethane	81.0	70-130	%Rec	20	10/25/2017 11:27:11 A	M 34583
Surr: Toluene-d8	104	70-130	%Rec	20	10/25/2017 11:27:11 A	M 34583

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 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH01@15-17'

CLIENT: Williams Four Corners Royce Canyon Former Drip Tank Collection Date: 10/19/2017 4:20:00 PM Project:

1710C96-002 Lab ID: Matrix: MEOH (SOIL) Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qua	al Units	DF	Date Analyzed Batcl	h
EPA METHOD 8015D MOD: GASOLINE	RANGE				Analyst: DJF	
Gasoline Range Organics (GRO)	21	3.7	mg/Kg	1	10/25/2017 12:53:45 PM G466	36
Surr: BFB	80.0	70-130	%Rec	1	10/25/2017 12:53:45 PM G466	36
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	3			Analyst: TOM	Y .
Diesel Range Organics (DRO)	26	9.7	mg/Kg	1	10/25/2017 12:18:45 PM 34618	В
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	10/25/2017 12:18:45 PM 34618	3
Surr: DNOP	81.9	70-130	%Rec	1	10/25/2017 12:18:45 PM 34618	3
EPA METHOD 8260B: VOLATILES SHO	RT LIST				Analyst: DJF	
Benzene	ND	0.018	mg/Kg	1	10/25/2017 12:53:45 PM 34583	3
Toluene	0.093	0.037	mg/Kg	1	10/25/2017 12:53:45 PM 34583	3
Ethylbenzene	ND	0.037	mg/Kg	1	10/25/2017 12:53:45 PM 34583	3
Xylenes, Total	0.44	0.074	mg/Kg	1	10/25/2017 12:53:45 PM 34583	3
Surr: 1,2-Dichloroethane-d4	93.5	70-130	%Rec	1	10/25/2017 12:53:45 PM 34583	3
Surr: 4-Bromofluorobenzene	92.1	70-130	%Rec	1	10/25/2017 12:53:45 PM 34583	3
Surr: Dibromofluoromethane	97.4	70-130	%Rec	1	10/25/2017 12:53:45 PM 34583	3
Surr: Toluene-d8	104	70-130	%Rec	1	10/25/2017 12:53:45 PM 34583	3

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
- E Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 15
- P Sample pH Not In Range
- Reporting Detection Limit RL
- Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH01@33-35'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 9:40:00 AM

Lab ID:

1710C96-003

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS	6			Analys	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	10/26/2017 5:55:32 PM	1 34633
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	10/26/2017 5:55:32 PM	34633
Surr: DNOP	87.0	70-130	%Rec	1	10/26/2017 5:55:32 PM	34633
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	10/27/2017 1:54:15 AN	34614
Surr: BFB	83.8	15-316	%Rec	1	10/27/2017 1:54:15 AM	34614
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.045	0.023	mg/Kg	1	10/27/2017 1:54:15 AM	34614
Toluene	0.46	0.047	mg/Kg	1	10/27/2017 1:54:15 AM	34614
Ethylbenzene	ND	0.047	mg/Kg	1	10/27/2017 1:54:15 AM	34614
Xylenes, Total	0.38	0.093	mg/Kg	1	10/27/2017 1:54:15 AM	34614
Surr: 4-Bromofluorobenzene	94.9	80-120	%Rec	1	10/27/2017 1:54:15 AM	34614

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 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH02@13-15'

Project: Royc

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 10:50:00 AM

Lab ID: 1710C96-004

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	том
Diesel Range Organics (DRO)	180	9.3	mg/Kg	1	10/26/2017 6:20:19 PM	34633
Motor Oil Range Organics (MRO)	68	47	mg/Kg	1	10/26/2017 6:20:19 PM	34633
Surr: DNOP	95.0	70-130	%Rec	1	10/26/2017 6:20:19 PM	34633
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	1100	24	mg/Kg	5	10/27/2017 2:17:30 AM	34614
Surr: BFB	426	15-316	S %Rec	5	10/27/2017 2:17:30 AM	34614
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.12	mg/Kg	5	10/27/2017 2:17:30 AM	34614
Toluene	25	2.4	mg/Kg	50	10/27/2017 10:07:42 PM	A 34614
Ethylbenzene	5.1	0.24	mg/Kg	5	10/27/2017 2:17:30 AM	34614
Xylenes, Total	58	0.49	mg/Kg	5	10/27/2017 2:17:30 AM	34614
Surr: 4-Bromofluorobenzene	116	80-120	%Rec	5	10/27/2017 2:17:30 AM	34614

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 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1710C96

Received Date: 10/25/2017 8:00:00 AM

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

1710C96-005

Lab ID:

CLIENT: Williams Four Corners Client Sample ID: BH02@24-25'

Project: Royce Canyon Former Drip Tank **Collection Date:** 10/20/2017 11:20:00 AM

Matrix: SOIL

Analyses Result **PQL Qual Units DF** Date Analyzed Batch **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: TOM Diesel Range Organics (DRO) 10/26/2017 6:45:09 PM 34633 9.5 mg/Kg Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 10/26/2017 6:45:09 PM 34633 Surr: DNOP 79.0 70-130 %Rec 10/26/2017 6:45:09 PM 34633 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4.9 mg/Kg 10/27/2017 10:31:05 PM 34614 Surr: BFB 82.1 15-316 %Rec 1 10/27/2017 10:31:05 PM 34614 **EPA METHOD 8021B: VOLATILES** Analyst: NSB 10/27/2017 10:31:05 PM 34614 Benzene ND 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 10/27/2017 10:31:05 PM 34614 Ethylbenzene ND 0.049 mg/Kg 10/27/2017 10:31:05 PM 34614 Xylenes, Total ND 0.097 mg/Kg 10/27/2017 10:31:05 PM 34614 Surr: 4-Bromofluorobenzene 93.2 80-120 %Rec 10/27/2017 10:31:05 PM 34614

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 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH03@0-5'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 1:00:00 PM

Lab ID:

1710C96-006

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS	3			Analysi	: том
Diesel Range Organics (DRO)	290	9.4	mg/Kg	1	10/26/2017 7:09:56 PM	34633
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	10/26/2017 7:09:56 PM	34633
Surr: DNOP	104	70-130	%Rec	1	10/26/2017 7:09:56 PM	34633
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	440	50	mg/Kg	10	10/27/2017 2:40:50 AM	34614
Surr: BFB	183	15-316	%Rec	10	10/27/2017 2:40:50 AM	34614
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.40	0.25	mg/Kg	10	10/27/2017 2:40:50 AM	34614
Toluene	8.1	0.50	mg/Kg	10	10/27/2017 2:40:50 AM	34614
Ethylbenzene	1.3	0.50	mg/Kg	10	10/27/2017 2:40:50 AM	34614
Xylenes, Total	17	1.0	mg/Kg	10	10/27/2017 2:40:50 AM	34614
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	10	10/27/2017 2:40:50 AM	34614

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 6 of 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH03@33-35'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 2:00:00 PM

Lab ID:

1710C96-007

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analy	st: TOM
Diesel Range Organics (DRO)	51	10	mg/Kg	1	10/26/2017 7:34:43 P	M 34633
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	10/26/2017 7:34:43 P	M 34633
Surr: DNOP	93.6	70-130	%Rec	1	10/26/2017 7:34:43 P	M 34633
EPA METHOD 8015D: GASOLINE RA	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/28/2017 12:04:44	AM 34614
Surr: BFB	82.4	15-316	%Rec	1	10/28/2017 12:04:44	AM 34614
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.024	mg/Kg	1	10/28/2017 12:04:44	AM 34614
Toluene	0.069	0.048	mg/Kg	1	10/28/2017 12:04:44	AM 34614
Ethylbenzene	ND	0.048	mg/Kg	1	10/28/2017 12:04:44	AM 34614
Xylenes, Total	ND	0.097	mg/Kg	1	10/28/2017 12:04:44	AM 34614
Surr: 4-Bromofluorobenzene	94.0	80-120	%Rec	1	10/28/2017 12:04:44	AM 34614

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 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH04@19-20'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 3:15:00 PM

Lab ID: 1710C96-008

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analy	st: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	10/26/2017 7:59:29 P	M 34633
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	10/26/2017 7:59:29 P	M 34633
Surr: DNOP	88.5	70-130	%Rec	1	10/26/2017 7:59:29 P	M 34633
EPA METHOD 8015D: GASOLINE RA	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	71	9.2	mg/Kg	2	10/28/2017 12:28:15	AM 34614
Surr: BFB	111	15-316	%Rec	2	10/28/2017 12:28:15	AM 34614
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	0.11	0.046	mg/Kg	2	10/28/2017 12:28:15	AM 34614
Toluene	0.90	0.092	mg/Kg	2	10/28/2017 12:28:15	AM 34614
Ethylbenzene	0.14	0.092	mg/Kg	2	10/28/2017 12:28:15	AM 34614
Xylenes, Total	1.6	0.18	mg/Kg	2	10/28/2017 12:28:15	AM 34614
Surr: 4-Bromofluorobenzene	99.2	80-120	%Rec	2	10/28/2017 12:28:15	AM 34614

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 8 of 15
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710C96

Date Reported: 10/31/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH04@34-35'

Project:

Royce Canyon Former Drip Tank

Collection Date: 10/20/2017 4:00:00 PM

Lab ID:

1710C96-009

Matrix: SOIL

Received Date: 10/25/2017 8:00:00 AM

Analyses	Result	PQL Qu	ıal Units	DF Date Analyzed B	atch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	6		Analyst: T	OM
Diesel Range Organics (DRO)	39	9.1	mg/Kg	1 10/26/2017 8:24:15 PM 3	4633
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1 10/26/2017 8:24:15 PM 3	4633
Surr: DNOP	92.0	70-130	%Rec	1 10/26/2017 8:24:15 PM 3	4633
EPA METHOD 8015D: GASOLINE RAN	GE			Analyst: N	ISB
Gasoline Range Organics (GRO)	54	4.8	mg/Kg	1 10/28/2017 12:51:40 AM 3	4614
Surr: BFB	233	15-316	%Rec	1 10/28/2017 12:51:40 AM 3	4614
EPA METHOD 8021B: VOLATILES				Analyst: N	ISB
Benzene	0.22	0.024	mg/Kg	1 10/28/2017 12:51:40 AM 3	4614
Toluene	1.8	0.048	mg/Kg	1 10/28/2017 12:51:40 AM 3	4614
Ethylbenzene	0.18	0.048	mg/Kg	1 10/28/2017 12:51:40 AM 3	4614
Xylenes, Total	2.7	0.095	mg/Kg	1 10/28/2017 12:51:40 AM 34	4614
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1 10/28/2017 12:51:40 AM 34	4614

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 9 of 15
- 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#: 1710C96

31-Oct-17

Client:

Williams Four Corners

Project: Royce (Canyon Former Drip Tank		3.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Sample ID LCS-34618	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 34618	RunNo: 46629	
Prep Date: 10/25/2017	Analysis Date: 10/25/2017	SeqNo: 1485341	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	49 10 50.00	0 97.5 73.2	114
Surr: DNOP	4.0 5.000	79.6 70	130
Sample ID MB-34618	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 34618	RunNo: 46629	
Prep Date: 10/25/2017	Analysis Date: 10/25/2017	SeqNo: 1485342	Units: mg/Kg
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	7.5 10.00	74.6 70	130
Sample ID LCS-34633	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 34633	RunNo: 46662	
Prep Date: 10/25/2017	Analysis Date: 10/26/2017	SeqNo: 1487179	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	47 10 50.00	0 94.3 73.2	114
Surr: DNOP	4.9 5.000	97.4 70	130
Sample ID MB-34633	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 34633	RunNo: 46662	
Prep Date: 10/25/2017	Analysis Date: 10/26/2017	SeqNo: 1487180	Units: mg/Kg
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	10 10.00	100 70	130

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- 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
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits
- Page 10 of 15

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1710C96

31-Oct-17

Client:

Williams Four Corners

Project: Royce	Canyon Former Drip Tank		
Sample ID MB-34583	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: PBS	Batch ID: 34583	RunNo: 46638	
Prep Date: 10/24/2017	Analysis Date: 10/25/2017	SeqNo: 1485976 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: BFB	830 1000	83.4 15 316	
Sample ID LCS-34583	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: LCSS	Batch ID: 34583	RunNo: 46638	
Prep Date: 10/24/2017	Analysis Date: 10/25/2017	SeqNo: 1485977 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: BFB	920 1000	91.8 15 316	
Sample ID MB-34614	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: PBS	Batch ID: 34614	RunNo: 46672	1-84
Prep Date: 10/25/2017	Analysis Date: 10/26/2017	SeqNo: 1487505 Units: mg/Kg	200
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Gasoline Range Organics (GRO)	ND 5.0		
Surr: BFB	810 1000	81.3 15 316	
Sample ID LCS-34614	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: LCSS	Batch ID: 34614	RunNo: 46672	* . ! E
Prep Date: 10/25/2017	Analysis Date: 10/26/2017	SeqNo: 1487506 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Gasoline Range Organics (GRO)	25 5.0 25.00	0 102 75.9 131	
Surr: BFB	980 1000	97.8 15 316	
Sample ID MB-34651	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: PBS	Batch ID: 34651	RunNo: 46704	
Prep Date: 10/26/2017	Analysis Date: 10/27/2017	SeqNo: 1488208 Units: %Rec	
Analyte	TANCON MARKET MARKET MARKET AND THE PARTY OF		Qual
Surr: BFB	870 1000	87.2 15 316	
Sample ID LCS-34651	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range	
Client ID: LCSS	Batch ID: 34651	RunNo: 46704	
Prep Date: 10/26/2017	Analysis Date: 10/27/2017	SeqNo: 1488209 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: BFB	990 1000	99.0 15 316	

- 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
- Value above quantitation range
- Analyte detected below quantitation limits
- Page 11 of 15

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1710C96

31-Oct-17

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Williams Four Corners

Project: Ro	oyce Canyon Former Drip Tank	The force of the second second	
Sample ID MB-34583	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles	The electric
Client ID: PBS	Batch ID: 34583	RunNo: 46638	
Prep Date: 10/24/201	7 Analysis Date: 10/25/2017	SeqNo: 1486008 Units: %Rec	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: 4-Bromofluorobenzer	ne 1.0 1.00	99.6 80 120	
Sample ID LCS-34583	SampType: LCS	TestCode: EPA Method 8021B: Volatiles	
Client ID: LCSS	Batch ID: 34583	RunNo: 46638	
Prep Date: 10/24/201	7 Analysis Date: 10/25/2017	SeqNo: 1486009 Units: %Rec	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: 4-Bromofluorobenzer	e 1.0 1.00	0 101 80 120	
Sample ID MB-34614	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles	
Client ID: PBS	Batch ID: 34614	RunNo: 46672	
Prep Date: 10/25/201	7 Analysis Date: 10/26/2017	SeqNo: 1487537 Units: mg/Kg	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Benzene	ND 0.025		
Toluene	ND 0.050		
Ethylbenzene	ND 0.050		
Xylenes, Total Surr: 4-Bromofluorobenzen	ND 0.10 e 0.94 1.00	0 93.9 80 120	
Suit. 4-Bioinolidorobetizei	0.94 1.00	0 55.5 00 120	
Sample ID LCS-34614	SampType: LCS	TestCode: EPA Method 8021B: Volatiles	
Client ID: LCSS	Batch ID: 34614	RunNo: 46672	
Prep Date: 10/25/201	7 Analysis Date: 10/26/2017	SeqNo: 1487538 Units: mg/Kg	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Benzene	0.98 0.025 1.00	0 0 98.4 77.3 128	
Toluene	0.97 0.050 1.00		
Ethylbenzene	0.96 0.050 1.00	0 0 95.5 80.7 127	
Xylenes, Total	2.9 0.10 3.00	0 0 97.2 81.6 129	
Surr: 4-Bromofluorobenzen	e 0.98 1.00	0 97.7 80 120	
Sample ID MB-34651	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles	
Client ID: PBS	Batch ID: 34651	RunNo: 46704	
Prep Date: 10/26/201	7 Analysis Date: 10/27/2017	SeqNo: 1488248 Units: %Rec	
Analyte	Result PQL SPK valu	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded

1.0

Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

Surr: 4-Bromofluorobenzene

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank

120

Value above quantitation range

99.7

Analyte detected below quantitation limits

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Sample pH Not In Range

1.000

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1710C96

31-Oct-17

Client:

Williams Four Corners

Project:

Royce Canyon Former Drip Tank

Sample ID LCS-34651

SampType: LCS

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: 34651

RunNo: 46704

Prep Date: 10/26/2017 Analysis Date: 10/27/2017

SeqNo: 1488249

LowLimit

Units: %Rec

HighLimit

Surr: 4-Bromofluorobenzene

Analyte

Result 1.0

SPK value SPK Ref Val

%REC

%RPD **RPDLimit** Qual

1.000

100

120

Qualifiers:

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

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 J

Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1710C96

31-Oct-17

Client:

Williams Four Corners

Project:

Royce Canyon Former Drip Tank

Project: Royce	Canyon Form	er Drip	Tank													
Sample ID mb-34583	SampTy	pe: ME	BLK	Tes	tCode: E	EPA Method 8260B: Volatiles Short List										
Client ID: PBS	Batch ID: 34583			F	RunNo: 4											
Prep Date: 10/24/2017	Analysis Da	ite: 10)/25/2017	SeqNo: 1486152 Uni			Units: mg/K	nits: mg/Kg								
Analyte Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Benzene																
Toluene	ND	0.050														
Ethylbenzene	ND	0.050														
Xylenes, Total	ND	0.10														
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.8	70	130									
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.0	70	130									
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130									
Surr: Toluene-d8	0.51		0.5000		102	70	130									
Sample ID Ics-34583	SampTy	pe: LC	s	Tes	tCode: E	PA Method	8260B: Volat	iles Short	List							
Client ID: LCSS	Batch	ID: 34 5	583	F	RunNo: 4	6636										
Prep Date: 10/24/2017	Analysis Da	te: 10	/25/2017	S	SeqNo: 1	486153	Units: mg/Kg									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Benzene	0.96	0.025	1.000	0	95.9	70	130									
Toluene	0.96	0.050	1.000	0	95.8	70	130									
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		101	70	130									
Surr: 4-Bromofluorobenzene	0.43		0.5000		86.5	70	130									
Surr: Dibromofluoromethane	0.46		0.5000		93.0	70	130									
Surr: Toluene-d8	0.51		0.5000		102	70	130									
Sample ID mb-34614	SampTy	pe: MB	LK	Test	tCode: El	PA Method	8260B: Volat	iles Short	List							
Client ID: PBS	Batch	D: 346	614	RunNo: 46686												
Prep Date: 10/25/2017	Analysis Da	te: 10	/26/2017	S	SeqNo: 1	487592	Units: %Rec									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130									
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.1	70	130									
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130									
Surr: Toluene-d8	0.50		0.5000		100	70	130			_						
Sample ID Ics-34614	SampTy	pe: LC	S	Test	Code: El	PA Method	8260B: Volat	iles Short	List							
Client ID: LCSS	Batch I	D: 346	614	R	tunNo: 4	6686										
Prep Date: 10/25/2017	Analysis Da	te: 10	/26/2017	S	eqNo: 1	487593	Units: %Red	:								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		109	70	130									
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.7	70	130									
Surr: Dibromofluoromethane	0.49		0.5000		97.7	70	130									
Surr: Toluene-d8	0.50		0.5000		101	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 14 of 15

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#:

1710C96

31-Oct-17

Client:

Williams Four Corners

Project:

Royce Canyon Former Drip Tank

Sample ID rb	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range									
Client ID: PBS	Batch ID: G46636	RunNo: 46636									
Prep Date:	Analysis Date: 10/25/2017	SeqNo: 1486155 Units: mg/K	g								
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual								
Gasoline Range Organics (GRO)	ND 5.0										
Surr: BFB	410 500.0	81.1 70 130									
Sample ID 2.5ug gro lcs	SampType: LCS	pe: LCS TestCode: EPA Method 8015D Mod: Gasoline Range									
Client ID: LCSS	Batch ID: G46636	RunNo: 46636									
Bron Data:	Analysis Date: 40/25/2017	Soallo: 1496166 Units: malk	~								

The state of the s											
Prep Date:	Analysis Date: 10/25/2017			S	SeqNo: 1	486156	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	70	130				
Surr: BFB	410		500.0		82.7	70	130				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- 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

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

Sample Log-In Check List

Client Name: WILLIAMS FOUR CORN Work Order N	lumber: 1710C96		RcptNo:	1
Received By: Sophia Campuzano 10/25/2017 7:00	0:00 AM	Sophie Corpu-		
Completed By: Erin Metendrez 10/25/2017 8:20	5:16 AM	Sophia Organ		
Reviewed By: 10 25 17		, ,		
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	. 10		
<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 \square	
6. Sample(s) in proper container(s)?	Yes 🗸	No 🗌		
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗌		
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗸	No 🗆		
9. Was preservative added to bottles?	Yes	No 🗹	NA 🗆	
10.VOA vials have zero headspace?	Yes 🗌	No 🗌	No VOA Vials	
11. Were any sample containers received broken?	Yes	No 🗹	# of preserved	
12. Does paperwork match bottle labels?	Yes 🗸	No 🗆	bottles checked for pH:	>12 unless noted)
(Note discrepancies on chain of custody) 13. Are matrices correctly identified on Chain of Custody?	Yes 🗸	No 🗆	Adjusted?	212 dilless floted)
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:	
(ii no, notify customer for authorization.)				
Special Handling (if applicable)	_*			
16. Was client notified of all discrepancies with this order?	Yes	No 🗔	NA 🗹	
Person Notified:	Date:	AND REAL PROPERTY OF THE PROPE		
By Whom:	/ia: eMail Pr	none Fax	In Person	
Regarding:		- TOTAL STREET AND ASSESSMENT OF THE STREET ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT		
Client Instructions:				
17. Additional remarks:				
18. Cooler Information				
Cooler No Temp °C Condition Seal Intact Seal N 1 1.2 Good Yes	lo Seal Date	Signed By		
				-

Chain-of-Custody Record			ı urn-Around	ıme:	see comments						_		***						
Client: Williams Four Corners		□ Standard	₩ Rush	See comments for T.A.T.	-	198										ATI TOF			
	1410	1 0 501	n Galer	Project Name	:												M	OF	
Mailing	Address:	PACE	Charlet Island	Rours C	anyon f	Former Drip Tanl	www.hallenvironmental.com												
Mailing Address: 295 Chipeta Way Salt Lake City, UT 84188			Chipeta Way	Project #:	0														
	It Lo	ne c	Itu. Le orings	r rojout w.			Tel. 505-345-3975 Fax 505-345-4107 Analysis Request												
Phone :	#: 5	01-38	4-6746	D : (14					all		7	Anai		Req	uest	and the			
email o	r Fax#: (varovi,	galer Quilliams.com	Project Manag	ger: - A. Go	ler	21)	only)					304	ູເກ					
QA/QC I				LTE-	N. R.	LEWE	(80.	sas			SIMS		0,40	PCB					
Accredi			Level 4 (Full Validation)				TMB's (8021)	TPH (Gas	K				D ₂ ,P	8082 F					
□ NEL		□ Othe	r	Sampler: \(\) On Ice	Samy P	DMWs.	1	d l	0	8.1	327(3,N	_		2	- 1		12
A EDD	(Type)	PAP		Sample Temp	perature: / //	+05(cr)=+9-x	H	ا پیر	S)	141	0 50	as	8	des		00	1		>
						+0/5/(cr)=+9 -0.2 1.2	MIBE	MTBE	TPH 8015B GRO / DRO / MRO	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)	Pesticides	8260B (VOA)	8270 (Semi-VOA)			100
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative	HEAL No.		+ ×	80	Ž	Ž v	A 8	ns (Pe)B((Se			7 2
				Type and #	Туре	1710096	GTEX	ВТЕХ	진	핕	PAH	S S	Anio	8081	3260	3270			Air Rubbles
10-19	15:00	BS	BH01@3-5'	1-402	(00	-001	X		X	-		-		-	-		+		
1,00	15.00	16:20	BH01@15-17'	1		-007	X		X										
	09:40		BH 01@33-35'	11 13		-003	X		X	1	\top	\top							
1	10:50		BH 02@13-15'			-004	X		X	\top	\top	\top						1	
1	11:20		BH02@24-25'			-005	X		X	+	+	1					\top	1	
1	13:00		BH03@0-5'			-006	X		X			1	1				_		
1	14:00		BH 03 @ 33-35'			-007	X			_		+						1-	+
+-	15:15		BH04@19-20'			-008	\overrightarrow{X}		X	_	_	+-	\vdash	1			-+	\top	+
1	16:00	1	BH04@34-35	1		-00A		-	X	+	+	+	-	-	_	\vdash	-	+	 - - - - - - - - -
	10.00	_	51104 6 74 30			-009		-		-	+-	+	+	\vdash			-	+	++
				1	-		-		-	+	+	-	\vdash	\vdash	-		+	+	++
		8				-	+		\dashv	\dashv	-	+	-	-	-	\vdash	-		\vdash
Date:	Time:	Relinguishe	ed by:	Received by:	1	Date Time	Rer	narke		\perp			<u></u>	_				_	
Who was	133/		1/1/	111	la L	10/1	Sa	Me	da	y (esu	ts	tor	R	HO	1 (6	3-	17/	
Date:	Time:	Relinquish	ed by:	Received by:	JUA	Date Time	-							13	HO	11 6	10-	1.4	
d,	100	1	1 tilner	Speli (2 /	0/25/17 0800													
124/17	f necessary	samples subj	mitted to Hall Environmental may be subc	ontracted to other ad			is poss	bility. A	ny su	b-contr	acted da	ta will t	oe clea	rly not	ated or	n the a	nalytical	report.	



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

November 06, 2017

Aaron Galer Williams Four Corners 188 CR 4900 Bloomfield, NM 87413 TEL: (505) 632-4442

FAX

RE: Royce Canyon

OrderNo.: 1710F93

Dear Aaron Galer:

Hall Environmental Analysis Laboratory received 8 sample(s) on 10/31/2017 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 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-05 10'

Project:

Royce Canyon

Collection Date: 10/26/2017 2:00:00 PM

Lab ID: 1710F93-001

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	1			Analys	t: TOM
Diesel Range Organics (DRO)	570	9.6	mg/Kg	1	11/3/2017 9:21:08 PM	34780
Motor Oil Range Organics (MRO)	290	48	mg/Kg	1	11/3/2017 9:21:08 PM	34780
Surr: DNOP	105	70-130	%Rec	1	11/3/2017 9:21:08 PM	34780
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	6000	240	mg/Kg	50	11/3/2017 10:18:26 AM	1 34772
Surr: BFB	214	15-316	%Rec	50	11/3/2017 10:18:26 AM	34772
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Methyl tert-butyl ether (MTBE)	ND	4.9	mg/Kg	50	11/3/2017 10:18:26 AM	1 34772
Benzene	3.8	1.2	mg/Kg	50	11/3/2017 10:18:26 AM	34772
Toluene	110	2.4	mg/Kg	50	11/3/2017 10:18:26 AM	34772
Ethylbenzene	14	2.4	mg/Kg	50	11/3/2017 10:18:26 AM	34772
Xylenes, Total	190	4.9	mg/Kg	50	11/3/2017 10:18:26 AM	34772
Surr: 4-Bromofluorobenzene	98.2	80-120	%Rec	50	11/3/2017 10:18:26 AM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-05 45'

Project:

Royce Canyon

Collection Date: 10/26/2017 2:15:00 PM

Lab ID: 1710F93-002

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL	RANGE ORGANICS			1	Analyst	TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	11/3/2017 9:43:15 PM	34780
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/3/2017 9:43:15 PM	34780
Surr: DNOP	77.2	70-130	%Rec	1	11/3/2017 9:43:15 PM	34780
EPA METHOD 8015D: GASOLIN	ERANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Surr: BFB	81.7	15-316	%Rec	1	11/3/2017 12:39:20 PM	34772
EPA METHOD 8021B: VOLATILE	S				Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.096	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Benzene	ND	0.024	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Toluene	0.15	0.048	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Ethylbenzene	ND	0.048	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Xylenes, Total	ND	0.096	mg/Kg	1	11/3/2017 12:39:20 PM	34772
Surr: 4-Bromofluorobenzene	88.2	80-120	%Rec	1	11/3/2017 12:39:20 PM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-06 35'

Project:

Royce Canyon

Collection Date: 10/27/2017 7:30:00 AM

Lab ID: 1

1710F93-003

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analys	: TOM
Diesel Range Organics (DRO)	37	9.6	mg/Kg	1	11/3/2017 10:05:39 PM	1 34780
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/3/2017 10:05:39 PM	34780
Surr: DNOP	86.7	70-130	%Rec	1	11/3/2017 10:05:39 PM	1 34780
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	: NSB
Gasoline Range Organics (GRO)	10	4.7	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Surr: BFB	107	15-316	%Rec	1	11/3/2017 1:49:36 PM	34772
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Methyl tert-butyl ether (MTBE)	ND	0.094	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Benzene	0.083	0.024	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Toluene	0.63	0.047	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Ethylbenzene	ND	0.047	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Xylenes, Total	0.98	0.094	mg/Kg	1	11/3/2017 1:49:36 PM	34772
Surr: 4-Bromofluorobenzene	95.2	80-120	%Rec	1	11/3/2017 1:49:36 PM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-06 50'

Project: Ro

Royce Canyon

Collection Date: 10/27/2017 7:50:00 AM

Lab ID: 1710F93-004

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS		NEC H		Analyst	том
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	11/3/2017 10:27:47 PM	34780
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	11/3/2017 10:27:47 PM	34780
Surr: DNOP	80.9	70-130	%Rec	1	11/3/2017 10:27:47 PM	34780
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Surr: BFB	87.0	15-316	%Rec	1	11/3/2017 2:12:48 PM	34772
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.098	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Benzene	ND	0.025	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Toluene	0.17	0.049	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Ethylbenzene	ND	0.049	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Xylenes, Total	0.15	0.098	mg/Kg	1	11/3/2017 2:12:48 PM	34772
Surr: 4-Bromofluorobenzene	94.8	80-120	%Rec	1	11/3/2017 2:12:48 PM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-07 20'

Project: Royce Canyon

Collection Date: 10/27/2017 8:20:00 AM

Lab ID: 1710F93-005

Matrix: SOIL Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	19	10	mg/Kg	1	11/3/2017 10:49:57 PM	34780
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	11/3/2017 10:49:57 PM	34780
Surr: DNOP	86.0	70-130	%Rec	1	11/3/2017 10:49:57 PM	34780
EPA METHOD 8015D: GASOLINE R.	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Surr: BFB	85.2	15-316	%Rec	1	11/3/2017 2:36:10 PM	34772
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.10	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Benzene	ND	0.025	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Toluene	ND	0.050	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Ethylbenzene	ND	0.050	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Xylenes, Total	ND	0.10	mg/Kg	1	11/3/2017 2:36:10 PM	34772
Surr: 4-Bromofluorobenzene	92.3	80-120	%Rec	1	11/3/2017 2:36:10 PM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-07 30'

Project:

Royce Canyon

Collection Date: 10/27/2017 8:45:00 AM

Lab ID: 1710F93-006

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	t PQL Qual Units			Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS		1 40 4	4.0	Analyst	TOM
Diesel Range Organics (DRO)	ND	8.4	mg/Kg	1	11/3/2017 11:12:02 PM	34780
Motor Oil Range Organics (MRO)	ND	42	mg/Kg	1	11/3/2017 11:12:02 PM	34780
Surr: DNOP	81.7	70-130	%Rec	1	11/3/2017 11:12:02 PM	34780
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Surr: BFB	82.0	15-316	%Rec	1	11/3/2017 2:59:31 PM	34772
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.097	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Benzene	ND	0.024	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Toluene	ND	0.049	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Ethylbenzene	ND	0.049	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Xylenes, Total	ND	0.097	mg/Kg	1	11/3/2017 2:59:31 PM	34772
Surr: 4-Bromofluorobenzene	89.0	80-120	%Rec	1	11/3/2017 2:59:31 PM	34772

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 6 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-08 15'

Project: Royce Canyon

Collection Date: 10/27/2017 10:30:00 AM

Lab ID: 1710F93-007

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qı	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/3/2017 11:34:18 PM	34780
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	11/3/2017 11:34:18 PM	34780
Surr: DNOP	86.2	70-130	%Rec	1	11/3/2017 11:34:18 PM	34780
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Surr: BFB	94.4	15-316	%Rec	1	11/3/2017 6:31:03 PM	34772
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Benzene	ND	0.024	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Toluene	ND	0.047	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Ethylbenzene	ND	0.047	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Xylenes, Total	ND	0.095	mg/Kg	1	11/3/2017 6:31:03 PM	34772
Surr: 4-Bromofluorobenzene	92.3	80-120	%Rec	1	11/3/2017 6:31:03 PM	34772

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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1710F93

Date Reported: 11/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-08 35'

Project:

Royce Canyon

Collection Date: 10/27/2017 10:50:00 AM

1710F93-008 Lab ID:

Matrix: SOIL

Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	11/3/2017 11:56:18 PM	A 34780
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	11/3/2017 11:56:18 PM	<i>I</i> 34780
Surr: DNOP	86.7	70-130	%Rec	1	11/3/2017 11:56:18 PM	<i>I</i> 34780
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Surr: BFB	86.1	15-316	%Rec	1	11/3/2017 6:54:20 PM	34772
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Methyl tert-butyl ether (MTBE)	ND	0.099	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Benzene	0.030	0.025	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Toluene	0.15	0.049	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Ethylbenzene	ND	0.049	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Xylenes, Total	0.16	0.099	mg/Kg	1	11/3/2017 6:54:20 PM	34772
Surr: 4-Bromofluorobenzene	92.2	80-120	%Rec	1	11/3/2017 6:54:20 PM	34772

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 8 of 11
- 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#:

1710F93

06-Nov-17

Client:

Williams Four Corners

Project: Royce (Canyon		4
Sample ID LCS-34793	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range	Organics
Client ID: LCSS	Batch ID: 34793	RunNo: 46863	
Prep Date: 11/3/2017	Analysis Date: 11/3/2017	SeqNo: 1494698 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit Qual
Surr: DNOP	4.4 5.000	87.7 70 130	
Sample ID MB-34780	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range	Organics
Client ID: PBS	Batch ID: 34780	RunNo: 46863	
Prep Date: 11/2/2017	Analysis Date: 11/3/2017	SeqNo: 1494699 Units: mg/Kg	
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	8.0 10.00	79.8 70 130	
Sample ID MB-34793	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range	Organics
Client ID: PBS	Batch ID: 34793	RunNo: 46863	
Prep Date: 11/3/2017	Analysis Date: 11/3/2017	SeqNo: 1494700 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit Qual
Surr: DNOP	8.0 10.00	80.3 70 130	p.c.
Sample ID LCS-34780	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range	Organics
Client ID: LCSS	Batch ID: 34780	RunNo: 46863	
Prep Date: 11/2/2017	Analysis Date: 11/3/2017	SeqNo: 1494944 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	48 10 50.00	0 95.1 73.2 114	
Surr: DNOP	4.4 5.000	88.4 70 130	

- 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
- Value above quantitation range
- Analyte detected below quantitation limits
- Page 9 of 11

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

Hall Environmental Analysis Laboratory, Inc.

950

951.5

WO#:

1710F93

06-Nov-17

Client:

Williams Four Corners

Project:

Royce Canyon

Project:	Royce Ca	anyon								1	
Sample ID	MB-34772	SampTyp	e: MI	BLK	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	je	
Client ID:	PBS	Batch II	D: 34	772	F	RunNo: 4	16867				
Prep Date:	11/2/2017	Analysis Date	e: 1	1/3/2017		SeqNo: 1	495077	Units: mg/l	K g		
Analyte	The first	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	e Organics (GRO)	ND	5.0								
Surr: BFB		820		1000		82.3	15	316			
Sample ID	LCS-34772	SampTyp	e: LC	s	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	e	
Client ID:	LCSS	Batch II	D: 34	772	F	RunNo: 4	6867				
Prep Date:	11/2/2017	Analysis Date	e: 1 ′	1/3/2017	5	SeqNo: 1	495078	Units: mg/l	(g		
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ü	e Organics (GRO)	25	5.0	25.00	0	101	75.9	131			
Surr: BFB		940		1000		94.4	15	316			
Sample ID	1710F93-002AMS	SampTyp	e: MS	3	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	е	
Client ID:	BH-05 45'	Batch II	D: 34	772	F	RunNo: 4	6867				
Prep Date:	11/2/2017	Analysis Date	e: 1 1	1/3/2017	5	SeqNo: 1	495084	Units: mg/h	(g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	29	4.9	24.34	1.475	112	77.8	128			
Surr: BFB	A TOP A	920		973.7	-	94.7	15	316			
Sample ID	1710F93-002AMS	D SampType	e: MS	SD	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	е	
Client ID:	BH-05 45'	Batch II): 34	772	· F	RunNo: 4	6867				
Prep Date:	11/2/2017	Analysis Date	e: 1 1	/3/2017	5	SeqNo: 1	495085	Units: mg/k	(g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	29	4.8	23.79	1.475	115	77.8	128	0.368	20	

Qualifiers:

Surr: BFB

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

99.8

15

316

J Analyte detected below quantitation limits

Page 10 of 11

0

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#:

1710F93

06-Nov-17

Client:

Williams Four Corners

Project:

Royce Canyon

Sample ID MB-34772	SampType: MBLK				TestCode: EPA Method 8021B: Volatiles					
Client ID: PBS	Batcl	h ID: 34	772	F	tunNo: 4	6867				
Prep Date: 11/2/2017	Analysis D	Date: 11	1/3/2017	S	SeqNo: 1	495117	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.3	80	120			

Sample ID LCS-34772	SampT	ype: LC	S	TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch	ID: 34	772	F	RunNo: 4	6867				7.4
Prep Date: 11/2/2017	Analysis D	ate: 11	/3/2017	8	SeqNo: 1	495118	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.83	0.10	1.000	0	83.2	70.1	121			
Benzene	0.92	0.025	1.000	0	91.8	77.3	128			
Toluene	0.92	0.050	1.000	0	92.1	79.2	125			
Ethylbenzene	0.91	0.050	1.000	0	91.3	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	92.4	81.6	129			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.4	80	120			

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- 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
- В Analyte detected in the associated Method Blank
- Value above quantitation range E
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Page 11 of 11



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 I	Vame:	WILLIAMS	FOUR CORN	Work Orde	r Number:	1710	F93			RcptNo	: 1
Receive	ed By:	Richie Eria	cho	10/31/2017 8	:15:00 AI	М		12	- <		
Comple	ted By:	Richie Eria	cho	10/31/2017 2	:32:46 PI	M		12	- <		
Reviewe	ed By:	DDS		11/2	117						
Chain	of Cus	tody									
1. Cus	tody seal	s intact on sar	nple bottles?			Yes		No		Not Present	
2. Is C	hain of C	ustody comple	ete?			Yes	V	No		Not Present	
3. How	was the	sample delive	red?			Cour	ier				
Log ir	1										
		npt made to co	ool the samples?			Yes	✓	, No		NA 🗆	
5. Wei	re all sam	ples received	at a temperature	of >0° C to 6.0°	С	Yes	✓	No		NA 🗆	
6. San	nple(s) in	proper contail	ner(s)?			Yes	V	No			
7. Suff	icient san	nple volume fo	r indicated test(s)?		Yes	V	No			
8. Are	samples	(except VOA a	and ONG) proper	ly preserved?		Yes	V	No		_	
9. Was	s preserva	ative added to	bottles?			Yes		No	Y	NA 🗆	
10.VO	A vials hav	ve zero headsį	pace?			Yes		No		No VOA Vials	
11. We	re any sar	mple containe	rs received broke	n?		Yes		No	V	# of preserved	
							_			bottles checked	
		ork match bott	le labels? in of custody)			Yes	\checkmark	No		for pH:	or >12 unless noted)
•			ified on Chain of	Custody?		Yes	V	No		Adjusted?	
			re requested?	•		Yes	V	No			
		ng times able				Yes	V	No		Checked by:	
(If n	o, notify c	ustomer for a	uthorization.)								
Sassia	l Hand	lina (if on	oliooblo)					,			
		ling (if app								NA ☑	
16. Was	s client no	tifled of all dis	crepancies with t	his order?		Yes		No		NA 🛂	7
		Notified:			Date:						
	By Who	i i		MANAGAN DAN KANTAN DIN SANTAN AND SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN SANTAN	Via:	eMa		Phone _	Fax	☐ In Person	
	Regard	1			Manager Manager	CATALON AND COMPANIES					
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17. Add	ditional rer	marks:									
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12/11		samples sub	mitted to Hall Er	vironmental may be sub	contracted	to other ac	ccredited laboratoric	es. This serves as notice of this	s poss	bility.	Any s	ıb-con	tracte	d data	will be	e clear	ly nota	ated or	the ar	natytica	report.		



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

November 27, 2017

Aaron Galer Williams Four Corners 188 CR 4900 Bloomfield, NM 87413 TEL: (505) 632-4442

FAX

RE: Royce Canyon

OrderNo.: 1711921

Dear Aaron Galer:

Hall Environmental Analysis Laboratory received 12 sample(s) on 11/17/2017 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 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-9 20'-22'

Project:

Royce Canyon

Collection Date: 11/15/2017 11:50:00 AM

Lab ID: 1711921-001

Matrix: SOIL

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS	5			Analy	st: TOM
Diesel Range Organics (DRO)	38	9.5	mg/Kg	1	11/20/2017 1:19:42 F	PM 35063
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/20/2017 1:19:42 F	PM 35063
Surr: DNOP	85.7	70-130	%Rec	1	11/20/2017 1:19:42 F	PM 35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Surr: BFB	109	15-316	%Rec	1	11/20/2017 12:24:50	PM 35054
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Benzene	ND	0.024	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Toluene	ND	0.048	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Ethylbenzene	ND	0.048	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Xylenes, Total	ND	0.096	mg/Kg	1	11/20/2017 12:24:50	PM 35054
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	11/20/2017 12:24:50	PM 35054

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

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-9 33'-35'

Project: Royce Canyon

Collection Date: 11/15/2017 1:00:00 PM

Lab ID: 1711921-002

Matrix: SOIL Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3		-	Analyst	том
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	11/20/2017 3:11:59 PM	35063
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	11/20/2017 3:11:59 PM	35063
Surr: DNOP	80.1	70-130	%Rec	1	11/20/2017 3:11:59 PM	35063
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Surr: BFB	102	15-316	%Rec	1	11/20/2017 1:36:00 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.093	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Benzene	0.084	0.023	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Toluene	0.45	0.046	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Ethylbenzene	ND	0.046	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Xylenes, Total	0.21	0.093	mg/Kg	1	11/20/2017 1:36:00 PM	35054
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	11/20/2017 1:36:00 PM	35054

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 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Royce Canyon

Lab ID: 1711921-003

Project:

Client Sample ID: BH-10 23'-25'

Collection Date: 11/15/2017 2:00:00 PM

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	NGE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	31	9.5	mg/Kg	1	11/20/2017 3:40:11 PM	35063
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	11/20/2017 3:40:11 PM	35063
Surr: DNOP	78.3	70-130	%Rec	1	11/20/2017 3:40:11 PM	35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Surr: BFB	102	15-316	%Rec	1	11/20/2017 2:47:28 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.098	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Benzene	0.048	0.024	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Toluene	0.30	0.049	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Ethylbenzene	ND	0.049	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Xylenes, Total	0.22	0.098	mg/Kg	1	11/20/2017 2:47:28 PM	35054
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	11/20/2017 2:47:28 PM	35054

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 3 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-10 28'-30'

Project: Royce Canyon

Collection Date: 11/15/2017 2:25:00 PM

Lab ID: 1711921-004

Matrix: SOIL

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS		No. 12.0		Analyst:	TOM
Diesel Range Organics (DRO)	26	9.3	mg/Kg	1	11/20/2017 4:07:57 PM	35063
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	11/20/2017 4:07:57 PM	35063
Surr: DNOP	81.9	70-130	%Rec	1	11/20/2017 4:07:57 PM	35063
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Surr: BFB	98.5	15-316	%Rec	1	11/20/2017 3:10:47 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.095	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Benzene	ND	0.024	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Toluene	ND	0.048	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Ethylbenzene	ND	0.048	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Xylenes, Total	ND	0.095	mg/Kg	1	11/20/2017 3:10:47 PM	35054
Surr: 4-Bromofluorobenzene	96.1	80-120	%Rec	1	11/20/2017 3:10:47 PM	35054

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 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Received Date: 11/17/2017 7:50:00 AM

Date Reported: 11/27/2017

11/20/2017 3:34:14 PM 35054

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners Client Sample ID: BH-11 38'-40'

Project: Royce Canyon Collection Date: 11/16/2017 10:00:00 AM

Matrix: SOIL

92.9

Analyses Result **PQL Qual Units DF** Date Analyzed Batch **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: TOM Diesel Range Organics (DRO) 9.7 mg/Kg 11/20/2017 4:36:12 PM 35063 Motor Oil Range Organics (MRO) ND 49 mg/Kg 11/20/2017 4:36:12 PM 35063 1 Surr: DNOP 74.3 11/20/2017 4:36:12 PM 35063 70-130 %Rec **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) 6.7 5.0 11/20/2017 3:34:14 PM 35054 mg/Kg Surr: BFB 108 15-316 %Rec 11/20/2017 3:34:14 PM 35054 **EPA METHOD 8021B: VOLATILES** Analyst: NSB Methyl tert-butyl ether (MTBE) ND 0.099 11/20/2017 3:34:14 PM 35054 mg/Kg Benzene ND 0.025 mg/Kg 11/20/2017 3:34:14 PM 35054 Toluene 0.057 0.050 mg/Kg 11/20/2017 3:34:14 PM 35054 Ethylbenzene ND 0.050 11/20/2017 3:34:14 PM 35054 mg/Kg Xylenes, Total 0.20 0.099 mg/Kg 11/20/2017 3:34:14 PM 35054

80-120

%Rec

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

Qualifiers:

Lab ID:

1711921-005

Surr: 4-Bromofluorobenzene

- 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 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Project:

Lab ID:

Royce Canyon

1711921-006

Client Sample ID: BH-11 48'-50'

Collection Date: 11/16/2017 10:30:00 AM

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	ТОМ
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	11/20/2017 5:04:05 PM	35063
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	11/20/2017 5:04:05 PM	35063
Surr: DNOP	72.2	70-130	%Rec	1	11/20/2017 5:04:05 PM	35063
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Surr: BFB	91.0	15-316	%Rec	1	11/20/2017 3:57:42 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.093	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Benzene	ND	0.023	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Toluene	ND	0.047	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Ethylbenzene	ND	0.047	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Xylenes, Total	ND	0.093	mg/Kg	1	11/20/2017 3:57:42 PM	35054
Surr: 4-Bromofluorobenzene	91.2	80-120	%Rec	1	11/20/2017 3:57:42 PM	35054

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 6 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners Client Sample ID: BH-12 23'-25'

 Project:
 Royce Canyon
 Collection Date: 11/16/2017 11:40:00 AM

 Lab ID:
 1711921-007
 Matrix: SOIL
 Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	15	9.3	mg/Kg	1	11/21/2017 6:24:20 PM	35063
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	11/21/2017 6:24:20 PM	35063
Surr: DNOP	84.9	70-130	%Rec	1	11/21/2017 6:24:20 PM	35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Surr: BFB	93.6	15-316	%Rec	1	11/20/2017 6:41:48 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Methyl tert-butyl ether (MTBE)	ND	0.095	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Benzene	ND	0.024	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Toluene	ND	0.048	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Ethylbenzene	ND	0.048	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Xylenes, Total	ND	0.095	mg/Kg	1	11/20/2017 6:41:48 PM	35054
Surr: 4-Bromofluorobenzene	91.2	80-120	%Rec	1	11/20/2017 6:41:48 PM	35054

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 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-12 28'-30'

Project:

Royce Canyon

Collection Date: 11/16/2017 12:00:00 PM

Lab ID: 1711921-008

Matrix: SOIL

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	THOD 8015M/D: DIESEL RANGE ORGANICS ange Organics (DRO) ND 9.7 mg/Kg 1 11/21/2017 6:46:19 PM 35: DNOP 82.5 70-130 %Rec 1 11/21/2017 6:46:19 PM 35: THOD 8015D: GASOLINE RANGE Range Organics (GRO) ND 4.8 mg/Kg 1 11/20/2017 7:05:04 PM 35: THOD 8021B: VOLATILES PRICE ND ND 0.096 mg/Kg 1 11/20/2017 7:05:04 PM 35: ND 0.048 mg/Kg 1 11/20/2017 7:05:04 PM		TOM			
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	11/21/2017 6:46:19 PM	35063
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/21/2017 6:46:19 PM	35063
Surr: DNOP	82.5	70-130	%Rec	1	11/21/2017 6:46:19 PM	35063
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Surr: BFB	92.3	15-316	%Rec	1	11/20/2017 7:05:04 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.096	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Benzene	ND	0.024	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Toluene	ND	0.048	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Ethylbenzene	ND	0.048	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Xylenes, Total	ND	0.096	mg/Kg	1	11/20/2017 7:05:04 PM	35054
Surr: 4-Bromofluorobenzene	89.3	80-120	%Rec	1	11/20/2017 7:05:04 PM	35054

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 8 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Project: Royce Canyon

Lab ID: 1711921-009

Client Sample ID: BH-13 23'-25'

Collection Date: 11/16/2017 1:20:00 PM

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS	3			Analyst	ТОМ
Diesel Range Organics (DRO)	21	9.3	mg/Kg	1	11/20/2017 6:27:00 PM	35063
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	11/20/2017 6:27:00 PM	35063
Surr: DNOP	73.9	70-130	%Rec	1	11/20/2017 6:27:00 PM	35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Surr: BFB	91.0	15-316	%Rec	1	11/20/2017 7:28:35 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.099	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Benzene	ND	0.025	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Toluene	ND	0.049	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Ethylbenzene	ND	0.049	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Xylenes, Total	ND	0.099	mg/Kg	1	11/20/2017 7:28:35 PM	35054
Surr: 4-Bromofluorobenzene	90.8	80-120	%Rec	1	11/20/2017 7:28:35 PM	35054

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 9 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-13 33'-35'

Project: Royce Canyon

Collection Date: 11/16/2017 1:40:00 PM

Lab ID: 1711921-010

Matrix: SOIL Received Date: 11/

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	1			Analyst	том
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	11/20/2017 6:54:31 PM	35063
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/20/2017 6:54:31 PM	35063
Surr: DNOP	71.7	70-130	%Rec	1	11/20/2017 6:54:31 PM	35063
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Surr: BFB	91.4	15-316	%Rec	1	11/20/2017 7:51:53 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.096	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Benzene	0.031	0.024	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Toluene	0.24	0.048	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Ethylbenzene	ND	0.048	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Xylenes, Total	0.47	0.096	mg/Kg	1	11/20/2017 7:51:53 PM	35054
Surr: 4-Bromofluorobenzene	89.4	80-120	%Rec	1	11/20/2017 7:51:53 PM	35054

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 10 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-14 8'-10'

Project: Royce Canyon

Collection Date: 11/16/2017 2:30:00 PM

Lab ID: 1711921-011

Matrix: SOIL

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS	3		k:	Anal	st: TOM
Diesel Range Organics (DRO)	120	9.6	mg/Kg	1	11/20/2017 7:22:01 [PM 35063
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/20/2017 7:22:01	PM 35063
Surr: DNOP	78.6	70-130	%Rec	1	11/20/2017 7:22:01	PM 35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	810	49	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Surr: BFB	480	15-316	S %Rec	10	11/20/2017 10:50:23	AM 35054
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Methyl tert-butyl ether (MTBE)	ND	0.98	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Benzene	ND	0.25	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Toluene	2.3	0.49	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Ethylbenzene	ND	0.49	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Xylenes, Total	28	0.98	mg/Kg	10	11/20/2017 10:50:23	AM 35054
Surr: 4-Bromofluorobenzene	117	80-120	%Rec	10	11/20/2017 10:50:23	AM 35054

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
- 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 11 of 16
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1711921

Date Reported: 11/27/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: BH-14 28'-30'

Project: Royce Canyon

Collection Date: 11/16/2017 3:00:00 PM

Lab ID: 1711921-012

Matrix: SOIL

Received Date: 11/17/2017 7:50:00 AM

Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS			Fr. A.	Analyst:	том
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/20/2017 7:49:40 PM	35063
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	11/20/2017 7:49:40 PM	35063
Surr: DNOP	79.0	70-130	%Rec	1	11/20/2017 7:49:40 PM	35063
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	46	4.9	mg/Kg	1	11/20/2017 8:15:14 PM	35054
Surr: BFB	112	15-316	%Rec	1	11/20/2017 8:15:14 PM	35054
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.099	mg/Kg	1	11/20/2017 8:15:14 PM	35054
Benzene	0.93	0.025	mg/Kg	1	11/20/2017 8:15:14 PM	35054
Toluene	6.0	0.49	mg/Kg	10	11/21/2017 11:01:29 AM	1 35054
Ethylbenzene	0.23	0.049	mg/Kg	1	11/20/2017 8:15:14 PM	35054
Xylenes, Total	6.3	0.099	mg/Kg	1	11/20/2017 8:15:14 PM	35054
Surr: 4-Bromofluorobenzene	95.4	80-120	%Rec	1	11/20/2017 8:15:14 PM	35054

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 12 of 16
- 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#:

1711921

27-Nov-17

Client:

Williams Four Corners

Davisa Convon

Project:	Royce Ca	anyon									
Sample ID LO	CS-35063	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	A Comment
Client ID: LO	css	Batch	ID: 35	063	F	RunNo: 4	7227				
Prep Date: 1	11/18/2017	Analysis D	ate: 11	1/20/2017	8	SeqNo: 1	506597	Units: mg/l	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Orga	anics (DRO)	43	10	50.00	0	86.4	73.2	114			
Surr: DNOP		4.3		5.000		86.7	70	130			
Sample ID M	B-35063	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PI	BS	Batch	ID: 35	063	F	RunNo: 4	7227				
Prep Date: 1	11/18/2017	Analysis D	ate: 11	1/20/2017	S	SeqNo: 1	506598	Units: mg/l	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Orga	anics (DRO)	ND	10								
Notor Oil Range C	Organics (MRO)	ND	50								
Surr: DNOP		8.3		10.00		83.3	70	130	L. L. L.	£ 35 . 1	1 4 6 5
Sample ID 17	711921-001AMS	SampT	ype: MS	3	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: BI	H-9 20'-22'	Batch	ID: 35	063	F	RunNo: 4	7227				
Prep Date: 1	11/18/2017	Analysis D	ate: 11	/20/2017	S	SeqNo: 1	506625	Units: mg/h	〈 g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Orga	anics (DRO)	83	9.5	47.30	37.57	96.8	55.8	125			
Surr: DNOP		4.3		4.730		91.0	70	130		1 1	
Sample ID 17	711921-001AMS	D SampT	ype: MS	SD	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	76 1 10
Client ID: BI	H-9 20'-22'	Batch	ID: 35	063	R	RunNo: 4	7227				
Prep Date: 1	11/18/2017	Analysis D	ate: 11	/20/2017	S	SeqNo: 1	506626	Units: mg/h	⟨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Orga	anics (DRO)	91	9.2	46.04	37.57	116	55.8	125	8.75	20	
Surr: DNOP		4.3		4.604		93.2	70	130	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

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 В

Value above quantitation range

Analyte detected below quantitation limits

Page 13 of 16

P Sample pH Not In Range

Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1711921

27-Nov-17

Client:

Williams Four Corners

Project: Royce (Canyon			
Sample ID MB-35054	SampType: MBLK	TestCode: EPA Method	8015D: Gasoline Rang	е
Client ID: PBS	Batch ID: 35054	RunNo: 47231		
Prep Date: 11/17/2017	Analysis Date: 11/20/2017	SeqNo: 1506894	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 1000 1000	99.6 15	316	
Sample ID LCS-35054	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Range	е
Client ID: LCSS	Batch ID: 35054	RunNo: 47231		
Prep Date: 11/17/2017	Analysis Date: 11/20/2017	SeqNo: 1506898	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO)	26 5.0 25.00	0 106 75.9	131	
Surr: BFB	1200 1000	117 15	316	
Sample ID 1711921-001AM	S SampType: MS	TestCode: EPA Method	8015D: Gasoline Range	9
Client ID: BH-9 20'-22'	Batch ID: 35054	RunNo: 47231		
Prep Date: 11/17/2017	Analysis Date: 11/20/2017	SeqNo: 1506929	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO)	26 4.9 24.27	0 107 77.8	128	
Surr: BFB	1200 970.9	119 15	316	
Sample ID 1711921-001AMS	SD SampType: MSD	TestCode: EPA Method	8015D: Gasoline Range	Э
Client ID: BH-9 20'-22'	Batch ID: 35054	RunNo: 47231		
Prep Date: 11/17/2017	Analysis Date: 11/20/2017	SeqNo: 1506935	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO)	25 4.9 24.49	0 102 77.8	128 3.26	20
Surr: BFB	1200 979.4	118 15	316 0	0

Qualifiers:

- 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
- Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Analyte detected in the associated Method Blank

Page 14 of 16

Hall Environmental Analysis Laboratory, Inc.

WO#:

1711921

27-Nov-17

Client:

Williams Four Corners

Project:

Royce Canyon

Project:	Royce C	allyon									
Sample ID	MB-35054	Samp	Туре: МІ	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles	S S ME	317
Client ID:	PBS	Bato	h ID: 35	054	1	RunNo: 4	7231				
Prep Date:	11/17/2017	Analysis [Date: 1	1/20/2017	- 3	SeqNo: 1	506973	Units: mg/h	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-but	yl ether (MTBE)	ND	0.10								
Benzene		ND	0.025								
Toluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, Total		ND	0.10								
Surr: 4-Bron	nofluorobenzene	0.99		1.000		99.2	80	120		-	
Sample ID	LCS-35054	Samp	Type: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID:	LCSS	Batc	h ID: 35	054	F	RunNo: 4	7231				
Prep Date:	11/17/2017	Analysis [Date: 1	1/20/2017		SeqNo: 1	506974	Units: mg/k	(g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-but	yl ether (MTBE)	0.90	0.10	1.000	0	90.1	70.1	121			
Benzene		0.97	0.025	1.000	0	97.1	77.3	128			
Toluene		0.96	0.050	1.000	0	95.6	79.2	125			
Ethylbenzene		0.96	0.050	1.000	0	95.7	80.7	127			
Xylenes, Total		2.9	0.10	3.000	0	96.2	81.6	129			
Surr: 4-Bron	nofluorobenzene	1.0		1.000		101	80	120			
Sample ID	1711921-002AMS	Samp ⁷	Гуре: М	3	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	BH-9 33'-35'	Batc	h ID: 35	054	F	RunNo: 4	7231				
Prep Date:	11/17/2017	Analysis [Date: 11	1/20/2017	5	SeqNo: 1	506981	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-but	yl ether (MTBE)	0.88	0.094	0.9416	0	93.4	72.5	138			
Benzene		1.0	0.024	0.9416	0.08440	96.7	80.9	132			
Γoluene		1.5	0.047	0.9416	0.4510	113	79.8	136			
Ethylbenzene		0.92	0.047	0.9416	0.02033	95.7	79.4	140			
Xylenes, Total		3.0	0.094	2.825	0.2149	100	78.5	142			
Surr: 4-Bron	nofluorobenzene	0.98		0.9416		104	80	120			
Sample ID	1711921-002AMS	D Samp1	Гуре: М S	SD	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID:	BH-9 33'-35'	Batcl	h ID: 35	054	F	RunNo: 4	7231				
Prep Date:	11/17/2017	Analysis D	Date: 11	/20/2017	\$	SeqNo: 1	506982	Units: mg/K	(g		
Analyte	3	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	vl ether (MTBE)	0.92	0.099	0.9872	0	93.7	72.5	138	5.04	20	
Benzene		1.0	0.025	0.9872	0.08440	96.6	80.9	132	4.24	20	

Qualifiers:

Ethylbenzene

Toluene

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

1.6

0.95

0.049

0.049

0.9872

0.9872

0.4510

0.02033

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

79.8

79.4

136

140

3.93

3.47

E Value above quantitation range

114

94.6

J Analyte detected below quantitation limits

Page 15 of 16

20

20

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#:

1711921

27-Nov-17

Client:

Williams Four Corners

Project:

Royce Canyon

Sample ID	1711921-002AMSD	SampTy	e: MS	SD	Test	tCode: E	PA Method	8021B: Vola	tiles		w1
Client ID:	BH-9 33'-35'	Batch I	D: 35	054	R	RunNo: 4	7231				
Prep Date:	11/17/2017	Analysis Da	e: 11	1/20/2017	S	SeqNo: 1	506982	Units: mg/h	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total		3.2	0.099	2.962	0.2149	99.2	78.5	142	3.35	20	
Surr: 4-Bromo	ofluorobenzene	1.0		0.9872		106	80	120	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 16 of 16



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:	WILLIAMS FOUR CORN	Work Order Numbe	r: 1711921		RcptNo	: 1
Received By:	Erin Melendrez	11/17/2017 7:50:00 A	М	une	-	
Completed By: Reviewed By:	Michelle Garcia ENM	11/17/2017 9:36:23 A	M	Mirel Go	nia)	
Chain of Cus	stody					
1. Custody sea	als intact on sample bottles?		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 sample	\$?	Yes 🗹	No 🗀	NA 🗆	
5. Were all sar	mples received at a temperatu	re of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗆	
6. Sample(s) i	n proper container(s)?		Yes 🗸	No 🗆		
7. Sufficient sa	imple volume for indicated test	(s)?	Yes 🗹	No 🗆		
8. Are samples	(except VOA and ONG) prop	erly preserved?	Yes 🗸	No 🗌		
9. Was present	vative added to bottles?		Yes	No 🗹	NA 🗆	
10. VOA vials ha	ave zero headspace?		Yes	No 🗆	No VOA Vials	
11. Were any sa	ample containers received bro	ken?	Yes 🗀	No 🗹	# of preserved	
4.4	work match bottle labels?		Yes 🗸	No 🗆	bottles checked for pH:	
	pancies on chain of custody)	. C	Yes 🗸	No 🗆	Adjusted?	or >12 unless noted)
	s correctly identified on Chain on a carrectly identified on Chain on the carrect of the correct	or Custody?	Yes ✓ Yes ✓	No \square		
15. Were all hole	ding times able to be met? customer for authorization.)		Yes 🗹	No 🗆	Checked by:	
Special Hand	lling (if applicable)					
7.3	otified of all discrepancies with	this order?	Yes 🗌	No 🗆	NA 🗹	
Persor	Notified:	Date	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA			
By Wh	om:	Via:	eMail	Phone Fax	☐ In Person	
Regard	Charles State Company State Co	The second secon	and the second s			
Client	Instructions:					_
17. Additional re	emarks:					
18. Cooler Info		Seal Intact Seal No	Seal Date	Signed By		
1	4.1 Good Ye		Ocal Date	Signed by		
				1		

C	hain-	of-Cu	stody Record	Turn-Around	Time:				2				gen		P 707 67			-			
Client:	Will;	ams	Four corners	☑ Standard				965										ME RA			
An	100	Galen	_	Project Name					75					iron				1 -0.2			
Mailing	Address	295	Chifeta Way	Royce	Canyon			490	1 Ha								м 87	1100			
5011	- 1-05	e rit	y, Ut	Project #:						5-34											
Phone #	#: 501	- 584	-6746	034	017013			Tel	. 500	3-34	3-39	-	-	sis/	-	-	4107			25.5	
			garage Williams. Com	Project Mana	iger:			2	<u>©</u>									100000000			
QA/QC F				Will	liams Aa	ron Galer	021	SOL	M.			~		S	B,						190
⊡≺Stan	dard		☐ Level 4 (Full Validation)	LTE	: Danny	Burni	s (B	(Ga	8			SIMS)		Q.	PC						
Accredi				Sampler: E	ric care	1011	TMB's (8021)	TPH (Gas only)		=	=	8270 8		Š	3082						3
O NEL		□ Othe	er	On loe:	Yes	□ No	+	+	8	418	504	or 82	ro.	ő	8/8		(A)				0
EDD	(Type)_	PDF		Sample Tem	perature:5,2	-1.1(CF)=4.1	MTBE	MTBE	9	po	pa	100	8 Metals	Z O	cide	(A))K				5
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	+	₩ + X	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	(Method 504.1)	PAH's (8310	RA 8 M	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SC ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
				Type and #	1,160	1711921	BTEX	BTEX	핕	표	EDB	PAH	RCRA 8	Anio	808	326(8270				A B
1-15-17	11:50	50.1	BH-9 20'-22'	1 402	Cool	001	X		×												
	13:00	1	BH-9 33'- 35'	1	1	002	×		X												
	14:00		BH-10 73'-25'			003	X		X												
<u> </u>	14:25		BH-10 28'-30'			004	×		X						-	128					
11-16-17	10:00		BH-11 38'-40'			005	2		×												
	10:30		BH-11 48'-50'			Cole	×		X												
	11:40		BH-12 23'-25'			207	X		X												
	12:00		BH-12 28'-30'			008	y		×												
	13:20		BH-13 23-25'			009	×		×												
	13:40		BH-13 33-35'			OID	y		X												
	14:30		BH-14 8'-10'			011	×		×												
	15:00	Ā	BH-14 28'-36'	<u> </u>	*	013	×		Y												
Date: 11-16-17	Time: 16:30	Relincuish	ed by.	Received by	alt	Date Time	Rem	narks	Ple	a 50	C	i t	to:					TEn			
Date:	Time:	Relinquish		Received by	1	Date Time 0750								dt	OUN	158	PLT	env	. 00	'sm	
A INT.	(110	1 41		17/10		11/1 (/) /															

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

4 15 3



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

Website: www.hallenvironmental.com

December 08, 2017

Danny Burns Williams Four Corners 188 CR 4900 Bloomfield, NM 87413

TEL: (505) 632-4442

FAX

RE: Royce Canyon

OrderNo.: 1712358

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/7/2017 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 1712358

Date Reported: 12/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: NWW-01

Project: Royce Canyon Collection Date: 12/6/2017 2:15:00 PM

Lab ID: 1712358-001

Matrix: SOIL

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

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analyst	: том
Diesel Range Organics (DRO)	110	9.5	mg/Kg	1	12/7/2017 8:58:14 AM	35371
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/7/2017 8:58:14 AM	35371
Surr: DNOP	103	70-130	%Rec	1	12/7/2017 8:58:14 AM	35371
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	1600	100	mg/Kg	20	12/7/2017 9:40:43 AM	G47604
Surr: BFB	220	15-316	%Rec	20	12/7/2017 9:40:43 AM	G47604
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	1.3	0.51	mg/Kg	20	12/7/2017 9:40:43 AM	B47604
Toluene	24	1.0	mg/Kg	20	12/7/2017 9:40:43 AM	B47604
Ethylbenzene	3.9	1.0	mg/Kg	20	12/7/2017 9:40:43 AM	B47604
Xylenes, Total	51	2.0	mg/Kg	20	12/7/2017 9:40:43 AM	B47604
Surr: 4-Bromofluorobenzene	119	80-120	%Rec	20	12/7/2017 9:40:43 AM	B47604

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
- 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 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: NEW-01

Project: Royce Canyon

Collection Date: 12/6/2017 2:17:00 PM

Lab ID: 1712358-002

Matrix: SOIL

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

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	3			Analysi	: TOM
Diesel Range Organics (DRO)	28	9.1	mg/Kg	1	12/7/2017 9:22:31 AM	35371
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/7/2017 9:22:31 AM	35371
Surr: DNOP	102	70-130	%Rec	1	12/7/2017 9:22:31 AM	35371
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	44	21	mg/Kg	5	12/7/2017 10:04:27 AM	G47604
Surr: BFB	161	15-316	%Rec	5	12/7/2017 10:04:27 AM	G47604
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.10	mg/Kg	5	12/7/2017 10:04:27 AM	B47604
Toluene	ND	0.21	mg/Kg	5	12/7/2017 10:04:27 AM	B47604
Ethylbenzene	ND	0.21	mg/Kg	5	12/7/2017 10:04:27 AM	B47604
Xylenes, Total	1.5	0.41	mg/Kg	5	12/7/2017 10:04:27 AM	B47604
Surr: 4-Bromofluorobenzene	113	80-120	%Rec	5	12/7/2017 10:04:27 AM	B47604

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 1712358

Date Reported: 12/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Client Sample ID: SEW-01

Project:

Royce Canyon

Collection Date: 12/6/2017 2:19:00 PM

Lab ID: 1

1712358-003

Matrix: SOIL

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

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst	TOM
Diesel Range Organics (DRO)	220	9.8	mg/Kg	1	12/7/2017 9:46:54 AM	35371
Motor Oil Range Organics (MRO)	59	49	mg/Kg	1	12/7/2017 9:46:54 AM	35371
Surr: DNOP	102	70-130	%Rec	1	12/7/2017 9:46:54 AM	35371
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	1200	77	mg/Kg	10	12/7/2017 10:28:10 AM	G47604
Surr: BFB	258	15-316	%Rec	10	12/7/2017 10:28:10 AM	G47604
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	1.3	0.39	mg/Kg	10	12/7/2017 10:28:10 AM	B47604
Toluene	17	0.77	mg/Kg	10	12/7/2017 10:28:10 AM	B47604
Ethylbenzene	2.6	0.77	mg/Kg	10	12/7/2017 10:28:10 AM	B47604
Xylenes, Total	36	1.5	mg/Kg	10	12/7/2017 10:28:10 AM	B47604
Surr: 4-Bromofluorobenzene	119	80-120	%Rec	10	12/7/2017 10:28:10 AM	B47604

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 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1712358

Date Reported: 12/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Project: Royce Canyon

Lab ID: 1712358-004

Client Sample ID: SWW-01

Collection Date: 12/6/2017 2:21:00 PM

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

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3				Analys	: TOM
Diesel Range Organics (DRO)	160	10		mg/Kg	1	12/7/2017 10:11:24 AM	35371
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	12/7/2017 10:11:24 AM	35371
Surr: DNOP	102	70-130		%Rec	1	12/7/2017 10:11:24 AM	35371
EPA METHOD 8015D: GASOLINE RAM	IGE					Analys	: NSB
Gasoline Range Organics (GRO)	3100	43		mg/Kg	10	12/7/2017 10:51:58 AM	G47604
Surr: BFB	412	15-316	S	%Rec	10	12/7/2017 10:51:58 AM	G4760
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	8.1	0.22		mg/Kg	10	12/7/2017 10:51:58 AM	B47604
Toluene	61	4.3		mg/Kg	100	12/7/2017 12:03:23 PM	B47604
Ethylbenzene	5.4	0.43		mg/Kg	10	12/7/2017 10:51:58 AM	B47604
Xylenes, Total	72	0.87		mg/Kg	10	12/7/2017 10:51:58 AM	B47604
Surr: 4-Bromofluorobenzene	133	80-120	S	%Rec	10	12/7/2017 10:51:58 AM	B47604

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 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
 - W Sample container temperature is out of limit as specified

Lab Order 1712358

Date Reported: 12/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Corners Client Sample ID: FS-01

Project: Royce Canyon **Lab ID:** 1712358-005

Collection Date: 12/6/2017 2:23:00 PM

Matrix: SOIL Received Date: 12/7/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3		1	Analyst	: TOM
Diesel Range Organics (DRO)	75	9.8	mg/Kg	1	12/7/2017 10:35:43 AM	35371
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/7/2017 10:35:43 AM	35371
Surr: DNOP	105	70-130	%Rec	1	12/7/2017 10:35:43 AM	35371
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	300	40	mg/Kg	10	12/7/2017 11:15:48 AM	G47604
Surr: BFB	195	15-316	%Rec	10	12/7/2017 11:15:48 AM	G47604
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	0.25	0.20	mg/Kg	10	12/7/2017 11:15:48 AM	B47604
Toluene	4.0	0.40	mg/Kg	10	12/7/2017 11:15:48 AM	B47604
Ethylbenzene	0.67	0.40	mg/Kg	10	12/7/2017 11:15:48 AM	B47604
Xylenes, Total	9.5	0.80	mg/Kg	10	12/7/2017 11:15:48 AM	B47604
Surr: 4-Bromofluorobenzene	119	80-120	%Rec	10	12/7/2017 11:15:48 AM	B47604

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 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1712358

Date Reported: 12/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Four Corners

Project:

Lab ID:

Royce Canyon

1712358-006 Matrix: SOIL Client Sample ID: SP-01

Collection Date: 12/6/2017 2:25:00 PM

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

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	19	9.4	mg/Kg	1	12/7/2017 11:00:09 AM	35371
Motor Oil Range Organics (MRO)	49	47	mg/Kg	1	12/7/2017 11:00:09 AM	35371
Surr: DNOP	105	70-130	%Rec	1	12/7/2017 11:00:09 AM	35371
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	21	mg/Kg	5	12/7/2017 11:39:34 AM	G47604
Surr: BFB	116	15-316	%Rec	5	12/7/2017 11:39:34 AM	G47604
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.10	mg/Kg	5	12/7/2017 11:39:34 AM	B47604
Toluene	ND	0.21	mg/Kg	5	12/7/2017 11:39:34 AM	B47604
Ethylbenzene	ND	0.21	mg/Kg	5	12/7/2017 11:39:34 AM	B47604
Xylenes, Total	ND	0.41	mg/Kg	5	12/7/2017 11:39:34 AM	B47604
Surr: 4-Bromofluorobenzene	108	80-120	%Rec	5	12/7/2017 11:39:34 AM	B47604

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
- E Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 9 J
- P Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1712358

08-Dec-17

Client:

Williams Four Corners

Project: Royce	Canyon	
Sample ID LCS-35273 Client ID: LCSS Prep Date: 12/1/2017	SampType: LCS Batch ID: 35273 Analysis Date: 12/5/2017	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 47491 SeqNo: 1517262 Units: %Rec
Analyte Surr: DNOP	Result PQL SPK value S 4.2 5.000	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 84.5 70 130
Sample ID MB-35273 Client ID: PBS Prep Date: 12/1/2017	SampType: MBLK Batch ID: 35273 Analysis Date: 12/5/2017	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 47491 SegNo: 1517264 Units: %Rec
Analyte Surr: DNOP	•	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 93.9 70 130
Sample ID LCS-35371 Client ID: LCSS Prep Date: 12/7/2017	SampType: LCS Batch ID: 35371 Analysis Date: 12/7/2017	TestCode: EPA Method 8015M/D; Diesel Range Organics RunNo: 47491 SeqNo: 1520257 Units: mg/Kg
Analyte Diesel Range Organics (DRO) Surr: DNOP	Result PQL SPK value S 42 10 50.00 3.8 5.000	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 0 83.5 73.2 114 75.9 70 130
Sample ID MB-35371 Client ID: PBS Prep Date: 12/7/2017	SampType: MBLK Batch ID: 35371 Analysis Date: 12/7/2017	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 47491 SeqNo: 1520259 Units: mg/Kg
Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP	Result PQL SPK value S ND 10 ND 50 9.4 10.00	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 93.9 70 130
Sample ID LCS-35365 Client ID: LCSS Prep Date: 12/6/2017	SampType: LCS Batch ID: 35365 Analysis Date: 12/7/2017	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 47518 SeqNo: 1520345 Units: %Rec
Analyte Surr: DNOP	Result PQL SPK value SI 4.5 5.000	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 89.3 70 130
Sample ID MB-35365 Client ID: PBS Prep Date: 12/6/2017	SampType: MBLK Batch ID: 35365 Analysis Date: 12/7/2017	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 47518 SeqNo: 1520346 Units: %Rec
Analyte Surr: DNOP	Result PQL SPK value SI 9.8 10.00	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual 98.2 70 130

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

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 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#:

1712358

08-Dec-17

Client:

Williams Four Corners

Project:

Royce Canyon

Sample ID RB

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

Batch ID: G47604

RunNo: 47604

%REC

15

LowLimit

LowLimit

LowLimit

77.8

15

Units: mg/Kg

Analyte

Prep Date:

Result

Analysis Date: 12/7/2017 PQL SPK value SPK Ref Val

5.0

SeqNo: 1521463

RPDLimit Qual

Gasoline Range Organics (GRO)

ND 1100

1000

SPK value SPK Ref Val

SPK value SPK Ref Val

508.6

20350

115

316

HighLimit

Surr: BFB

Sample ID 2.5UG GRO LCS

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

%RPD

Client ID:

LCSS

Batch ID: **G47604**

PQL

RunNo: 47604

Prep Date:

Analyte

Analysis Date: 12/7/2017

Result

SeqNo: 1521464

Units: mg/Kg HighLimit

Qual

Gasoline Range Organics (GRO) Surr: BFB

24 1200 5.0 25.00 1000

%REC 97.7

75.9 131 316 %RPD **RPDLimit**

Sample ID 1712358-001AMS

SampType: MS

TestCode: EPA Method 8015D: Gasoline Range

%REC

73.1

221

HighLimit

Client ID:

NWW-01

Batch ID: G47604

1647

RunNo: 47604 SeqNo: 1521465

Units: mg/Kg

128

316

%RPD

RPDLimit Qual

S

S

Analyte Gasoline Range Organics (GRO) Surr: BFB

Prep Date:

Result 2000 45000

100

PQL

PQL

Analysis Date: 12/7/2017

TestCode: EPA Method 8015D: Gasoline Range

Sample ID 1712358-001AMSD Client ID:

SampType: MSD

Batch ID: G47604

RunNo: 47604

Prep Date: Analyte

NWW-01

Analysis Date: 12/7/2017

SeqNo: 1521466

Units: mg/Kg

HighLimit

%RPD **RPDLimit**

Qual 20

Gasoline Range Organics (GRO) Surr: BFB

2000

Result

SPK value 508.6

%REC 66.7

LowLimit 77.8

128 316

1.63

0

45000

100 20350

1647

SPK Ref Val

223

15

0

Page 8 of 9

PQL

Qualifiers: Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Practical Quanitative Limit

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

F Value above quantitation range

J Analyte detected below quantitation limits

RL Reporting Detection Limit

Sample pH Not In Range

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1712358

08-Dec-17

Client:

Williams Four Corners

Project:

Royce Canyon

Sample ID RB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	1D: B4	7604	F	RunNo: 4	7604				
Prep Date:	Analysis D	ate: 12	2/7/2017		SeqNo: 1	521495	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	1.1		1.000		109	80	120			

Sample ID 100NG BTEX LO	Samp1	Type: LC	s	Tes	PA Method	8021B: Vola	tiles			
Client ID: LCSS	Batcl	h ID: B4	7604	F	RunNo: 4	7604				
Prep Date:	Analysis D	Date: 12	2/7/2017	8	SeqNo: 1	521496	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.5	77.3	128			-
Toluene	0.96	0.050	1.000	0	96.2	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	95.1	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID 1712358-002AM	Samp	Type: MS	3							
Client ID: NEW-01	Batc	h ID: B4	7604	F	RunNo: 4	7604				
Prep Date:	Analysis [Date: 12	2/7/2017	8	SeqNo: 1	521497	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.1	0.10	4.139	0	99.5	80.9	132			
Toluene	4.2	0.21	4.139	0	101	79.8	136			
Ethylbenzene	4.2	0.21	4.139	0	101	79.4	140			
Xylenes, Total	14	0.41	12.42	1.480	98.6	78.5	142			
Surr: 4-Bromofluorobenzene	4.7		4.139		114	80	120			

Sample ID 1712358-002AM	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8021B: Vola	tiles			
Client ID: NEW-01	Batch	Batch ID: B47604 RunNo: 47604									
Prep Date: Analysis Date: 12/7/2017 SeqNo: 1521498 Units: mg/Kg											
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	4.3	0.10	4.139	0	105	80.9	132	5.21	20		
Toluene	4.5	0.21	4.139	0	109	79.8	136	7.06	20		
Ethylbenzene	4.3	0.21	4.139	0	104	79.4	140	2.88	20		
Xylenes, Total	14	0.41	12.42	1.480	102	78.5	142	3.14	20		
Surr: 4-Bromofluorobenzene	4.8		4.139		116	80	120	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 9 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 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:	WILLIAMS FOUR CORN	Work Order Number:	1712358		RcptNo:	1
Received By:	Anne Thorne	12/7/2017 7:00:00 AM		Our. H.		
Completed By:	Anne Thorne	12/7/2017 7:15:20 AM		Anne Stran		
Reviewed By:	DD5	12/7/17		anne Som		
Neviewed by.	12100	(0) 1111				
Chain of Cus	tody					
1. Custody sea	als intact on sample bottles?		Yes	No 🗆	Not Present	
2. Is Chain of C	Custody complete?		Yes 🗸	No 🗌	Not Present	
3. How was the	e sample delivered?		Courier			
Log In						
4. Was an atte	empt made to cool the sample	s?	Yes 🗹	No 🗌	NA 🗌	
5. Were all san	nples received at a temperatu	re 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 indicated tes	t(s)?	Yes 🗸	No 🗆		
8. Are samples	(except VOA and ONG) prop	erly preserved?	Yes 🗸	No 🗌		
9. Was preserv	rative added to bottles?		Yes	No 🗹	NA 🗆	
10.VOA vials ha	ave zero headspace?		Yes	No 🗔	No VOA Vials	
11. Were any sa	ample containers received bro	ken?	Yes	No 🗸	# of preserved	
12		w	v [4]	No 🗆	bottles checked	
	work match bottle labels? pancies on chain of custody)		Yes 🗸	No 🗀	for pH: (<2 or	>12 unless noted)
The state of the s	correctly identified on Chain	of Custody?	Yes 🗹	No 🗌	Adjusted?	
14. Is it clear wh	at analyses were requested?		Yes 🗸	No 🗆		
	ding times able to be met?		Yes 🗹	No 🗌	Checked by:	
(If no, notify	customer for authorization.)			5. 8		
Special Hand	ling (if applicable)					
16. Was client no	otified of all discrepancies with	this order?	Yes 🗌	No 🗆	NA 🗹	
Person	Notified:	Date	CLECKO KO KO KO KO KO KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA KARANDA K	had had delad And as facility about a resource and a re-		
By Who	om:	Via:	eMail	Phone Fax	In Person	
Regard	SAME TO STATE OF THE STATE OF T					
Client I	nstructions:					
17. Additional re	marks:					
18. Cooler Infor	1 1	T				
Cooler No	Temp °C Condition S 1.3 Good Yo		eal Date	Signed By		
L	,1.0 Good 110		- w	**************************************		

C	hain-	of-Cu	stody Record	Turn-Around	Time:										_				
Client:			Four Corners	☐ Standard	Rush	girme day			_								1EN RAT		
-	/1	ROOM	Goler	Project Nam	ie:	7					w.ha							0	
Mailing	Address:	295	Occasio Way	Ko	va C	anyon		490	1 Ha	wkins							100		
		SIL	Utah 84108	Project #:	71101701					-345-						4107			
Phone #	: QC	1-58	4-6746	Lices	3401701 2 6/11 Will			101	. 000	010	-		_	-	uest			33 3	
email or	Fax#:	5000	n a derevillians, con	Project Man	ager:		_	(ylu	(Q)		7		(4)						
QA/QC F				(Parny	Barns	3021	IS OF	MF	-	S)		, SC	PCB's					
□ Stand			☐ Level 4 (Full Validation)				s) (s)	(5)	8		SIMS)		9,						
Accredit ☐ NELA		□ Otho		Sampler:	Josh Ada	ams	TMS (8021)	TPH		5 5			N.	808					1 2
□ EDD		Li Otile	r	On Icey Sample Ten	iperatures (A)	TINO.	+	BTEX + MTBE + TPH (Gas only)	TPH 8015B(GRO / DRO / MRG	TPH (Method 418.1) FDB (Method 504.1)	or 8	SIS	Anions (F, CI, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082		8270 (Semi-VOA)			V or NI
	(1900)_			12/07/17 AT	-		BTEX + NYBE	MTB	5BC	thoc thoc	PAH's (8310 or	RCRA 8 Metals	Ω,	sticic	8260B (VOA)	mi-			Air Ruhhlas /V
Date	Time	Matrix	Sample Request ID	Container	Preservative	HEAL NO. 10	+	+ ×	801	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	s (8	A 8	l) Su	Pe	B	(Se			다.
				Type and #		17/2358	31	3TE	됩		AH	3CR	Anio	3081	3260	3270			Yir B
2-6-17	1415	Soil	NWW-01	(1) 402	(50)	-701	X		X		1	-	_	-	- W				
	1417		NEW-01			-02	X		X			8						=	
	1419		SEW-01			703	X		X										
	1421		SWW-01			704	X			\top	1								
	1423		FS-41			25	×		X	1.	\top							\top	
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Date:	Time:	Relinquish	ed by:	Received by:	.) /	Date Time	_				Dar	1156	219	en	7 1	17		16	
2/6/17	1940	m	x Wells		mi 1	0700		II	_	_	BI	LL	- 1	w)	11	<u>ل</u> ما	A/V	1)	B
ì	necessary.	samples sub	mitted to Hall Environmental may be sub-	contracted to other	accredited laborator	ies. This serves as notice of thi	s possi	DIIITY. P	any sub	-contrac	ed data	WIII D	e clear	ly nota	ated or	ine an	lalytical I	epon.	



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

Website: www.hallenvironmental.com

January 02, 2018

Kijun Hong Williams Field Services 188 Co. Rd 4900 Bloomfield, NM 87413 TEL: FAX

RE: TRK S Royce Canyon

OrderNo.: 1712E88

Dear Kijun Hong:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/28/2017 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

Only

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1712E88

Date Reported: 1/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services

Project: TRK S Royce Canyon

Lab ID: 1712E88-001

Matrix: SOIL

Client Sample ID: North West Wall Composite

Collection Date: 12/27/2017 1:20:00 PM

Received Date: 12/28/2017 7:10:00 AM

Analyses	Result	PQL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	99	30	mg/Kg	20	12/28/2017 10:57:34 /	AM 35754
EPA METHOD 8015D MOD: GASOLINE	RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	730	95	mg/Kg	20	12/28/2017 10:07:42	M G48062
Surr: BFB	98.8	70-130	%Rec	20	12/28/2017 10:07:42	M G48062
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	;			Analys	t: TOM
Diesel Range Organics (DRO)	47	10	mg/Kg	. 1	12/28/2017 10:32:11 A	M 35750
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	12/28/2017 10:32:11 A	M 35750
Surr: DNOP	89.2	70-130	%Rec	1	12/28/2017 10:32:11 A	M 35750
EPA METHOD 8260B: VOLATILES SHO	ORT LIST				Analys	t: AG
Benzene	0.76	0.48	mg/Kg	20	12/28/2017 10:07:42 A	M R48062
Toluene	13	0.95	mg/Kg	20	12/28/2017 10:07:42 A	M R48062
Ethylbenzene	1.6	0.95	mg/Kg	20	12/28/2017 10:07:42 A	M R48062
Xylenes, Total	20	1.9	mg/Kg	20	12/28/2017 10:07:42 A	M R48062
Surr: 4-Bromofluorobenzene	97.8	70-130	%Rec	20	12/28/2017 10:07:42 A	M R48062
Surr: Toluene-d8	98.8	70-130	%Rec	20	12/28/2017 10:07:42 A	M R48062

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 1712E88

Date Reported: 1/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services

Project: TRK S Royce Canyon

Lab ID: 1712E88-002

Client Sample ID: West Wall Compsite

Collection Date: 12/27/2017 1:30:00 PM

Received Date: 12/28/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	st: MRA
Chloride	100	30	mg/Kg	20	12/28/2017 11:09:59	AM 35754
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analy	st: AG
Gasoline Range Organics (GRO)	640	88	mg/Kg	20	12/28/2017 10:30:37	AM G48062
Surr: BFB	96.2	70-130	%Rec	20	12/28/2017 10:30:37	AM G48062
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analys	st: TOM
Diesel Range Organics (DRO)	110	9.8	mg/Kg	1	12/28/2017 10:54:20	AM 35750
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	12/28/2017 10:54:20	AM 35750
Surr: DNOP	91.7	70-130	%Rec	1	12/28/2017 10:54:20	AM 35750
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	st: AG
Benzene	ND	0.44	mg/Kg	20	12/28/2017 10:30:37	AM R48062
Toluene	3.3	0.88	mg/Kg	20	12/28/2017 10:30:37	AM R48062
Ethylbenzene	0.99	0.88	mg/Kg	20	12/28/2017 10:30:37 /	AM R48062
Xylenes, Total	19	1.8	mg/Kg	20	12/28/2017 10:30:37	AM R48062
Surr: 4-Bromofluorobenzene	95.2	70-130	%Rec	20	12/28/2017 10:30:37	AM R48062
Surr: Toluene-d8	101	70-130	%Rec	20	12/28/2017 10:30:37	AM R48062

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

Lab Order 1712E88

Date Reported: 1/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services

Project: TRK S Royce Canyon

Lab ID: 1712E88-003 Client Sample ID: East Wall Composite

Collection Date: 12/27/2017 1:40:00 PM

Received Date: 12/28/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analy	st: MRA
Chloride	52	30	mg/Kg	20	12/28/2017 11:22:24	AM 35754
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analy	st: AG
Gasoline Range Organics (GRO)	35	19	mg/Kg	5	12/28/2017 10:53:24	AM G48062
Surr: BFB	103	70-130	%Rec	5	12/28/2017 10:53:24	AM G48062
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	3			Analy	st: TOM
Diesel Range Organics (DRO)	14	10	mg/Kg	1	12/28/2017 11:16:17	AM 35750
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	12/28/2017 11:16:17	AM 35750
Surr: DNOP	89.4	70-130	%Rec	1	12/28/2017 11:16:17	AM 35750
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analy	st: AG
Benzene	ND	0.094	mg/Kg	5	12/28/2017 10:53:24	AM R48062
Toluene	ND	0.19	mg/Kg	5	12/28/2017 10:53:24	AM R48062
Ethylbenzene	ND	0.19	mg/Kg	5	12/28/2017 10:53:24	AM R48062
Xylenes, Total	0.76	0.37	mg/Kg	5	12/28/2017 10:53:24	AM R48062
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	5	12/28/2017 10:53:24	AM R48062
Surr: Toluene-d8	103	70-130	%Rec	5	12/28/2017 10:53:24	AM R48062

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

Lab Order 1712E88

Date Reported: 1/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services

Project: TRK S Royce Canyon

Lab ID: 1712E88-004

Client Sample ID: Floor Comp

Collection Date: 12/27/2017 1:50:00 PM

Received Date: 12/28/2017 7:10:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	280	30	mg/Kg	20	12/28/2017 11:34:48	M 35754
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analys	t: AG
Gasoline Range Organics (GRO)	45	21	mg/Kg	5	12/28/2017 11:16:12	M G48062
Surr: BFB	104	70-130	%Rec	5	12/28/2017 11:16:12	M G48062
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	t: TOM
Diesel Range Organics (DRO)	41	9.6	mg/Kg	1	12/28/2017 11:38:12 A	M 35750
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/28/2017 11:38:12 A	M 35750
Surr: DNOP	92.1	70-130	%Rec	1	12/28/2017 11:38:12	M 35750
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analys	t: AG
Benzene	ND	0.11	mg/Kg	5	12/28/2017 11:16:12 A	M R48062
Toluene	0.34	0.21	mg/Kg	5	12/28/2017 11:16:12 A	M R48062
Ethylbenzene	ND	0.21	mg/Kg	5	12/28/2017 11:16:12 A	M R48062
Xylenes, Total	1.2	0.43	mg/Kg	5	12/28/2017 11:16:12 A	M R48062
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	5	12/28/2017 11:16:12 A	M R48062
Surr: Toluene-d8	101	70-130	%Rec	5	12/28/2017 11:16:12 A	M R48062

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 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#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

TRK S Royce Canyon

Sample ID MB-35754

SampType: mblk

TestCode: EPA Method 300.0: Anions

Client ID: **PBS** Batch ID: 35754

RunNo: 48072

Prep Date: 12/28/2017 Analysis Date: 12/28/2017

SeqNo: 1540947

Units: mg/Kg

HighLimit

%RPD

Analyte

Result **PQL**

SPK value SPK Ref Val %REC LowLimit

RPDLimit Qual

Chloride

ND 1.5

Sample ID LCS-35754

SampType: Ics

TestCode: EPA Method 300.0: Anions

Client ID: Prep Date:

LCSS

Batch ID: 35754

RunNo: 48072

SPK value SPK Ref Val

SeqNo: 1540948

Units: mg/Kg

Analyte Chloride

12/28/2017 Result

Analysis Date: 12/28/2017 **PQL**

15.00

SPK value SPK Ref Val

%REC LowLimit

HighLimit

%RPD **RPDLimit** Qual

Sample ID MB-35754

ND

Result

14

15

SampType: mblk

1.5

1.5

TestCode: EPA Method 300.0: Anions RunNo: 48100

Client ID: Prep Date:

12/28/2017

Batch ID: 35754

Analysis Date: 12/28/2017

SeqNo: 1542381

Units: mg/Kg HighLimit

RPDLimit

RPDLimit

%RPD

Qual

Analyte Chloride

SampType: Ics

TestCode: EPA Method 300.0: Anions

%REC

Client ID:

LCSS

Sample ID LCS-35754

Batch ID: 35754

RunNo: 48100

Prep Date: Analyte

12/28/2017

Analysis Date: 12/28/2017

SeqNo: 1542382

LowLimit

Units: mg/Kg

HighLimit

Qual

Chloride

SPK value SPK Ref Val

15.00

0

%REC 90.8

LowLimit

110

%RPD

Qualifiers:

ND

Value exceeds Maximum Contaminant Level

Not Detected at the Reporting Limit

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Practical Quanitative Limit **PQL**
- % 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 5 of 10

- 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#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

TRK S Royce Canyon

Project:	TRK S R	loyce Canyon								
Sample ID	LCS-35750	SampType	LCS		ΓestCode: I	EPA Method	8015M/D: Di	esel Rang	e Organics	A
Client ID:	LCSS	Batch ID:	35750		RunNo:	48061				
Prep Date:	12/28/2017	Analysis Date:	12/28/201	7	SeqNo:	1540460	Units: mg/l	K g		
Analyte		Result Po	QL SPK v	alue SPK Ref \	al %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
_	Organics (DRO)	43	,	0.00			114			
Surr: DNOP		4.1	5.	.000	81.6	70	130			
Sample ID	MB-35750	SampType:	MBLK		TestCode:	EPA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	PBS	Batch ID:	35750		RunNo:	48061				
Prep Date:	12/28/2017	Analysis Date:	12/28/201	7	SeqNo:	1540461	Units: mg/l	K g		
Analyte		Result Po	QL SPK va	alue SPK Ref V	al %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	ND	10							
Motor Oil Rang Surr: DNOP	ge Organics (MRO)	ND 8.9	50	0.00	89.0	70	130			
Sull. DNOP		0.9	10	J.00	09.0	70	130			
Sample ID	1712E88-001AMS	SampType:	MS	7	TestCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	North West Wall	Co Batch ID:	35750		RunNo:	48061				
Prep Date:	12/28/2017	Analysis Date:	12/28/201	7	SeqNo:	1541389	Units: mg/k	(g		
Analyte		Result PC	QL SPK va	alue SPK Ref V	al %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	77		0.25 46.75	60.5		125			
Surr: DNOP		4.4	5.	025	87.5	70	130			
Sample ID	1712E88-001AMS	D SampType:	MSD		estCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	North West Wall	Co Batch ID:	35750		RunNo: 4	48061				
Prep Date:	12/28/2017	Analysis Date:	12/28/201	7	SeqNo:	1541390	Units: mg/k	(g		
Analyte		Result PC	QL SPK va	alue SPK Ref V	al %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)			3.73 46.75	52.6		125	6.42	20	S
Surr: DNOP	1 1 2	4.3	4.	873	88.4	70	130	0	0	
Sample ID	LCS-35724	SampType:	LCS	1	estCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	LCSS	Batch ID:	35724		RunNo: 4	18061				
Prep Date:	12/27/2017	Analysis Date:	12/28/201	7	SeqNo: '	1541392	Units: %Re	С		
Analyte		Result PC	QL SPK va	alue SPK Ref V	al %REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		4.2	5.	000	83.7	70	130			
Sample ID	MB-35724	SampType:	MBLK	7	estCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch ID:	35724		RunNo: 4	18061				
Prep Date:	12/27/2017	Analysis Date:	12/28/201	7	SeqNo: 1	1541393	Units: %Re	С		
Analyte		Result PC	QL SPK va	lue SPK Ref V	al %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 6 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.

SampType: LCS

WO#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

Sample ID LCS-35758

TRK S Royce Canyon

Sample ID MB-35724	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 35724	RunNo: 48061	
Prep Date: 12/27/2017	Analysis Date: 12/28/2017	SeqNo: 1541393 Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: DNOP	8.5 10.00	85.4 70 130	

Client ID: LCSS Prep Date: 12/28/2017	Batch ID: 3: Analysis Date: 1			unNo: 48 eqNo: 18		Units: %Red			
Analyte	Result PQL		SPK Ref Val			HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1	5.000		82.3	70	130			

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

Sample ID MB-35758	SampType:	MBLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: PBS	Batch ID:	35758	F	RunNo: 4	8061				
Prep Date: 12/28/2017	Analysis Date:	12/29/2017	S	SeqNo: 1	542278	Units: %Red	С		
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.3	10.00		83.4	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 7 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#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

TRK S Royce Canyon

Sample ID rb	Sampl	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: Volat	tiles Short	List	
Client ID: PBS	Batcl	n ID: R4	8062	acate R	RunNo: 4	8062				
Prep Date:	Analysis D	ate: 12	2/28/2017	· / · · · ·	SeqNo: 1	540475	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		0.5000		0	70	130			S
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.4	70	130			
Surr: Dibromofluoromethane	0		0.5000		0	70	130			S
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID 100ng btex Ics	SampT	SampType: LCS4 TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batch	Batch ID: R48062 RunNo: 48062								
Prep Date:	Analysis D	ate: 12	2/28/2017	8	SeqNo: 1	542074	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	106	80	120			
Toluene	0.99	0.050	1.000	0	99.4	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.4	80	120			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.6	70	130			
Surr: Toluene-d8	0.50		0.5000		99.3	70	130			

Sample ID 1712e88-002ams	Sample ID 1712e88-002ams SampType: MS4 TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: West Wall Compsite Batch ID: R48062 RunNo: 48062										
Prep Date: Analysis Date: 12/28/2017 SeqNo: 1542090 Units: mg/Kg										
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	0.44	17.67	0.1749	101	80	120			
Toluene	20	0.88	17.67	3.278	95.3	80	120			
Ethylbenzene	18	0.88	17.67	0.9940	94.8	80	120			
Xylenes, Total	69	1.8	53.00	19.22	94.6	80	120			
Surr: 4-Bromofluorobenzene	7.8		8.834		88.4	70	130			
Surr: Toluene-d8	8.8		8.834		99.4	70	130			

Sample ID	1712e88-002amsd	SampType	MSD4		Tes	tCode: El	PA Method	8260B: Vola	iles Short	List	
Client ID:	West Wall Compsite	Batch ID:	R4806	2	R	lunNo: 4	8062				
Prep Date:	An	2017	SeqNo: 1542091 Units: mg/Kg								
Analyte	F	Result Po	QL SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		17 0	.44	17.67	0.1749	97.6	80	120	3.51	0	
Toluene		19 0	.88	17.67	3.278	90.8	80	120	4.02	0	

- 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#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

TRK S Royce Canyon

Sample ID 1712e88-002amsd

SampType: MSD4

TestCode: EPA Method 8260B: Volatiles Short List

Client ID: west wall Comps	ite Batch	ID: R4	8062	F	Kunino: 4	8062				
Prep Date:	Analysis D	ate: 12	2/28/2017	S	SeqNo: 1	542091	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	17	0.88	17.67	0.9940	93.0	80	120	1.86	0	
Xylenes, Total	65	1.8	53.00	19.22	85.5	80	120	7.17	0	
Surr: 4-Bromofluorobenzene	7.8		8.834		88.7	70	130	0	0	
Surr: Toluene-d8	8.8		8.834		100	70	130	0	0	

- 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
- Value above quantitation range
- Analyte detected below quantitation limits
- Page 9 of 10

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1712E88

02-Jan-18

Client:

Williams Field Services

Project:

TRK S Royce Canyon

Sample ID rb

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

70

Client ID:

PBS

Batch ID: G48062

5.0

RunNo: 48062

Prep Date:

Analysis Date: 12/28/2017

SeqNo: 1540545

Units: mg/Kg

Analyte

Result

PQL SPK value SPK Ref Val

%REC LowLimit

HighLimit %RPD

RPDLimit Qual

Gasoline Range Organics (GRO)

ND 490

500.0

97.8

130

Surr: BFB

Sample ID 2.5ug gro Ics

SampType: LCS

25.00

500.0

477.1

9542

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID:

Prep Date:

LCSS

Batch ID: G48062

RunNo: 48062

LowLimit

70

70

Units: mg/Kg

130

Analyte

Gasoline Range Organics (GRO)

PQL 22

470

Analysis Date: 12/28/2017 SPK value SPK Ref Val

SeqNo: 1540649 %REC

HighLimit

RPDLimit

Qual

Surr: BFB

SPK value SPK Ref Val

93.5 TestCode: EPA Method 8015D Mod: Gasoline Range

88.7

130

%RPD

Client ID:

North West Wall Co

Sample ID 1712e88-001ams SampType: MS

Batch ID: G48062

95

5.0

RunNo: 48062

142

130

Prep Date: Analyte

Surr: BFB

Gasoline Range Organics (GRO)

Analysis Date: 12/28/2017 PQL

SeqNo: 1541443 %REC

114

95.5

Units: mg/Kg HighLimit

%RPD **RPDLimit**

Qual

Sample ID 1712e88-001amsd

SampType: MSD

Result

1300

9100

TestCode: EPA Method 8015D Mod: Gasoline Range

64.7

70

LowLimit

HighLimit

142

130

Client ID: Prep Date: North West Wall Co

Batch ID: G48062

Analysis Date: 12/28/2017

PQL

95

RunNo: 48062 SeqNo: 1541444

Units: mg/Kg

%RPD

RPDLimit Qual

0

Analyte Gasoline Range Organics (GRO)

Surr: BFB

1200 9300

Result

477.1

9542

SPK value SPK Ref Val 725.2

725.2

%REC LowLimit 107 97.4

64.7 70

2.75

20

- 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
- 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 10 of 10



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:	WILLIAMS FIELD SERVI	Work Order Number:	1712E88		RcptNo:	1
Received By:	Anne Thorne	12/28/2017 7:10:00 AM	i i	anne Am		
Completed By:	Anne Thorne	12/28/2017 7:19:10 AM	ļ	Aone Arm		
Reviewed By:	DDS	12/28/17		and given		
Chain of Cus	stody					
1. Custody sea	als intact on sample bottles?		Yes	No 🗌	Not Present	
2. Is Chain of 0	Custody complete?		Yes 🗹	No 🗔	Not Present	
3. How was the	e sample delivered?		Courier			
Log In						
4. Was an atte	empt made to cool the sample	s?	Yes 🗸	No 🗆	NA 🗆	· ·
5. Were all sar	mples received at a temperatu	ure of >0° C to 6.0°C	Yes 🗸	No 🗆	NA 🗆	
6. Sample(s) ii	n proper container(s)?		Yes 🗸	No 🗆		
7 Cufficient on	mple volume for indicated tes	t/a/2	Yes 🗸	No .		
	(except VOA and ONG) prop			No 🗆	* * - * - * - * - * - * - * - * - *	
	vative added to bottles?	eny preserved		No ☑	NA 🗆	
J. Was preserv	alive added to bottles!		Yes 🗀	NO E		
10. VOA vials ha	ave zero headspace?		Yes	No 🗆	No VOA Vials	
11. Were any sa	ample containers received bro	ken?	Yes .	No 🗸	d of account	
in the second			' i <u>.</u> .		# of preserved bottles checked	
	vork match bottle labels? pancies on chain of custody)		Yes 🗹	No L	for pH:	>12 unless noted)
	correctly identified on Chain	of Custody?	Yes 🗸	No 🗌	Adjusted?	
	at analyses were requested?		Yes 🗸	No 🗆		
15. Were all hold	ling times able to be met?		Yes 🗸	No 🗌	Checked by:	
(If no, notify	customer for authorization.)			1, 11, 11 1		
Special Hand	ling (if applicable)	(6)		_	_	
16. Was client no	otified of all discrepancies with	h this order?	Yes	No 🗆	NA 🗹	
Person	Notified:	Date	Azol ka nerali nekal kel esa esa esa melanti kankana milatiki	deliberatalists til taket i i i i i i i i i i i i i i i i i i i		
By Wh	om:	Via:	eMail	Phone Fax	In Person	
Regard	ling:	A CONTRACTOR OF STATE		A CONTROL BY A CONTROL OF THE PARTY OF THE P	Parameter Commission Constitution (Constitution Constitution	
Client I	nstructions:	CONTROL OF THE STATE OF THE STA		A THE WHILE IEL NAME A PAGE OF THE	A CAST COLOR AND AND AND AND AND AND AND AND AND AND	
17. Additional re	marks:	0				
18. Cooler Info						
Cooler No			eal Date	Signed By		
[1	1.0 Good Y	es				

Chain-of-Custody Record				Turn-Around		SCA exa							-									
Client: WFS				□ Standard					HALL ENVIRONMENTAL ANALYSIS LABORATORY													
				Project Name:					www.hallenvironmental.com													
Mailing Address: 1755 ARB 40 DR				TRK-5-ROYCE (CNOON			4901 Hawkins NE - Albuquerque, NM 87109															
Bloom Field NM 87413				TRK-5-ROYCE CONTON Project #:				Tel. 505-345-3975 Fax 505-345-4107														
Phone #: 508-632 - 4475-								Analysis Request														
email or Fax#: KijuN-Hong @ williams . com				Project Manager:				(ylu	ô					O ₄)					Т	T	\Box	
QA/QC Package:				6			TMB's (8021)	SS OI	DRO / MRO)			8		, S(CB's							
☐ Standard ☐ Level 4 (Full Validation)				KISUN HONG				Ö	8			SIMS)		, PC	2 P(
Accreditation				Sampler: Morgan Killion				TPH (Gas only)	-	-	504.1)	8270		NO.	808						Ê	
□ NELAP □ Other				On Ice: Ves No Sample Temperature: C			+	+	GRC	418.1)	504		Sis	NO	es/		(OA)				\o	
Date	Time	Matrix	Sample Request ID	AT 12/28/17	Preservative Type	The second second	BTEX + M TB E	BTEX + MTBE	TPH 8015B (GRO	TPH (Method	EDB (Method	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Gh			Air Bubbles (Y or N)	
127/17	1:20	50:1	North west well Composite	1-402		-coi	X		Χ									X				
27/17	1:30	soil	west wall	1-402		-202	X		X									X				
1717 13717 12717	1:40	50,1	East Wall, e composite Floor	1-402		703	X		X									X				
2/2/17	1:50	5011	Floor	1-402		704	X		×									X				
					0	•	AT	12/2	811													
						,																
Date: Time: Relinquished by: 1940 Mory Lilaton			Received by:	Valt	12 Pate Time	Remarks:																
Date:	Time:	Relinquish	ed by:	Received by:	1	Date Time 7 /2/28//7 01/0																

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