

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

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

DENIED

Responsible Party: LOGOS Operating LLC	OGRID: 289408
Contact Name: Larissa Farrell	Contact Telephone: (505) 787-2027
Contact email: lfarrell@logosresourcesllc.com	Incident # (assigned by OCD) nCS1929538744
Contact mailing address: 2010 Afton Pl Farmington, NM 87401	

Location of Release Source

Latitude 36.8777504 Longitude -107.2987595
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Rosa Unit 315A	Site Type: Wellsite
Date Release Discovered: 9/6/19	API# (if applicable) 30-039-29983

Unit Letter	Section	Township	Range	County
C	30	T31N	R04W	Rio Arriba

Site Characterization does not meet requirements of 19.15.29 NMAC
No Sample depths, no information on remaining impacts, etc.

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 type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) Unknown	Volume Recovered (bbls) 2 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: Production Tank overflowed causing the secondary containment to hold fluid. NMOCD located the release and contacted LOGOS to report release.

Form C-141
Page 2 of 27
Received by OCD: 2/5/2020 3:50:14 PM


State of New Mexico
Oil Conservation Division

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: Larissa Farrell	Title: ENV/REG Technician
Signature: 	Date: 10/2/19
email: lfarrell@logosresourcesllc.com	Telephone: (505) 787-2027
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	
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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	71 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*


- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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Printed Name: Larissa Farrell Title: Env/Reg Technician
Signature:  Date: 2/4/2020
email: lfarrell@logosresourcesllc.com Telephone: (505)787-2027

OCD Only

Received by: _____ Date: _____

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Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*


- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Larissa Farrell Title: Env/Reg Technician


Signature:  Date: 2/5/2020

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

OCD Only

Received by: OCD Date: 2/5/2020

☐ Approved ☐ Approved with Attached Conditions of Approval ☒ Denied ☐ Deferral Approved

Signature:  Date: 4/27/2020

Page 6 of 27
Received by OCD: 2/5/2020 3:50:14 PM

State of New Mexico
Oil Conservation Division

Incident ID	
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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: Env/Reg Technician
Signature:  Date: 2/4/2020
email: lfarrell@logosresourcesllc.com Telephone: (505)787-2027

OCD Only

Received by: _____ Date: _____

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: _____ Date: _____
Printed Name: **DENIED** Title: _____



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

February 4, 2020

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

Re: nCS1929538744

Rosa Unit 315A Remediation Activity
30-039-29983
SEC. 30, T31N AND R04W
Rio Arriba County, NM

Dear Mr. Smith,

New Mexico Oil Conservation Division Field Inspector discovered an unknown release at the Rosa Unit 315A from a tank that remained within the secondary containment. LOGOS Operating, LLC shut in the well and pulled all remaining tank contents. The tank was replaced and Microabsorb AB2000 was raked into the gravel. Water was continuously being pulled from the drainage hole that was dug to collect the water under the tank. LOGOS scheduled the confirmation sampling on 1/14/2020 with the NMOCD and BLM. Two 5-point composite samples were collected from the affected area and delivered on ice to Envirotech Laboratories. The closest depth to ground water is located approximately 2,500' away in Section 19, T31N, R04W at the Rosa Unit #043 with record depth to groundwater at 80' bgs. With the difference in elevation, the depth to groundwater at Rosa Unit 315A is estimated at 71' bgs. The results from the sampling confirmed the NMAC 19.15.29.12 (E) Table I closure criteria has been met. 19.15.29.13(D)(1) NMAC states that the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The surface results showed chloride concentrations were above 600 mg/kg so the affected area was delineated down to 4' bgs and analyzed by EPA Method 300.0. The concentrations showed higher than the thresholds in 19.15.29 NMAC so LOGOS Operating, LLC is requesting a deferral to reclaim the top 4' of soil in the area of secondary containment until final reclamation of pad.

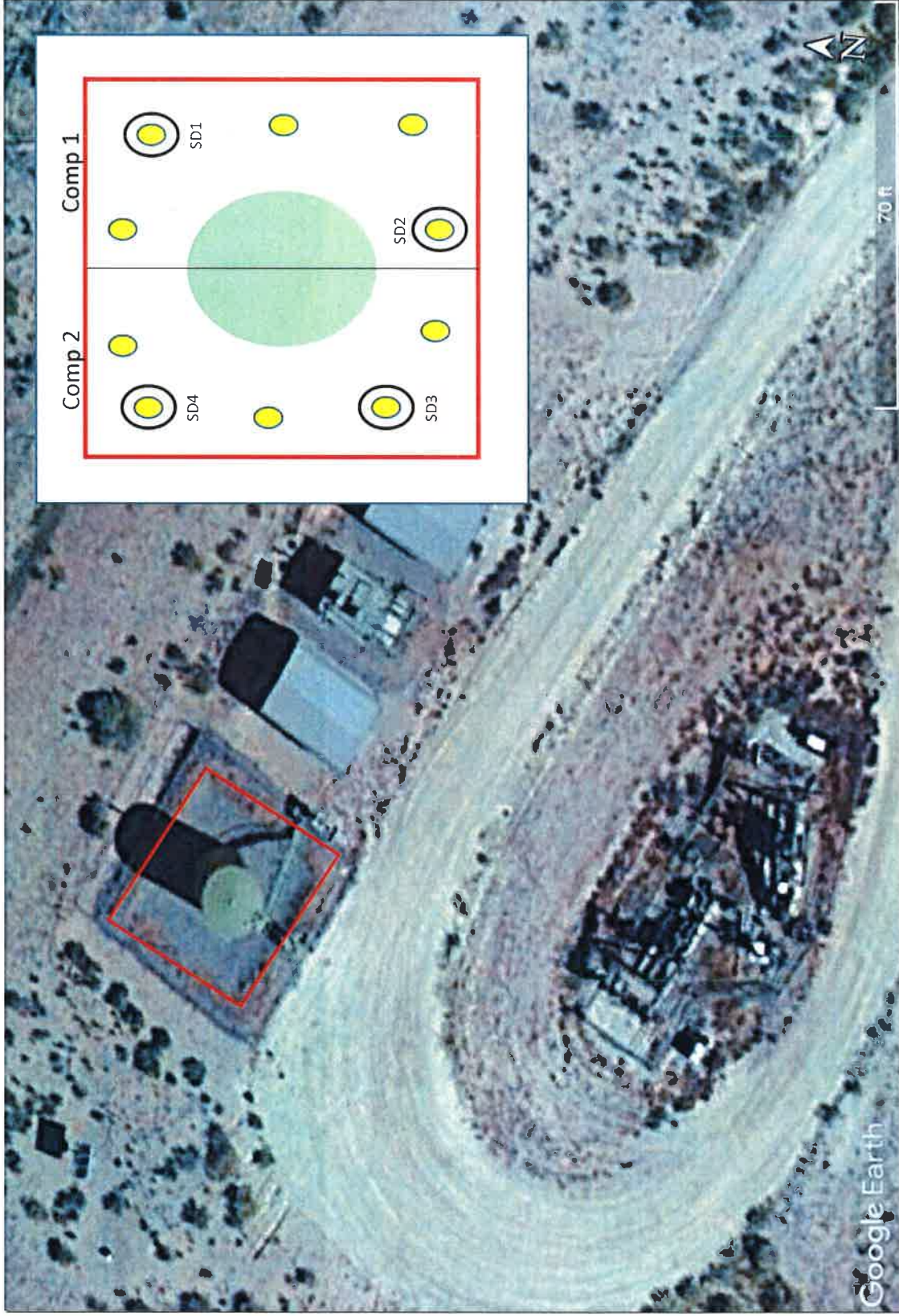
Sincerely,

Larissa Farrell
Environmental/Regulatory Technician



Rosa Unit 315A – 30-039-29983
Scaled Aerial Map
Unit C, Section 30, T31N, R4W
Rio Arriba County, NM





- Legend
- Affected Area
 - Composite Sampling Point
 - Delineation Sampling Point


Rosa Unit 315A – 30-039-29983
Scaled Aerial Map
Unit C, Section 30, T31N, R4W
Rio Arriba County, NM







LOGOS Operating, LLC – Rosa Unit 322A
Hydrology Map
Unit E, Section 23, T31N, R5W
Rio Arriba County, NM

Legend

 300' radius

 ½ mile radius

 Rosa Unit 043 – Cathodic Well

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS IN
NORTHWEST NEW MEXICO

OPERATOR: Williams Production Company LOCATION: J 19 31 4 LEASE NUMBER: SF-078889

NAME OF WELL/WELLS OR PIPELINE SERVICED: ROSA UNIT #043 DK
DUALWELL N/A

30-039-07954

ELEVATION: 6572' GR COMPLETION DATE: 10/20/87 TOTAL DEPTH: 500 ft. LAND TYPE: FED

CASING: 7-5/8" 26.4# K-55 Set @ N/A ft. Casing is not cemented.

CEMENT PLUG--Top:N/A' Bottom: N/A' Used 0 sx. Class "B" (1.18 cu.ft./sk).

WATER DEPTH: 80 ' Water zone thickness not available. WATER DESCRIPTION: Fresh

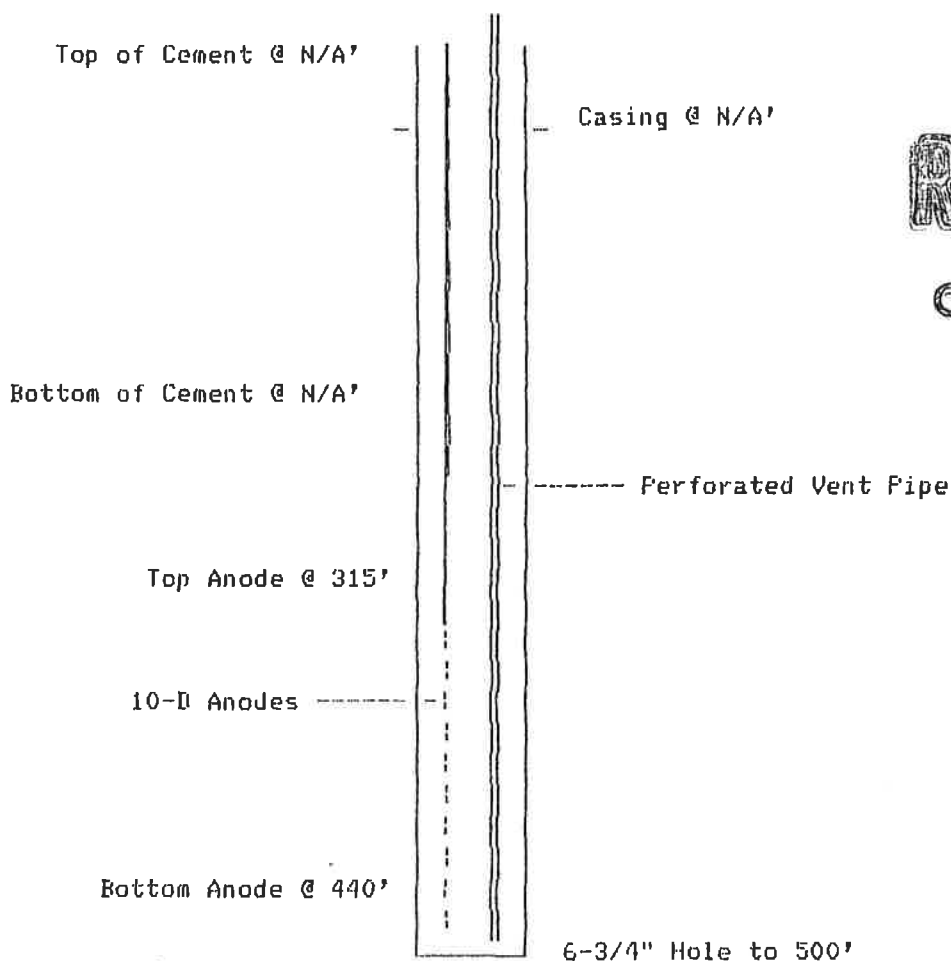
DEPTH OF GAS: N/A '

COKE: 6345 lbs. of Metallurgical coke breeze used.

NUMBER & TYPE OF ANODES: 10-D TOP ANODE @ 315 ft. BOTTOM ANODE @ 440 ft.

VENT PIPE: 1" PVC Set @ 500 ft. Vent pipe perforated from 295 ft. to 500 ft.

REMARKS:



RECEIVED
DEC 11 1991
OIL CON. DIV.
DIST. 3







Analytical Report

Report Summary

Client: Logos Operating, LLC

Samples Received: 1/15/2020

Job Number: 12035-0114

Work Order: P001048

Project Name/Location: Rosa 315A

Report Reviewed By:

Date:

1/21/20

Walter Hinchman, Laboratory Director



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, holds the Utah TNi certification NM009792018-1 for the data reported.
Envirotech, Inc, holds the Texas TNi certification T104704557-19-2 for the data reported.

5796 Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

24 Hour Emergency Response Phone (800) 362-1879

envirotech-inc.com
Labadmin@envirotech-inc.com



Logos Operating, LLC	Project Name:	Rosa 315A	Reported: 01/21/20 16:46
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
Comp 1	P001048-01A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-01B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
SD1	P001048-02A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-02B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
SD2	P001048-03A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-03B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
SD3	P001048-04A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-04B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
Comp 2	P001048-05A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-05B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
SD4	P001048-06A	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.
	P001048-06B	Soil	01/15/20	01/15/20	Glass Jar, 4 oz.

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

Project Name: Rosa 315A
Project Number: 12035-0114
Project Manager: Larissa Farrell

Reported:
01/21/20 16:46

Comp 1
P001048-01 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	64.2	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	151	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		91.8 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.2 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	623	20.0	mg/kg	1	2003037	01/17/20	01/17/20	EPA 300.0/9056A	

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Labadmin@envirotech-inc.com



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

Project Name: Rosa 315A
Project Number: 12035-0114
Project Manager: Larissa Farrell

Reported:
01/21/20 16:46

SD1

P001048-02 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	175	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	395	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		93.7 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.7 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	686	20.0	mg/kg	1	2003037	01/17/20	01/17/20	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 315A	
PO Box 18	Project Number:	12035-0114	Reported:
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	01/21/20 16:46

SD2

P001048-03 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	59.2	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		82.2 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.1 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	

Anions by 300.0/9056A

Chloride	574	20.0	mg/kg	1	2003037	01/17/20	01/17/20	EPA 300.0/9056A	
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Logos Operating, LLC	Project Name:	Rosa 315A	
PO Box 18	Project Number:	12035-0114	Reported:
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	01/21/20 16:46

SD3

P001048-04 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		91.1 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		86.2 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	1700	40.0	mg/kg	2	2003037	01/17/20	01/17/20	EPA 300.0/9056A	

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

Project Name: Rosa 315A
Project Number: 12035-0114
Project Manager: Larissa Farrell

Reported:
01/21/20 16:46

Comp 2
P001048-05 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		101 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	193	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	416	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		89.2 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.3 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	
Anions by 300.0/9056A									
Chloride	901	40.0	mg/kg	2	2003037	01/17/20	01/17/20	EPA 300.0/9056A	

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

Project Name: Rosa 315A
Project Number: 12035-0114
Project Manager: Larissa Farrell

Reported:
01/21/20 16:46

SD4

P001048-06 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organics by EPA 8021

Benzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		102 %		50-150	2003016	01/16/20	01/17/20	EPA 8021B	

Nonhalogenated Organics by 8015 - DRO/ORO

Diesel Range Organics (C10-C28)	269	25.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Oil Range Organics (C28-C40)	676	50.0	mg/kg	1	2003035	01/17/20	01/17/20	EPA 8015D	
Surrogate: n-Nonane		93.6 %		50-200	2003035	01/17/20	01/17/20	EPA 8015D	

Nonhalogenated Organics by 8015 - GRO

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	2003016	01/16/20	01/17/20	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.8 %		50-150	2003016	01/16/20	01/17/20	EPA 8015D	

Anions by 300.0/9056A

Chloride	521	20.0	mg/kg	1	2003037	01/17/20	01/17/20	EPA 300.0/9056A	
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Logos Operating, LLC
PO Box 18
Flora Vista NM, 87415

Project Name: Rosa 315A
Project Number: 12035-0114
Project Manager: Larissa Farrell

Reported:
01/21/20 16:46

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 2003016 - Purge and Trap EPA 5030A

Blank (2003016-BLK1)

Prepared: 01/15/20 1 Analyzed: 01/16/20 1

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	7.99		"	8.00		99.9	50-150			

LCS (2003016-BS1)

Prepared: 01/15/20 1 Analyzed: 01/16/20 1

Benzene	5.26	0.0250	mg/kg	5.00		105	70-130			
Toluene	5.34	0.0250	"	5.00		107	70-130			
Ethylbenzene	5.27	0.0250	"	5.00		105	70-130			
p,m-Xylene	10.5	0.0500	"	10.0		105	70-130			
o-Xylene	5.20	0.0250	"	5.00		104	70-130			
Total Xylenes	15.7	0.0250	"	15.0		104	70-130			
Surrogate: 4-Bromochlorobenzene-PID	8.10		"	8.00		101	50-150			

Matrix Spike (2003016-MS1)

Source: P001040-01

Prepared: 01/15/20 1 Analyzed: 01/16/20 2

Benzene	5.24	0.0250	mg/kg	5.00	ND	105	54.3-133			
Toluene	5.35	0.0250	"	5.00	ND	107	61.4-130			
Ethylbenzene	5.26	0.0250	"	5.00	ND	105	61.4-133			
p,m-Xylene	10.5	0.0500	"	10.0	ND	105	63.3-131			
o-Xylene	5.22	0.0250	"	5.00	ND	104	63.3-131			
Total Xylenes	15.7	0.0250	"	15.0	ND	105	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	8.22		"	8.00		103	50-150			

Matrix Spike Dup (2003016-MSD1)

Source: P001040-01

Prepared: 01/15/20 1 Analyzed: 01/16/20 2

Benzene	5.11	0.0250	mg/kg	5.00	ND	102	54.3-133	2.51	20	
Toluene	5.20	0.0250	"	5.00	ND	104	61.4-130	2.76	20	
Ethylbenzene	5.14	0.0250	"	5.00	ND	103	61.4-133	2.37	20	
p,m-Xylene	10.2	0.0500	"	10.0	ND	102	63.3-131	2.60	20	
o-Xylene	5.12	0.0250	"	5.00	ND	102	63.3-131	1.92	20	
Total Xylenes	15.3	0.0250	"	15.0	ND	102	63.3-131	2.37	20	
Surrogate: 4-Bromochlorobenzene-PID	8.21		"	8.00		103	50-150			

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Logos Operating, LLC	Project Name:	Rosa 315A	Reported: 01/21/20 16:46
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Nonhalogenated Organics by 8015 - DRO/ORO - 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 2003035 - DRO Extraction EPA 3570

Blank (2003035-BLK1)

Prepared: 01/17/20 0 Analyzed: 01/17/20 1

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	47.0		"	50.0		94.0	50-200			

LCS (2003035-BS1)

Prepared: 01/17/20 0 Analyzed: 01/17/20 1

Diesel Range Organics (C10-C28)	467	25.0	mg/kg	500		93.5	38-132			
Surrogate: n-Nonane	49.2		"	50.0		98.4	50-200			

Matrix Spike (2003035-MS1)

Source: P001047-01

Prepared: 01/17/20 0 Analyzed: 01/17/20 1

Diesel Range Organics (C10-C28)	509	25.0	mg/kg	500	ND	102	38-132			
Surrogate: n-Nonane	50.3		"	50.0		101	50-200			

Matrix Spike Dup (2003035-MSD1)

Source: P001047-01

Prepared: 01/17/20 0 Analyzed: 01/17/20 1

Diesel Range Organics (C10-C28)	509	25.0	mg/kg	500	ND	102	38-132	0.0588	20	
Surrogate: n-Nonane	50.1		"	50.0		100	50-200			

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Logos Operating, LLC	Project Name:	Rosa 315A	Reported: 01/21/20 16:46
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

Nonhalogenated Organics by 8015 - GRO - 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 2003016 - Purge and Trap EPA 5030A

Blank (2003016-BLK1)

Prepared: 01/15/20 1 Analyzed: 01/16/20 1

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.90		#	8.00		86.2	50-150			

LCS (2003016-BS2)

Prepared: 01/15/20 1 Analyzed: 01/16/20 1

Gasoline Range Organics (C6-C10)	47.4	20.0	mg/kg	50.0		94.7	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.96		#	8.00		87.0	50-150			

Matrix Spike (2003016-MS2)

Source: P001040-01

Prepared: 01/15/20 1 Analyzed: 01/16/20 2

Gasoline Range Organics (C6-C10)	48.2	20.0	mg/kg	50.0	ND	96.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.96		#	8.00		86.9	50-150			

Matrix Spike Dup (2003016-MSD2)

Source: P001040-01

Prepared: 01/15/20 1 Analyzed: 01/16/20 2

Gasoline Range Organics (C6-C10)	47.7	20.0	mg/kg	50.0	ND	95.4	70-130	0.942	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.92		"	8.00		86.5	50-150			

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Logos Operating, LLC	Project Name:	Rosa 315A	
PO Box 18	Project Number:	12035-0114	Reported:
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	01/21/20 16:46

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 2003037 - Anion Extraction EPA 300.0/9056A

Blank (2003037-BLK1)				Prepared & Analyzed: 01/17/20 1						
Chloride	ND	20.0	mg/kg							
LCS (2003037-BS1)				Prepared & Analyzed: 01/17/20 1						
Chloride	249	20.0	mg/kg	250		99.5	90-110			
Matrix Spike (2003037-MS1)				Prepared & Analyzed: 01/17/20 1						
Chloride	252	20.0	mg/kg	250	ND	101	80-120			
Matrix Spike Dup (2003037-MSD1)				Prepared & Analyzed: 01/17/20 1						
Chloride	251	20.0	mg/kg	250	ND	100	80-120	0.299	20	

QC Summary Report

Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Logos Operating, LLC	Project Name:	Rosa 315A	
PO Box 18	Project Number:	12035-0114	Reported:
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	01/21/20 16:46

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
 - NR Not Reported
 - RPD Relative Percent Difference
 - ** Methods marked with ** are non-accredited methods.
- Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Chain of Custody

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