

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 Department

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: LOGOS Operating, LLC	OGRID
Contact Name: Larissa Farrell	Contact Telephone: 505-787-2027
Contact email: lfarrell@logosresourcesllc.com	Incident # (assigned by OCD)
Contact mailing address: 2010 Afton Place, Farmington, NM 87401	NF1824035063

NMOCOD
SEP 21 2018
DISTRICT III

Location of Release Source

Latitude 36.257521 _____ Longitude -107.660865 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Chaco 23 08 03 1H and 2H	Site Type Oil well
Date Release Discovered: 8/11/2018	API# (if applicable) 30-045-35647 and 30-045-35646

Unit Letter	Section	Township	Range	County
H	03	23 N	08W	San Juan

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 15 bbls	Volume Recovered (bbls) 0 bbls
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Heater treater underground line had a pin hole leak.

DENIED

BY: Vanessa Fields
DATE: 9/24/18 (505) 334-6178 Ext. 119

Incomplete Closure Report
See Encl. 1 23

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.
Printed Name: <u>Larissa Farrell</u> Title: <u>Environmental/Regulatory Technician</u> Signature: <u></u> Date: <u>8/21/2018</u> email: <u>lfarrell@logosresourcesllc.com</u> Telephone: <u>(505) 787-2027</u>
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

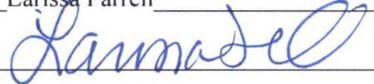
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Larissa Farrell Title: Environmental/Regulatory Technician

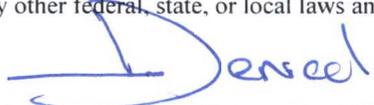
Signature:  Date: 9/20/2018

email: lfarrell@logosresourcesllc.com Telephone: (505) 787-2027

OCD Only

Received by:  Date: 9/24/18

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Deneel See Email & Page 1 Date: _____

Printed Name: _____ Title: _____

Fields, Vanessa, EMNRD

From: Fields, Vanessa, EMNRD
Sent: Monday, September 24, 2018 3:14 PM
To: Larissa Farrell
Cc: Smith, Cory, EMNRD
Subject: RE: Chaco 2308 03 1H and 2H

Good afternoon Larissa,

Logos Final report for the Chaco 2308 03 1H and 2H has been denied due to following incomplete attachments included in the Final C-141.

Please submit the following

- A scaled site and sampling diagram as described in 19.15.29.11
- Description of remediation activities

Thank you,

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

From: Fields, Vanessa, EMNRD
Sent: Wednesday, August 29, 2018 2:38 PM
To: Larissa Farrell <lfarrell@logosresourcesllc.com>
Cc: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Subject: RE: Chaco 2308 03 1H and 2H

Good afternoon Larissa,

Please demonstrate your groundwater information along with your significant watercourse.

Thank you,
Vanessa Fields
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 119
Cell: (505) 419-0463
vanessa.fields@state.nm.us

Chaco 2308 03 1H and 2H Site Map





2010 Afton Place
Farmington, NM 87401
Phone: (505) 278-8720
Fax: (505) 326-6112

September 20, 2018

New Mexico Oil Conservation Division
Environmental Department
1000 Rio Brazos Road
Aztec, NM 87410

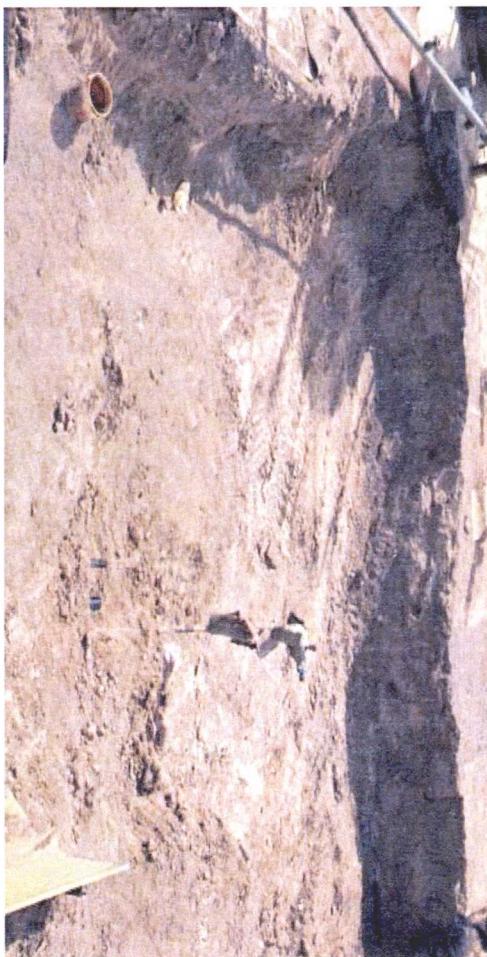
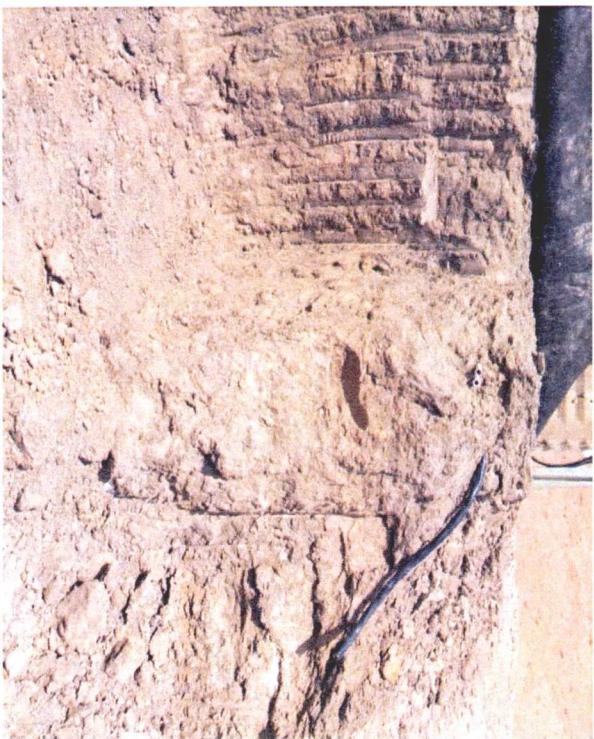
Re: Chaco 2308 03 1H & 2H Remediation Activities

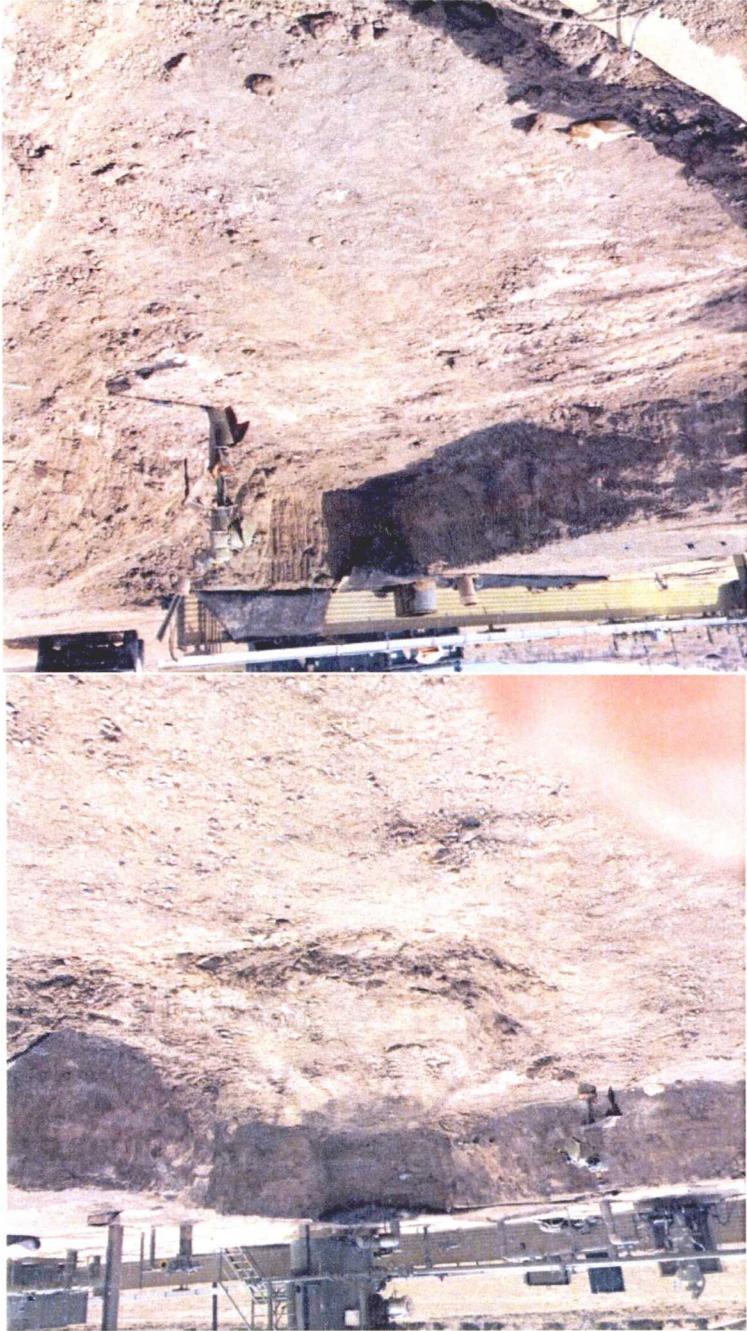
To whom it may concern:

LOGOS Operating, LLC immediately shut in well. All contaminated soil was dug out and hauled to an approved remediation facility. There were 5 composite samples taken. One composite sample collected from each side wall and one from the bottom. All samples were analyzed for BTEX, Chlorides, GRO and DRO. All constituents came in under the Table I thresholds for \leq 100' for groundwater depth. Excavation area has been backfilled.

Sincerely,

Larissa Farrell
Environmental/Regulatory Technician







Analytical Report

Report Summary

Client: Logos Operating, LLC
Chain Of Custody Number:
Samples Received: 8/30/2018 3:16:00PM
Job Number: 12035-0114
Work Order: P808057
Project Name/Location: Chaco 1H

Report Reviewed By:



Date: 9/4/18

Walter Hinchman, Laboratory Director



Date: 9/4/18

Tim Cain, Project Manager



Envirotech Inc. certifies the test results meet all requirements of TNi unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.
Envirotech, Inc, currently holds the appropriate and available Utah TNi certification NM009792018-1 for the data reported.

Logos Operating, LLC	Project Name:	Chaco 1H	Reported: 09/04/18 13:45
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Chaco 1H 1	P808057-01A	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
	P808057-01B	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
Chaco 1H 2	P808057-02A	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
	P808057-02B	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
Chaco 1H 3	P808057-03A	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
	P808057-03B	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
Chaco 1H 4	P808057-04A	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
	P808057-04B	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
Chaco 1H 5	P808057-05A	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.
	P808057-05B	Soil	08/30/18	08/30/18	Glass Jar, 4 oz.

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Logos Operating, LLC	Project Name:	Chaco 1H	Reported: 09/04/18 13:45
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Chaco 1H 1
P808057-01 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		<i>99.2 %</i>		<i>50-150</i>	<i>1835013</i>	<i>08/30/18</i>	<i>08/30/18</i>	<i>EPA 8021B</i>	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1835013	08/30/18	08/30/18	EPA 8015D	
Diesel Range Organics (C10-C28)	46.7	25.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		<i>102 %</i>		<i>50-150</i>	<i>1835013</i>	<i>08/30/18</i>	<i>08/30/18</i>	<i>EPA 8015D</i>	
<i>Surrogate: n-Nonane</i>		<i>109 %</i>		<i>50-200</i>	<i>1835014</i>	<i>08/30/18</i>	<i>08/31/18</i>	<i>EPA 8015D</i>	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1835019	08/30/18	08/31/18	EPA 300.0/9056A	

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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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Chaco 1H 2
P808057-02 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.2 %		50-150	1835013	08/30/18	08/30/18	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1835013	08/30/18	08/30/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.7 %		50-150	1835013	08/30/18	08/30/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		105 %		50-200	1835014	08/30/18	08/31/18	EPA 8015D	
Anions by 300.0/9056A									
Chloride	27.5	20.0	mg/kg	1	1835019	08/30/18	08/31/18	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Chaco 1H	Reported: 09/04/18 13:45
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Chaco 1H 3
P808057-03 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.2 %		50-150	1835013	08/30/18	08/30/18	EPA 8021B	

Nonhalogenated Organics by 8015

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1835013	08/30/18	08/30/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.3 %		50-150	1835013	08/30/18	08/30/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		109 %		50-200	1835014	08/30/18	08/31/18	EPA 8015D	

Anions by 300.0/9056A

Chloride	95.6	20.0	mg/kg	1	1835019	08/30/18	08/31/18	EPA 300.0/9056A	
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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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**Chaco 1H 4
P808057-04 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Volatile Organics by EPA 8021

Benzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.8 %		50-150	1835013	08/30/18	08/30/18	EPA 8021B	

Nonhalogenated Organics by 8015

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1835013	08/30/18	08/30/18	EPA 8015D	
Diesel Range Organics (C10-C28)	34.7	25.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %		50-150	1835013	08/30/18	08/30/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		117 %		50-200	1835014	08/30/18	08/31/18	EPA 8015D	

Anions by 300.0/9056A

Chloride	52.1	20.0	mg/kg	1	1835019	08/30/18	08/31/18	EPA 300.0/9056A	
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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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Chaco 1H 5
P808057-05 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1835013	08/30/18	08/30/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		99.4 %		50-150	1835013	08/30/18	08/30/18	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1835013	08/30/18	08/30/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1835014	08/30/18	08/31/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.2 %		50-150	1835013	08/30/18	08/30/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		118 %		50-200	1835014	08/30/18	08/31/18	EPA 8015D	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1835019	08/30/18	08/31/18	EPA 300.0/9056A	

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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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Volatile Organics by EPA 8021 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1835013 - Purge and Trap EPA 5030A

Blank (1835013-BLK1)		Prepared: 08/30/18 1 Analyzed: 08/30/18 2								
Benzene	ND	100	ug/kg							
Toluene	ND	100	"							
Ethylbenzene	ND	100	"							
p,m-Xylene	ND	200	"							
o-Xylene	ND	100	"							
Total Xylenes	ND	100	"							
Total BTEX	ND	100	"							
<i>Surrogate: 4-Bromochlorobenzene-PID</i>	8000		"	8000		100	50-150			

LCS (1835013-BS1)		Prepared: 08/30/18 1 Analyzed: 08/30/18 2								
Benzene	4760	100	ug/kg	5000		95.2	70-130			
Toluene	4840	100	"	5000		96.9	70-130			
Ethylbenzene	4950	100	"	5000		99.0	70-130			
p,m-Xylene	10200	200	"	10000		102	70-130			
o-Xylene	4960	100	"	5000		99.3	70-130			
Total Xylenes	15100	100	"	15000		101	70-130			
<i>Surrogate: 4-Bromochlorobenzene-PID</i>	8090		"	8000		101	50-150			

Matrix Spike (1835013-MS1)		Source: P808055-01		Prepared: 08/30/18 1 Analyzed: 08/31/18 0						
Benzene	4380	100	ug/kg	5000	ND	87.6	54.3-133			
Toluene	4470	100	"	5000	ND	89.4	61.4-130			
Ethylbenzene	4570	100	"	5000	ND	91.4	61.4-133			
p,m-Xylene	9400	200	"	10000	ND	94.0	63.3-131			
o-Xylene	4540	100	"	5000	ND	90.8	63.3-131			
Total Xylenes	13900	100	"	15000	ND	92.9	63.3-131			
<i>Surrogate: 4-Bromochlorobenzene-PID</i>	7900		"	8000		98.7	50-150			

Matrix Spike Dup (1835013-MSD1)		Source: P808055-01		Prepared: 08/30/18 1 Analyzed: 08/31/18 0						
Benzene	4560	100	ug/kg	5000	ND	91.3	54.3-133	4.12	20	
Toluene	4630	100	"	5000	ND	92.7	61.4-130	3.61	20	
Ethylbenzene	4720	100	"	5000	ND	94.4	61.4-133	3.19	20	
p,m-Xylene	9680	200	"	10000	ND	96.9	63.3-131	3.04	20	
o-Xylene	4670	100	"	5000	ND	93.5	63.3-131	2.96	20	
Total Xylenes	14400	100	"	15000	ND	95.8	63.3-131	3.01	20	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>	7980		"	8000		99.7	50-150			

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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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Nonhalogenated Organics by 8015 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1835013 - Purge and Trap EPA 5030A

Blank (1835013-BLK1)		Prepared: 08/30/18 1 Analyzed: 08/30/18 2								
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.95		"	8.00		99.4	50-150			
LCS (1835013-BS2)		Prepared: 08/30/18 1 Analyzed: 08/31/18 0								
Gasoline Range Organics (C6-C10)	45.7	20.0	mg/kg	50.0		91.4	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.82		"	8.00		97.8	50-150			
Matrix Spike (1835013-MS2)		Source: P808055-01		Prepared: 08/30/18 1 Analyzed: 08/31/18 0						
Gasoline Range Organics (C6-C10)	45.5	20.0	mg/kg	50.0	ND	91.1	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.64		"	8.00		95.5	50-150			
Matrix Spike Dup (1835013-MSD2)		Source: P808055-01		Prepared: 08/30/18 1 Analyzed: 08/31/18 0						
Gasoline Range Organics (C6-C10)	48.6	20.0	mg/kg	50.0	ND	97.2	70-130	6.43	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.61		"	8.00		95.1	50-150			

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Logos Operating, LLC
 PO Box 18
 Flora Vista NM, 87415

 Project Name: Chaco 1H
 Project Number: 12035-0114
 Project Manager: Larissa Farrell

Reported:
 09/04/18 13:45

Nonhalogenated Organics by 8015 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1835014 - DRO Extraction EPA 3570
Blank (1835014-BLK1)

Prepared: 08/30/18 1 Analyzed: 08/31/18 1

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40+)	ND	50.0	"							
Surrogate: <i>n</i> -Nonane	55.6		"	50.0		111	50-200			

LCS (1835014-BS1)

Prepared: 08/30/18 1 Analyzed: 08/31/18 1

Diesel Range Organics (C10-C28)	486	25.0	mg/kg	500		97.1	38-132			
Surrogate: <i>n</i> -Nonane	56.7		"	50.0		113	50-200			

Matrix Spike (1835014-MS1)
Source: P808055-02

Prepared: 08/30/18 1 Analyzed: 08/31/18 1

Diesel Range Organics (C10-C28)	677	25.0	mg/kg	500	182	99.1	38-132			
Surrogate: <i>n</i> -Nonane	58.5		"	50.0		117	50-200			

Matrix Spike Dup (1835014-MSD1)
Source: P808055-02

Prepared: 08/30/18 1 Analyzed: 08/31/18 1

Diesel Range Organics (C10-C28)	668	25.0	mg/kg	500	182	97.2	38-132	1.41	20	
Surrogate: <i>n</i> -Nonane	58.2		"	50.0		116	50-200			

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Logos Operating, LLC PO Box 18 Flora Vista NM, 87415	Project Name: Chaco 1H Project Number: 12035-0114 Project Manager: Larissa Farrell	Reported: 09/04/18 13:45
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Anions by 300.0/9056A - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1835019 - Anion Extraction EPA 300.0/9056A

Blank (1835019-BLK1)				Prepared: 08/30/18 1 Analyzed: 08/31/18 1						
Chloride	ND	20.0	mg/kg							
LCS (1835019-BS1)				Prepared: 08/30/18 1 Analyzed: 08/31/18 0						
Chloride	253	20.0	mg/kg	250		101	90-110			
Matrix Spike (1835019-MS1)				Prepared: 08/30/18 1 Analyzed: 08/31/18 1						
Chloride	275	20.0	mg/kg	250	ND	110	80-120			
Matrix Spike Dup (1835019-MSD1)				Prepared: 08/30/18 1 Analyzed: 08/31/18 1						
Chloride	276	20.0	mg/kg	250	ND	110	80-120	0.171	20	

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Logos Operating, LLC	Project Name:	Chaco 1H	Reported: 09/04/18 13:45
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- ** Methods marked with ** are non-accredited methods.

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Client: <u>Logos Operating</u>		Report Attention		Lab Use Only			TAT		EPA Program					
Project: <u>Chaco IH</u>		Report due by:		Lab WO#		Job Number		1D	3D	RCRA	CWA	SDWA		
Project Manager: <u>Lanssa Farrell</u>		Attention:		P 808057		12035-0114		<input checked="" type="checkbox"/>						
Address:		Address:		Analysis and Method							State			
City, State, Zip <u>505419-1100</u>		City, State, Zip		DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1	NM	CO	UT	AZ
Phone: <u>505-787-2027</u>		Phone:												
Email: <u>farrell@logosresourcesllc.com</u>		Email:												

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1	Remarks
1:47	8/30	S	2	Chaco IH 1	1	X	X	X			X		Rush
1:49	8/30	S	2	Chaco IH 2	2	X	X	X			X		Rush
1:57	8/30	S	2	Chaco IH 3	3	X	X	X			X		Rush
2:02	8/30	S	2	Chaco IH 4	4	X	X	X			X		Rush
2:04	8/30	S	2	Chaco IH 5	5	X	X	X			X		Rush

Additional Instructions: vis ice in cooler

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraudulent and may be grounds for legal action. Sampled by: Lanssa Farrell

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>8/30/18</u>	Time <u>15:16 pm</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>8/30/18</u>	Time <u>15:16 pm</u>	Lab Use Only		
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Received on ice: <u>Y</u> / N		
						T1	T2	T3
						AVG Temp °C <u>4</u>		

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____ Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, **v** - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above boratory with this COC. The liability of the laboroatr is limited to the amount paid for on the report.

Received by: Tina Smith
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