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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NMOCD
JUL 13 2018
DISTRICT III

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: **Enduring Resources, LLC**	Contact: **Chad Snell**
Address: **332 Road 3100, Aztec, New Mexico 87410**	Telephone No.: **505-444-0586**
Facility Name: **Chaco 2308 6H 395H**	Facility Type: **Well Site (Oil)**

Surface Owner: **BLM**	Mineral Owner: **BLM**	API No. **30-043-35553**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	**6**	**23N**	**8W**	**1687**	**NORTH**	**1263291**	**EAST**	**San Juan**

Latitude 36.2590237 **Longitude** -107.714816 NAD83

NATURE OF RELEASE

Type of Release: **Produced Oil**	Volume of Release: **12 BBLS**	Volume Recovered: **0 BBLS**
Source of Release: **VRU piping failure**	Date and Hour of Occurrence: **June 25, 2018**	Date and Hour of Discovery: **June 25, 2018 – 10:30 AM**
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
NOT IMPACTED

Describe Cause of Problem and Remedial Action Taken.*
On June 25th, 2018 the lease operator noticed the ground next to VRU was unstable under the liner at the Chaco 2308 6H 395H wellsite. The piping from the VRU that ran below the surface had failed causing the release. Approximately 12 bbls was released based on spill calculator. Zero (0) bbls of oil were recovered. The well was shut in to stop the release. The site was ranked according to the NMOCD Guidelines for the Remediation of Leaks, Spills and Releases. The site was ranked a 10 due to a wash less than 1,000 feet from the location. This set the closure standard to 1,000 ppm TPH, 10 ppm benzene, and 50 ppm total BTEX.

Describe Area Affected and Cleanup Action Taken.*
On June 28, 2018, approximately 50 bbls of impacted soil was excavated from the spill area. The excavation was approximately 9' long by 4' wide, by 4' deep; see *Field Notes.* There were five (5) composite samples that were collected from the excavated area. Composite samples are from the North Wall, West Wall, South Wall, East Wall and the bottom at four (4) foot below surface which was sent in for laboratory analysis. Each sample was analyzed for TPH (GRO/DRO/MRO) via USEPA Method 8015, and for Benzene and total BTEX via USEPA Method 8021. Samples from North Wall, South Wall and Bottom returned results below the regulatory standards determined for this location. West and East Wall samples returned results above the regulatory standard; see attached *Analytical Results*. Further excavation is being completed and samples will be taken.

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:	OIL CONSERVATION DIVISION
Printed Name: **Chad Snell**	Approved by Environmental Specialist:
Title: **HSE Tech**	Approval Date: 7/23/18 Expiration Date:
E-mail Address: **csnell@enduringresources.com**	Conditions of Approval: Sample Removing Wall's/Lease for TPH, Btex, Benzene ☒ Attached
Date: **7/10/2018** Phone: **505-444-0586**	

NCS 1820455071

29

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 7/13/18 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number #nCS1820455070 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 division-approved corrective action 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 Aztec on or before N/A. If 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; C_6 thru C_{36}), 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; C_6 thru C_{36}), 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.

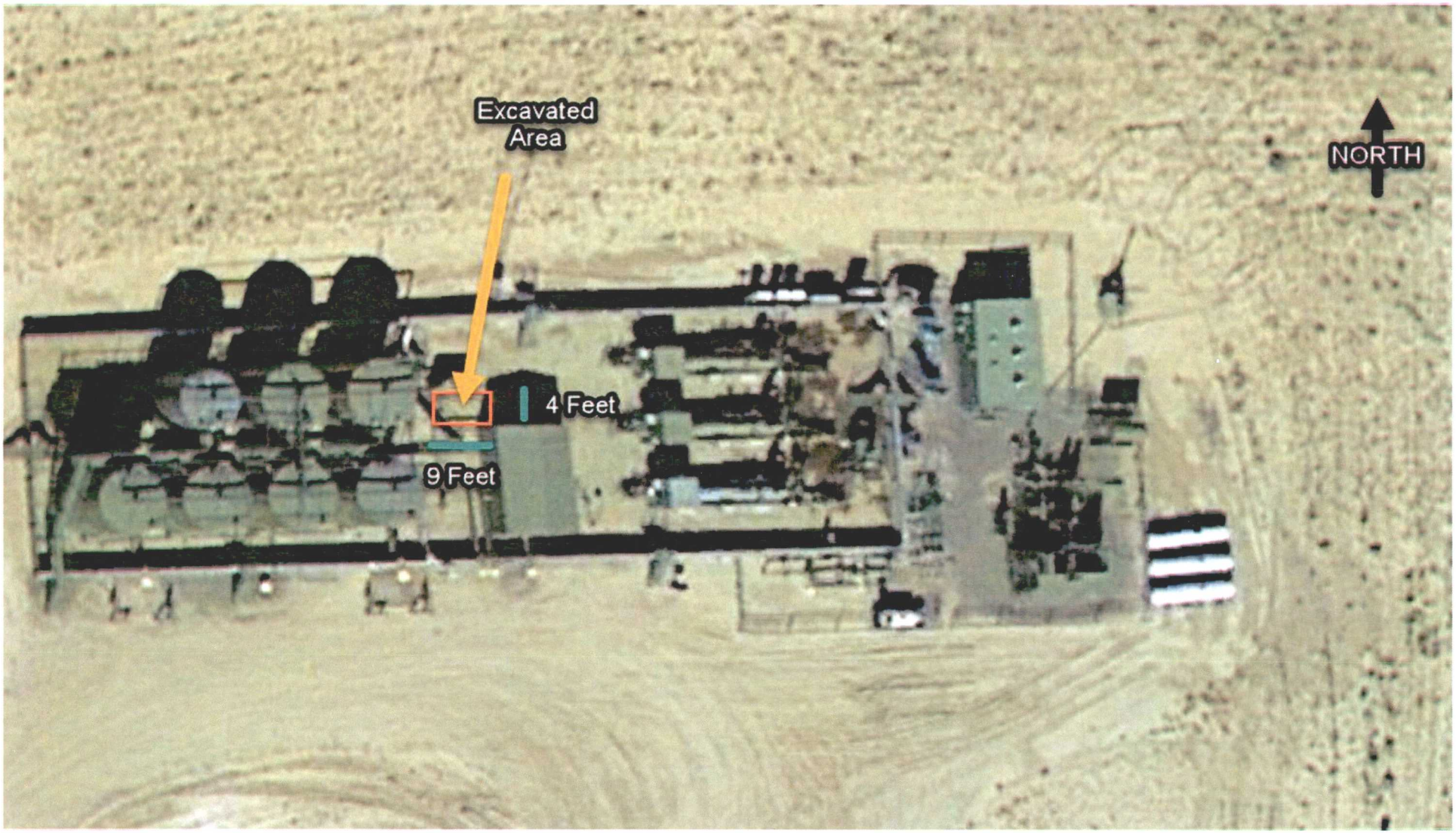
•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, 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


Excavated
Area
NORTH
4 Feet
9 Feet

ENDURING RESOURCES

ON-SITE FORM

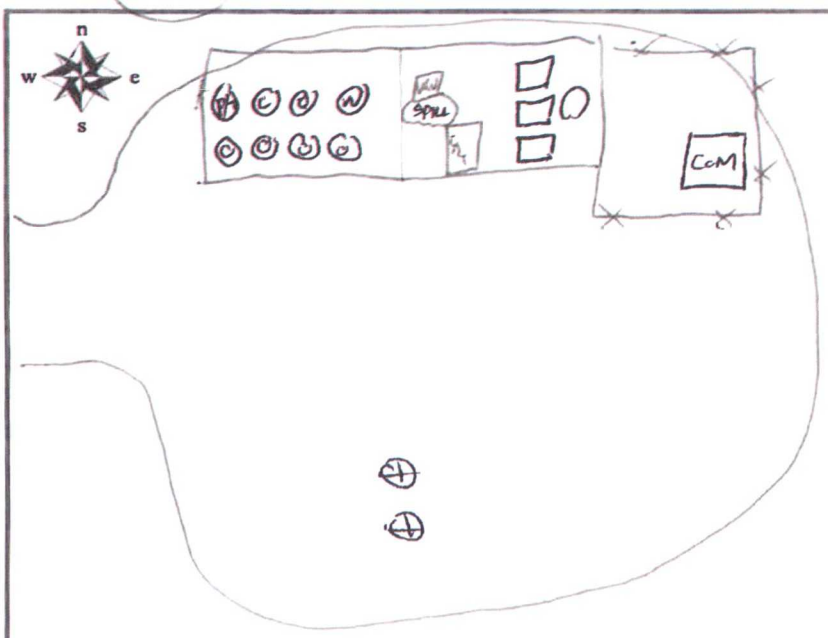
Well Name Chaco 230E 6H 395H API # 30-045-35553

Section 6 Township 23N Range 8W County San Juan State NM

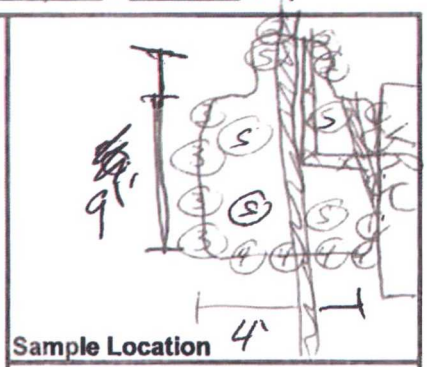
Contractors On-Site None Time On-Site 840 Time Off-Site 935

Spill Amount 12 bbls Spilled (Oil)/Produced Water/Other —) Recovered 0

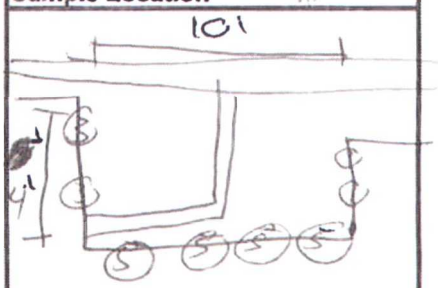
Land Use (Range / Residential / Tribe —) Spill Area 4 x 9 x 4 deep



Site Diagram



Sample Location



Sample Location

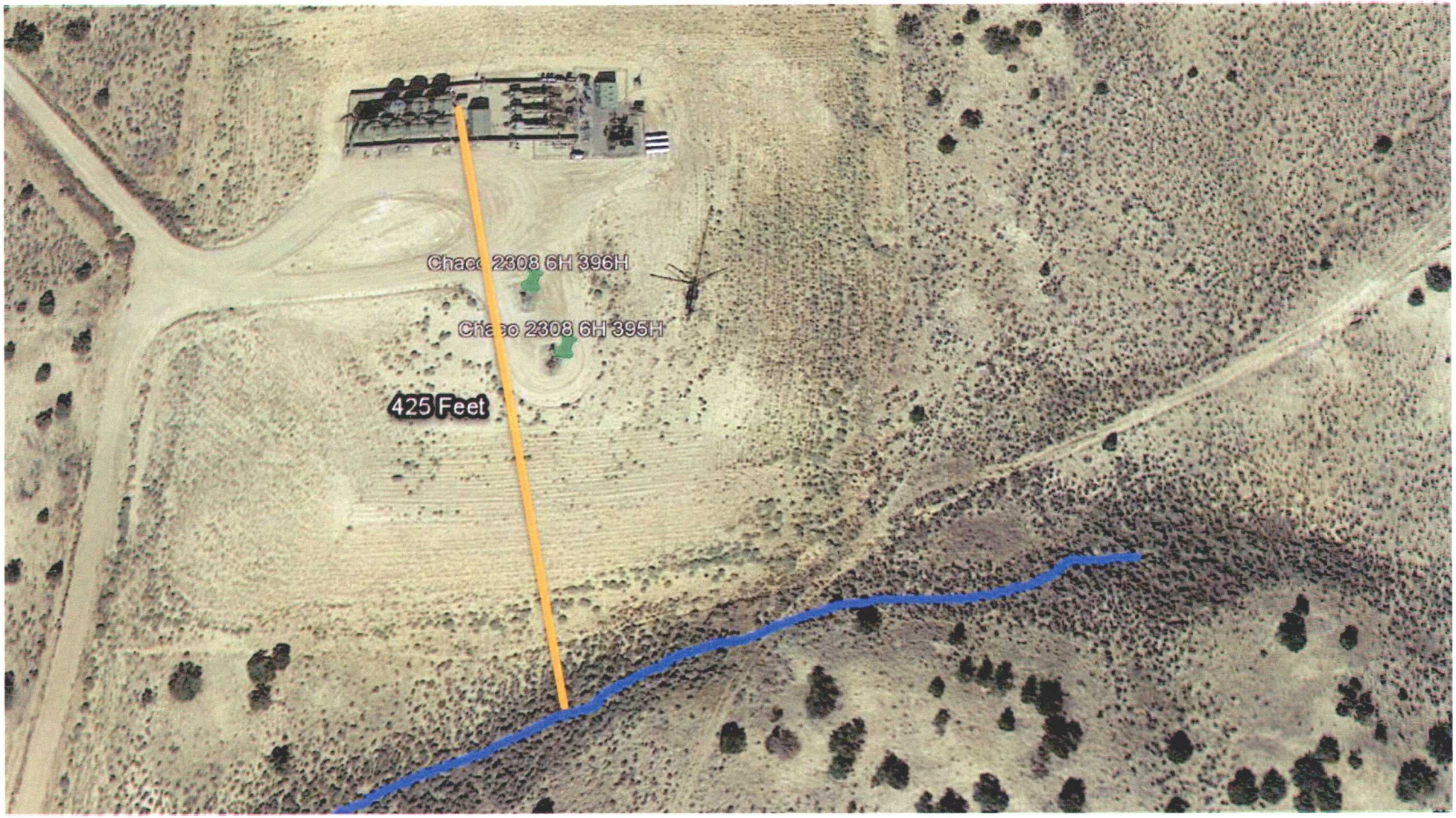
Comments: * Soil firm clay. Tough to sample

Samples

Time	Sample #	Sample Description	Characteristics	OVM (ppm)	Analysis Requested
—	NA	100 Standard	NA	—	NA
900	1	North Wall	Brown Clay, Some wet	—	EC21, EC15
905	2	West Wall		—	
910	3	South Wall		—	
915	4	East Wall		—	
920	5	Bottom @ 4'		—	

Name (Print) James McDaniel Date 6/20/18

Name (Signature) [signature] Company Enduring Res


Chaco 2308 6H 396H
Chaco 2308 6H 395H
425 Feet


Elevation: 6,940 Feet
Chaco 2308 6H 396H
Chaco 2308 6H 395H
Chaco 2308 6I 397H
3,380 Feet
Elevation: 6,790 Feet

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 10, 2018

Enduring Resources

Sample Delivery Group:	L1005833
Samples Received:	06/29/2018
Project Number:	
Description:	Spill
Site:	CHACO 2308 6H 395H
Report To:	James McDaniel 332 County Road 3100 Aztec, NM 87410

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

SAMPLE SUMMARY

EAST WALL L1005833-01 Solid

Collected by: James McDaniel | Collected date/time: 06/28/18 09:15 | Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134083	1	07/05/18 15:33	07/05/18 15:45	JD
Volatile Organic Compounds (GC) by Method 8015	WG1134115	2500	06/30/18 09:32	07/05/18 19:11	BMB
Volatile Organic Compounds (GC) by Method 8021	WG1133637	1000	06/30/18 09:32	07/04/18 21:15	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 08:10	MG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	10	07/06/18 17:47	07/09/18 18:13	MG

NORTH WALL L1005833-02 Solid

Collected by: James McDaniel | Collected date/time: 06/28/18 09:00 | Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134083	1	07/05/18 15:33	07/05/18 15:45	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1134115	100	06/30/18 09:32	07/05/18 17:43	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:16	MG

BOTTOM @ 4' L1005833-03 Solid

Collected by: James McDaniel | Collected date/time: 06/28/18 09:20 | Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1133637	500	06/30/18 09:32	07/04/18 21:59	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:29	MTJ

SOUTH WALL L1005833-04 Solid

Collected by: James McDaniel | Collected date/time: 06/28/18 09:10 | Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1134115	100	06/30/18 09:32	07/05/18 18:05	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:43	MTJ

WEST WALL L1005833-05 Solid

Collected by: James McDaniel | Collected date/time: 06/28/18 09:05 | Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1133637	1000	06/30/18 09:32	07/04/18 22:44	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:56	MG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.5		1	07/05/2018 15:45	WG1134083

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	60.1		0.546	1000	07/04/2018 21:15	WG1133637
Toluene	153		5.46	1000	07/04/2018 21:15	WG1133637
Ethylbenzene	42.4		0.546	1000	07/04/2018 21:15	WG1133637
Total Xylene	171		1.64	1000	07/04/2018 21:15	WG1133637
TPH (GC/FID) Low Fraction	13700		273	2500	07/05/2018 19:11	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*86.0*		*77.0-120*		*07/04/2018 21:15*	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*86.0*		*77.0-120*		*07/05/2018 19:11*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*86.2*		*75.0-128*		*07/04/2018 21:15*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*93.2*		*75.0-128*		*07/05/2018 19:11*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	551		43.7	10	07/09/2018 18:13	WG1135089
C28-C40 Oil Range	16.9		4.37	1	07/09/2018 08:10	WG1135089
(S) o-Terphenyl	*94.5*		*18.0-148*		*07/09/2018 08:10*	WG1135089
(S) o-Terphenyl	*94.1*		*18.0-148*		*07/09/2018 18:13*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.7		1	07/05/2018 15:45	WG1134083

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.848		0.0563	100	07/05/2018 17:43	WG1134115
Toluene	1.65		0.563	100	07/05/2018 17:43	WG1134115
Ethylbenzene	1.80		0.0563	100	07/05/2018 17:43	WG1134115
Total Xylene	8.78		0.169	100	07/05/2018 17:43	WG1134115
TPH (GC/FID) Low Fraction	582		11.3	100	07/05/2018 17:43	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*88.8*		*77.0-120*		*07/05/2018 17:43*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*94.4*		*75.0-128*		*07/05/2018 17:43*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	45.8		4.51	1	07/09/2018 07:16	WG1135089
C28-C40 Oil Range	17.7		4.51	1	07/09/2018 07:16	WG1135089
(S) o-Terphenyl	*82.5*		*18.0-148*		*07/09/2018 07:16*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.2		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.290	500	07/04/2018 21:59	WG1133637
Toluene	6.94		2.90	500	07/04/2018 21:59	WG1133637
Ethylbenzene	3.90		0.290	500	07/04/2018 21:59	WG1133637
Total Xylene	16.0		0.871	500	07/04/2018 21:59	WG1133637
TPH (GC/FID) Low Fraction	853		58.0	500	07/04/2018 21:59	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*72.7*	J2	*77.0-120*		*07/04/2018 21:59*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*96.4*		*75.0-128*		*07/04/2018 21:59*	WG1133637

Sample Narrative:

L1005833-03 WG1133637: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	38.4		4.64	1	07/09/2018 07:29	WG1135089
C28-C40 Oil Range	ND		4.64	1	07/09/2018 07:29	WG1135089
(S) o-Terphenyl	*83.2*		*18.0-148*		*07/09/2018 07:29*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.3		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.673		0.0560	100	07/05/2018 18:05	WG1134115
Toluene	2.69		0.560	100	07/05/2018 18:05	WG1134115
Ethylbenzene	2.95		0.0560	100	07/05/2018 18:05	WG1134115
Total Xylene	11.0		0.168	100	07/05/2018 18:05	WG1134115
TPH (GC/FID) Low Fraction	590		11.2	100	07/05/2018 18:05	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*91.9*		*77.0-120*		*07/05/2018 18:05*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*95.8*		*75.0-128*		*07/05/2018 18:05*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	37.2		4.48	1	07/09/2018 07:43	WG1135089
C28-C40 Oil Range	ND		4.48	1	07/09/2018 07:43	WG1135089
(S) o-Terphenyl	*97.7*		*18.0-148*		*07/09/2018 07:43*	WG1135089

Cp
Tc
Ss
Cn
Qc
Gl
Al
Sc

Totall Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.6		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.577	1000	07/04/2018 22:44	WG1133637
Toluene	ND		5.77	1000	07/04/2018 22:44	WG1133637
Ethylbenzene	5.72		0.577	1000	07/04/2018 22:44	WG1133637
Total Xylene	9.85		1.73	1000	07/04/2018 22:44	WG1133637
TPH (GC/FID) Low Fraction	1020		115	1000	07/04/2018 22:44	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*83.5*		*77.0-120*		*07/04/2018 22:44*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*98.4*		*75.0-128*		*07/04/2018 22:44*	WG1133637

Sample Narrative:

L1005833-05 WG1133637: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	105		4.62	1	07/09/2018 07:56	WG1135089
C28-C40 Oil Range	17.4		4.62	1	07/09/2018 07:56	WG1135089
(S) o-Terphenyl	*64.3*		*18.0-148*		*07/09/2018 07:56*	WG1135089

Method Blank (MB)

(MB) R3323523-1 07/05/18 15:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

L1005833-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1005833-01 07/05/18 15:45 • (DUP) R3323523-3 07/05/18 15:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	91.5	90.5	1	1.11		5

Laboratory Control Sample (LCS)

(LCS) R3323523-2 07/05/18 15:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3323529-1 07/05/18 15:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L1005847-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1005847-02 07/05/18 15:52 • (DUP) R3323529-3 07/05/18 15:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	92.1	92.5	1	0.456		5

Laboratory Control Sample (LCS)

(LCS) R3323529-2 07/05/18 15:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3323306-5 07/04/18 14:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.7			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.4			75.0-128

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323306-1 07/04/18 13:05 • (LCSD) R3323306-2 07/04/18 13:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.0500	0.0504	0.0476	101	95.2	71.0-121			5.71	20
Toluene	0.0500	0.0509	0.0482	102	96.3	72.0-120			5.55	20
Ethylbenzene	0.0500	0.0512	0.0482	102	96.4	76.0-121			5.99	20
Total Xylene	0.150	0.155	0.146	103	97.2	75.0-124			5.92	20
(S) a,a,a-Trifluorotoluene(FID)				99.2	97.9	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				97.9	96.9	75.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323306-3 07/04/18 13:49 • (LCSD) R3323306-4 07/04/18 14:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) Low Fraction	5.50	6.10	6.27	111	114	70.0-136			2.74	20
(S) a,a,a-Trifluorotoluene(FID)				104	106	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				110	111	75.0-128				

L1005833-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005833-05 07/04/18 22:44 • (MS) R3323306-6 07/04/18 23:06 • (MSD) R3323306-7 07/04/18 23:29

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0577	ND	57.8	62.0	100	107	1000	10.0-146			7.07	29
Toluene	0.0577	ND	59.1	63.4	96.4	104	1000	10.0-143			6.95	30
Ethylbenzene	0.0577	5.72	57.6	62.1	89.9	97.6	1000	10.0-147			7.42	31
Total Xylene	0.173	9.85	164	177	88.8	96.4	1000	10.0-149			7.73	30
(S) a,a,a-Trifluorotoluene(FID)					*93.1*	*92.6*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*97.5*	*97.3*		*75.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

L1005833-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005833-05 07/04/18 22:44 • (MS) R3323306-8 07/04/18 23:51 • (MSD) R3323306-9 07/05/18 00:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	6.35	1020	7980	8130	110	112	1000	10.0-147			1.90	30
(S) a,a,a-Trifluorotoluene(FID)					*102*	*102*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*109*	*108*		*75.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3323415-5 07/05/18 12:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000395	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.7			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.3			75.0-128

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323415-1 07/05/18 10:14 • (LCSD) R3323415-2 07/05/18 10:36

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.0500	0.0429	0.0478	85.8	95.6	71.0-121			10.7	20
Toluene	0.0500	0.0462	0.0516	92.4	103	72.0-120			11.0	20
Ethylbenzene	0.0500	0.0484	0.0540	96.9	108	76.0-121			10.9	20
Total Xylene	0.150	0.146	0.162	97.3	108	75.0-124			10.7	20
(S) a,a,a-Trifluorotoluene(FID)				99.1	99.0	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				98.4	98.6	75.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323415-3 07/05/18 10:58 • (LCSD) R3323415-4 07/05/18 11:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) Low Fraction	5.50	5.64	5.58	103	101	70.0-136			1.11	20
(S) a,a,a-Trifluorotoluene(FID)				102	103	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				107	107	75.0-128				

Method Blank (MB)

(MB) R3324030-1 07/09/18 05:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*110*			*18.0-148*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3324030-2 07/09/18 05:42 • (LCSD) R3324030-3 07/09/18 05:55

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
C10-C28 Diesel Range	50.0	48.0	49.0	96.0	98.0	50.0-150			2.00	20
(S) o-Terphenyl				*101*	*117*	*18.0-148*				

L1005829-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005829-01 07/09/18 06:09 • (MS) R3324030-4 07/09/18 06:22 • (MSD) R3324030-5 07/09/18 06:36

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	53.5	10.1	54.6	47.8	83.2	70.4	1	50.0-150			13.3	20
(S) o-Terphenyl					*108*	*83.8*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
** Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Co
Tc
Ss
Cn
Sr
Qc
Gl
Al
Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

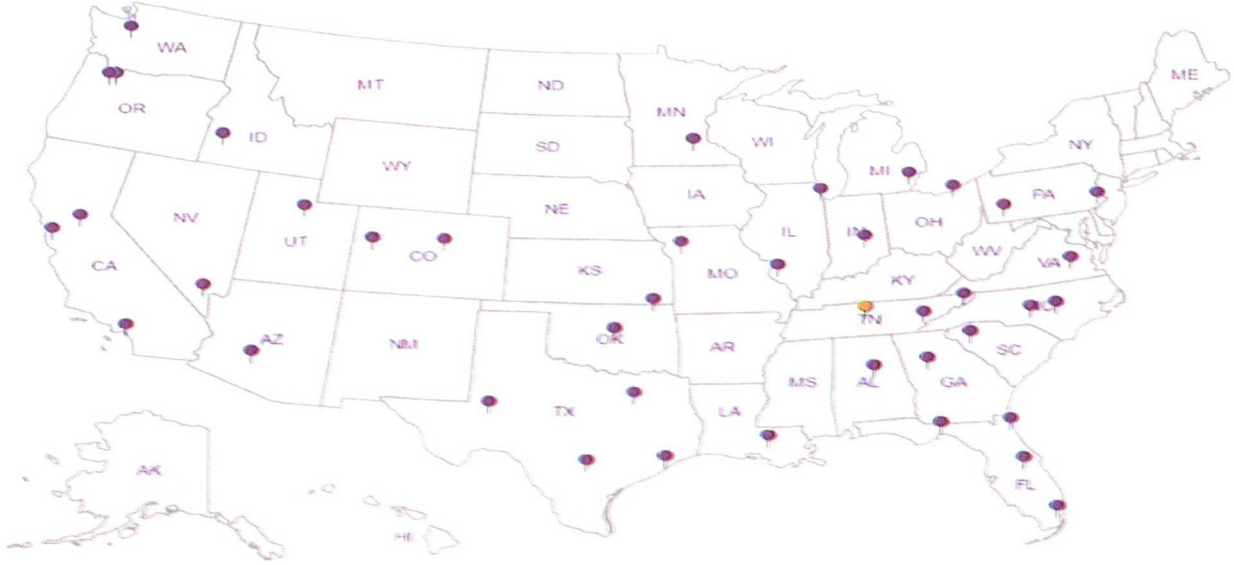
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Enduring Resources

332 County Road 3100
Aztec, NM 87410

Billing Information:
James McDaniel
332 County Road 3100
Aztec, NM 87410

Report to: James McDaniel
Email To: jmcdaniel@enduringresources.com
Project Description: Spill
City/State Collected: —
Phone: 505-636-9731
Fax:
Client Project # —
Lab Project # —
Collected by (print): J McDaniel
Site/Facility ID #: Chaco 2308 6H 395H
P.O. # —
Collected by (signature):
Immediately Packed on Ice N ___ Y X
Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Quote # —
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	8021(BTEX)	8015(GRO/DRO/MRO)	Remarks	Sample # (lab only)
East Wall	Comp	SS	—	6/28/18	915	1	X	X		-01
North Wall	Comp	SS	—	6/28/18	900	1	X	X		-02
Bottom @ 4'	Comp	SS	—	6/28/18	920	1	X	X		-03
South Wall	Comp	SS	—	6/28/18	910	1	X	X		-04
West Wall	Comp	SS	—	6/28/18	905	1	X	X		-05

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: ___ UPS X FedEx ___ Courier _____
Tracking # 4196 3260 1780

Relinquished by: (Signature) — Date: 6/28/18 — Time: 1612 — Received by: (Signature)
Relinquished by: (Signature) — Date: — Time: — Received by: (Signature)
Relinquished by: (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No (circled) HCL / MeoH TBR
Temp: 4.3°C Bottles Received: 5 = 40zClr
Date: 6/29/18 Time: 0845

If preservation required by Login: Date/Time
Hold:
Condition: NCF (OK)

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
a subsidiary of Mustang
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1005833
D211

Acctnum: ENDRESANM
Template:
Prelogin:
TSR: 288 - Daphne Richards
PB:
Shipped Via:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N