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

Responsible Party: LOGOS Operating, LLC	OGRID: 320608
Contact Name: Larissa Farrell	Contact Telephone: 505-787-2027
Contact email: lfarrell@logosresourcesllc.com	Incident # *(assigned by OCD)* NCS1915552540
Contact mailing address: 2010 Afton Pl, Farmington, NM 87401	

Location of Release Source

Latitude 36.893747 Longitude -107.720383
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Quinn 338	Site Type: Well
Date Release Discovered: 5/30/19	API# *(if applicable)* 30-045-27798

Unit Letter	Section	Township	Range	County
N	18	31N	08W	San Juan County

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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☒ Natural Gas	Volume Released (Mcf): Unknown	Volume Recovered (Mcf) None
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Vegetation was visually identified as dying in area of pipeline. LOGOS Operating shut in the well and began excavating the area surrounding the pipeline and identified a pinhole leak. Appropriate sampling and investigation is being conducted.

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? ☐ Yes ☒ 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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Environmental Technician

Signature: Larissa Farrell Date: 6/4/19

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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?	134 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ 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 ½-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	
Facility ID	
Application ID	

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: _7/18/2019_____

email: _lfarrell@logosresourcesllc.com_____ Telephone: __505-787-2027_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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: Env/Reg Technician

Signature: Larissa Farrell Date: 7/22/19

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

OCD Only

Received by: OCD Date: 7/22/19

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: Cory Date: 7/24/19

Printed Name: Cory Title: Environmental Specalist

LOGOS RESOURCES II, LLC

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

July 18, 2019

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

Re: NCS1915552540
Quinn 338 Remediation Activity
30-045-27798
Unit N, Sec. 18, T31N, R08W
San Juan County, NM

Dear Mr. Smith.

LOGOS Operating, LLC (LOGOS) excavated the mapped area of the Quinn 338 pipeline and replaced the portion of line. LOGOS initially sampled the area on 5/31/2019 to gather baseline data. LOGOS completed the excavation and replacement of the pipeline. LOGOS provided 48-hour sampling notification to the New Mexico Oil Conservation Division on June 2, 2019 to perform confirmation sampling at the site on June 5, 2019. The analysis showed that the closure criteria from NMAC 19.15.29.12 Table I were met. LOGOS tested the soil that was excavated for back fill on June 12, 2019 and the results showed that the closure criteria from NMAC 19.15.29.12 Table I were met. LOGOS proceeded to backfill the area and will continue with reclaiming the surface with approved seed mix. There is no records of groundwater through the New Mexico Water Rights Reporting System in Unit Section 18, T31N, R8W. (http://nmwrrs.ose.state.nm.us/nmwrrs/index.html website). The nearest cathodic well is located at the Quinn 341 which is at 6020' elevation and approximately 4791' from the Quinn 338. The cathodic protection well describes water depth at 100'. The Quinn 338 is at 6054' therefore the ground water depth is estimated at 134'.

Sincerely,

Larissa Farrell
Environmental/Regulatory Technician

Legend

Impacted Area

LOGOS Operating, LLC – Quinn 338 Pipeline
Scaled Site Map
Unit N, Section 18, T31N, R8W
San Juan County, NM

LOGOS RESOURCES II, LLC

#2 30-045-10490

109

#341 30-045-28453

0234W

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

Operator MERIDIAN OIL INC Location: Unit L Sec. 19 Twp 31 Rng 8

Name of Well/Wells or Pipeline Serviced QUINN #341; QUINN #2

Elevation 6020 Completion Date 7-25-91 Total Depth _____ Land Type F

Casing Strings, Sizes, Types & Depths 8" PVC 100'

If Casing Strings are cemented, show amounts & types used 22 SACKS NEAT CEMENT

If Cement or Bentonite Plugs have been placed, show depths & amounts used

No

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. FRESH H_2O 100'

Depths gas encountered: No

Ground bed depth with type & amount of coke breeze used: 364'; 47 SACKS of Asbury 4518 Flo Coke

Depths anodes placed: 345; 335; 325; 315; 305; 295; 284; 275; 258; 248; 210; 200

Depths vent pipes placed: 364'

Vent pipe perforations: FROM 64' TO BOTTOM

Remarks:

RECEIVED
FEB 24 1992
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
SJ 00012		SJ	SJ			2	30	31N	08W	258218	4084189*	2435	1021	475	546
SJ 03769 POD1		SJ	SJ	2	3	2	14	31N	09W	255236	4087366	2493	485	390	95
SJ 04122 POD1		SJ	SJ		3	2	12	31N	09W	256703	4089166	2770	650	560	90
SJ 04082 POD1		SJ	SJ							255709	4082014	4901	13	6	7
SJ 04082 POD2		SJ	SJ							255709	4082014	4901	15	6	9
SJ 04082 POD7		SJ	SJ							255671	4082025	4906	15	9	6
SJ 04082 POD3		SJ	SJ							255684	4082015	4910	13	6	7
SJ 04082 POD4		SJ	SJ							255684	4082015	4910	13	6	7
SJ 00013		SJ	SJ			3	10	31N	09W	253017	4088369*	4923	458		
SJ 00014		SJ	SJ			3	10	31N	09W	253017	4088369*	4923	462	312	150
SJ 04082 POD5		SJ	SJ							255684	4081984	4939	13	6	7
SJ 04082 POD6		SJ	SJ							255669	4081956	4971	15	9	6

Average Depth to Water: **162 feet**

Minimum Depth: **6 feet**

Maximum Depth: **560 feet**

Record Count: 12

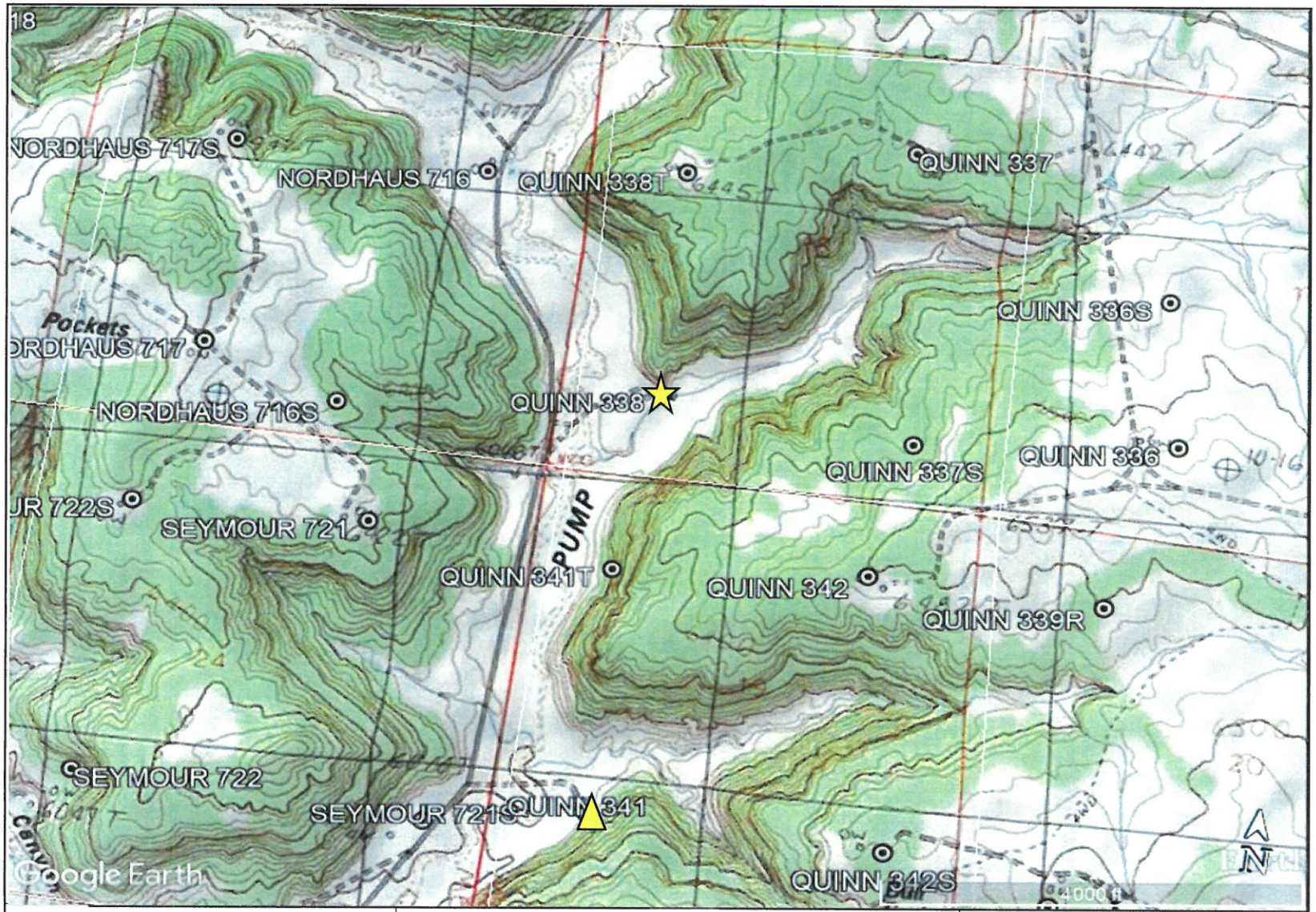
UTMNAD83 Radius Search (in meters):

Easting (X): 257588.98 **Northing (Y):** 4086541.77 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

7/18/19 10:26 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



Legend

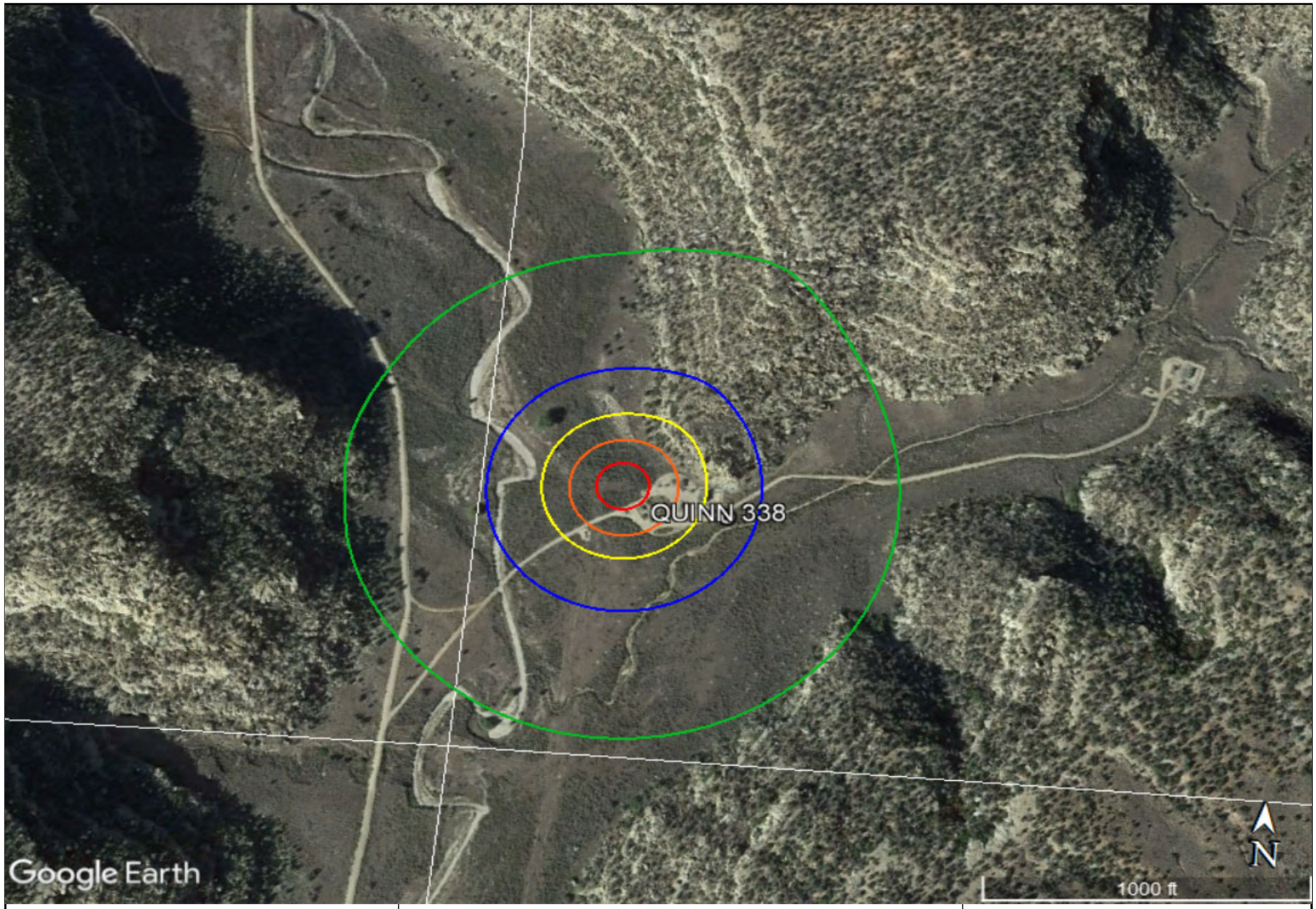
- 100′
- 200′
- 200′
- 200′
- 200′

Cathodic Well

Subject Well

LOGOS Operating, LLC – Quinn 338 Pipeline
Cathodic Well
Unit N, Section 18 , T31N, R8W
San Juan County, NM

LOGOS RESOURCES II, LLC

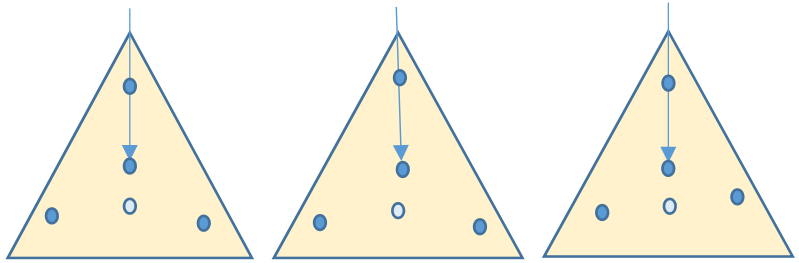


Legend

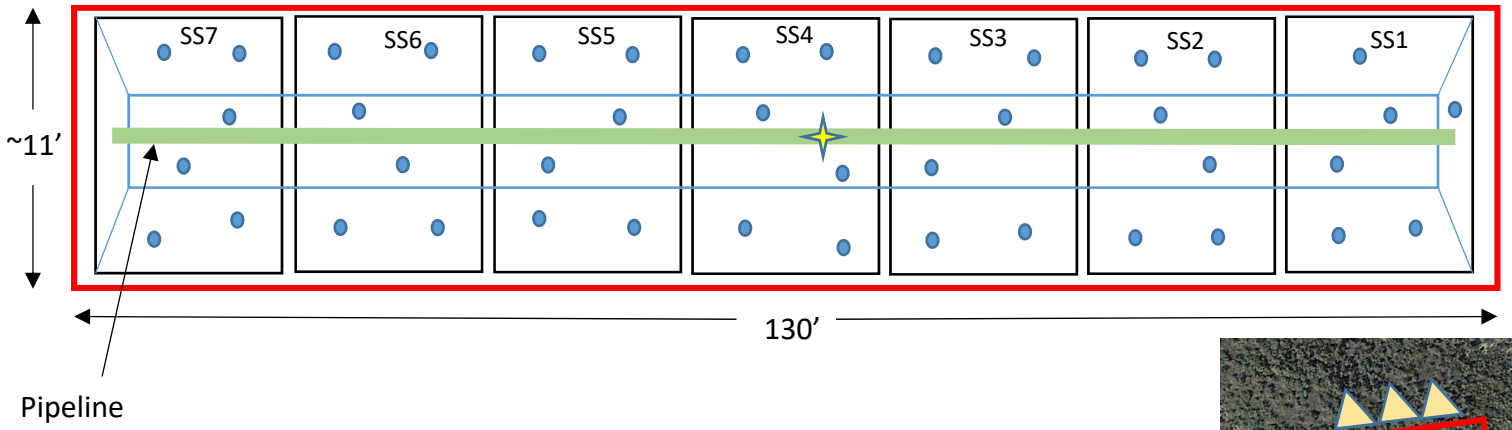
- 100’ Radius
- 200’ Radius
- 300’ Radius
- 500’ Radius
- 1000’ Radius

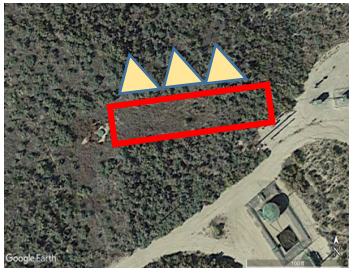
LOGOS Operating, LLC – Quinn 338 Pipeline
Hydrology Map
Unit N , Section 18 , T31N, R8W
San Juan County, NM

LOGOS RESOURCES II, LLC



Approximately 322 yd^3 of soil in stockpile.





Legend

Impacted Area
Sample point
Pinhole leak
Pipeline

LOGOS Operating, LLC – Quinn 338 Pipeline
Sampling Diagram
Unit N, Section 18, T31N, R8W
San Juan County, NM

LOGOS RESOURCES II, LLC

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Logos Operating, LLC

Samples Received: 6/12/2019
Job Number: 12035-0114
Work Order: P906049
Project Name/Location: Quinn 338

Report Reviewed By: _____ Date: 6/19/19

Walter Hinchman, Laboratory Director

NELAP ACCREDITED TNI LABORATORY

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:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP1	P906049-01A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
	P906049-01B	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
SP2	P906049-02A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
	P906049-02B	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
SP3	P906049-03A	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.
	P906049-03B	Soil	06/12/19	06/12/19	Glass Jar, 4 oz.

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

SP1

P906049-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*101 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Surrogate: n-Nonane		*99.5 %*		*50-200*	*1924028*	*06/12/19*	*06/13/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*98.8 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

SP2

P906049-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*101 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Surrogate: n-Nonane		*102 %*		*50-200*	*1924028*	*06/12/19*	*06/13/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.1 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

SP3

P906049-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*100 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1924028	06/12/19	06/13/19	EPA 8015D	
Surrogate: n-Nonane		*106 %*		*50-200*	*1924028*	*06/12/19*	*06/13/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1924018	06/12/19	06/14/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.8 %*		*50-150*	*1924018*	*06/12/19*	*06/14/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1925010	06/18/19	06/18/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

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
Batch 1924018 - Purge and Trap EPA 5030A										
Blank (1924018-BLK1)				Prepared: 06/12/19 1 Analyzed: 06/13/19 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	*7.76*		*"*	*8.00*		*97.0*	*50-150*			
LCS (1924018-BS1)				Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Benzene	4.38	0.0250	mg/kg	5.00		87.6	70-130			
Toluene	4.75	0.0250	"	5.00		95.0	70-130			
Ethylbenzene	4.69	0.0250	"	5.00		93.9	70-130			
p,m-Xylene	9.63	0.0500	"	10.0		96.3	70-130			
o-Xylene	4.70	0.0250	"	5.00		94.0	70-130			
Total Xylenes	14.3	0.0250	"	15.0		95.5	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.84*		*"*	*8.00*		*98.0*	*50-150*			
Matrix Spike (1924018-MS1)			**Source: P906039-01**	Prepared: 06/12/19 1 Analyzed: 06/13/19 2						
Benzene	4.49	0.0250	mg/kg	5.00	ND	89.8	54.3-133			
Toluene	4.87	0.0250	"	5.00	ND	97.5	61.4-130			
Ethylbenzene	4.81	0.0250	"	5.00	ND	96.3	61.4-133			
p,m-Xylene	9.87	0.0500	"	10.0	ND	98.7	63.3-131			
o-Xylene	4.82	0.0250	"	5.00	ND	96.4	63.3-131			
Total Xylenes	14.7	0.0250	"	15.0	ND	97.9	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*7.92*		*"*	*8.00*		*99.0*	*50-150*			
Matrix Spike Dup (1924018-MSD1)			**Source: P906039-01**	Prepared: 06/12/19 1 Analyzed: 06/13/19 2						
Benzene	4.55	0.0250	mg/kg	5.00	ND	91.0	54.3-133	1.31	20	
Toluene	4.94	0.0250	"	5.00	ND	98.9	61.4-130	1.41	20	
Ethylbenzene	4.90	0.0250	"	5.00	ND	98.0	61.4-133	1.72	20	
p,m-Xylene	10.0	0.0500	"	10.0	ND	100	63.3-131	1.76	20	
o-Xylene	4.90	0.0250	"	5.00	ND	97.9	63.3-131	1.61	20	
Total Xylenes	14.9	0.0250	"	15.0	ND	99.6	63.3-131	1.71	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.99*		*"*	*8.00*		*99.8*	*50-150*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

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
Batch 1924028 - DRO Extraction EPA 3570										
Blank (1924028-BLK1)				Prepared: 06/12/19 1 Analyzed: 06/14/19 1						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	*52.8*		*"*	*50.0*		*106*	*50-200*			
LCS (1924028-BS1)				Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Diesel Range Organics (C10-C28)	490	25.0	mg/kg	500		97.9	38-132			
Surrogate: n-Nonane	*52.8*		*"*	*50.0*		*106*	*50-200*			
Matrix Spike (1924028-MS1)	**Source: P906050-01**			Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Diesel Range Organics (C10-C28)	537	25.0	mg/kg	500	ND	107	38-132			
Surrogate: n-Nonane	*53.6*		*"*	*50.0*		*107*	*50-200*			
Matrix Spike Dup (1924028-MSD1)	**Source: P906050-01**			Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Diesel Range Organics (C10-C28)	529	25.0	mg/kg	500	ND	106	38-132	1.52	20	
Surrogate: n-Nonane	*52.7*		*"*	*50.0*		*105*	*50-200*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

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
Batch 1924018 - Purge and Trap EPA 5030A										
Blank (1924018-BLK1)				Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.13*		*"*	*8.00*		*102*	*50-150*			
LCS (1924018-BS2)				Prepared: 06/12/19 1 Analyzed: 06/13/19 1						
Gasoline Range Organics (C6-C10)	50.9	20.0	mg/kg	50.0		102	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.18*		*"*	*8.00*		*102*	*50-150*			
Matrix Spike (1924018-MS2)		**Source: P906039-01**		Prepared: 06/12/19 1 Analyzed: 06/14/19 0						
Gasoline Range Organics (C6-C10)	53.3	20.0	mg/kg	50.0	ND	107	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.99*		*"*	*8.00*		*99.9*	*50-150*			
Matrix Spike Dup (1924018-MSD2)		**Source: P906039-01**		Prepared: 06/12/19 1 Analyzed: 06/14/19 0						
Gasoline Range Organics (C6-C10)	53.1	20.0	mg/kg	50.0	ND	106	70-130	0.439	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.01*		*"*	*8.00*		*100*	*50-150*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

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
Batch 1925010 - Anion Extraction EPA 300.0/9056A										
Blank (1925010-BLK1)				Prepared & Analyzed: 06/18/19 1						
Chloride	ND	20.0	mg/kg							
LCS (1925010-BS1)				Prepared & Analyzed: 06/18/19 1						
Chloride	252	20.0	mg/kg	250		101	90-110			
Matrix Spike (1925010-MS1)		**Source: P906049-01**		Prepared: 06/18/19 1 Analyzed: 06/18/19 2						
Chloride	257	20.0	mg/kg	250	ND	103	80-120			
Matrix Spike Dup (1925010-MSD1)		**Source: P906049-01**		Prepared: 06/18/19 1 Analyzed: 06/18/19 2						
Chloride	257	20.0	mg/kg	250	ND	103	80-120	0.0740	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 my differ slightly.

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/19/19 14:04

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.

Chain of Custody

Page 1 of 1

Client:	Logos
Project:	Quinn 33H
Project Manager:	Larissa Farrell
Address:	
City, State, Zip	
Phone:	505 419-1100
Email:	lfarrell@logosresourcesllc.com

Report Attention

Report due by:	
Attention:	
Address:	
City, State, Zip	
Phone:	
Email:	

Lab Use Only

Lab WO#	P906049
Job Number	12035-0114

TAT: 1D, 3D

EPA Program: RCRA, CWA, SDWA

State: NM ✓, CO, UT, AZ

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
10:00	6/12/19	S	2	SP1	1	✓	✓	✓			✓		
10:15	6/12/19	S	2	SP2	2	✓	✓	✓			✓		
10:30	6/12/19	S	2	SP3	3	✓	✓	✓			✓		

Additional Instructions: STA

V.S 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 fraud and may be grounds for legal action. Sampled by: Larissa Farrell

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Larissa Farrell	6/12/19	12:15	Jessica A. Mattox	6/12/19	12:15
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

Received on ice: Y / N

T1 T2 T3

AVG Temp °C 4

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 samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

envirotech Analytical Laboratory
5796 US Highway 64, Farmington, NM 87401
24 Hour Emergency Response Phone (800) 362-1879
Ph (505) 632-1881 Fx (505) 632-1865
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labadmin@envirotech-inc.com

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Logos Operating, LLC

Samples Received: 6/5/2019
Job Number: 12035-0114
Work Order: P906017
Project Name/Location: Quinn 338

Report Reviewed By: _____ Date: 6/10/19

Walter Hinchman, Laboratory Director

NELAP ACCREDITED TNI LABORATORY

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.
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Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

envirotech
Analytical Laboratory

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SS1	P906017-01A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-01B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS2	P906017-02A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-02B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS3	P906017-03A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-03B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS4	P906017-04A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-04B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS5	P906017-05A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-05B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS6	P906017-06A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-06B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
SS7	P906017-07A	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.
	P906017-07B	Soil	06/05/19	06/05/19	Glass Jar, 4 oz.

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS1
P906017-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*98.6 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	**43.1**	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	**58.4**	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*107 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*100 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS2

P906017-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.4 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*107 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*100 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS3
P906017-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*98.2 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*103 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.8 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS4
P906017-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.7 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*99.5 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*100 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS5
P906017-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*100 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*101 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*101 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS6
P906017-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.8 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*103 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.8 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

SS7
P906017-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*99.1 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8021B*	
Nonhalogenated Organics by 8015 - DRO/ORO									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1923017	06/05/19	06/06/19	EPA 8015D	
Surrogate: n-Nonane		*106 %*		*50-200*	*1923017*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Nonhalogenated Organics by 8015 - GRO									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1923022	06/05/19	06/06/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*99.8 %*		*50-150*	*1923022*	*06/05/19*	*06/06/19*	*EPA 8015D*	
Anions by 300.0/9056A									
Chloride	ND	20.0	mg/kg	1	1923023	06/06/19	06/06/19	EPA 300.0/9056A	

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

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
Batch 1923022 - Purge and Trap EPA 5030A										
Blank (1923022-BLK1)				Prepared: 06/05/19 1 Analyzed: 06/06/19 2						
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	*7.91*		*"*	*8.00*		*98.8*	*50-150*			
LCS (1923022-BS1)				Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Benzene	4.39	0.0250	mg/kg	5.00		87.9	70-130			
Toluene	4.79	0.0250	"	5.00		95.7	70-130			
Ethylbenzene	4.77	0.0250	"	5.00		95.3	70-130			
p,m-Xylene	9.82	0.0500	"	10.0		98.2	70-130			
o-Xylene	4.77	0.0250	"	5.00		95.4	70-130			
Total Xylenes	14.6	0.0250	"	15.0		97.3	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*8.09*		*"*	*8.00*		*101*	*50-150*			
Matrix Spike (1923022-MS1)			**Source: P906013-01**	Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Benzene	4.54	0.0250	mg/kg	5.00	ND	90.8	54.3-133			
Toluene	4.95	0.0250	"	5.00	ND	99.0	61.4-130			
Ethylbenzene	4.96	0.0250	"	5.00	ND	99.1	61.4-133			
p,m-Xylene	10.2	0.0500	"	10.0	ND	102	63.3-131			
o-Xylene	4.93	0.0250	"	5.00	ND	98.5	63.3-131			
Total Xylenes	15.1	0.0250	"	15.0	ND	101	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	*7.83*		*"*	*8.00*		*97.8*	*50-150*			
Matrix Spike Dup (1923022-MSD1)			**Source: P906013-01**	Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Benzene	4.52	0.0250	mg/kg	5.00	ND	90.4	54.3-133	0.417	20	
Toluene	4.91	0.0250	"	5.00	ND	98.3	61.4-130	0.751	20	
Ethylbenzene	4.91	0.0250	"	5.00	ND	98.1	61.4-133	0.997	20	
p,m-Xylene	10.1	0.0500	"	10.0	ND	101	63.3-131	1.01	20	
o-Xylene	4.87	0.0250	"	5.00	ND	97.4	63.3-131	1.13	20	
Total Xylenes	15.0	0.0250	"	15.0	ND	99.8	63.3-131	1.05	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.69*		*"*	*8.00*		*96.1*	*50-150*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

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
Batch 1923017 - DRO Extraction EPA 3570										
Blank (1923017-BLK1)				Prepared: 06/05/19 0 Analyzed: 06/07/19 0						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	*56.4*		*"*	*50.0*		*113*	*50-200*			
LCS (1923017-BS1)				Prepared: 06/05/19 0 Analyzed: 06/07/19 0						
Diesel Range Organics (C10-C28)	470	25.0	mg/kg	500		94.0	38-132			
Surrogate: n-Nonane	*57.1*		*"*	*50.0*		*114*	*50-200*			
Matrix Spike (1923017-MS1)	**Source: P906008-01**			Prepared: 06/05/19 0 Analyzed: 06/07/19 0						
Diesel Range Organics (C10-C28)	1290	25.0	mg/kg	500	889	79.7	38-132			
Surrogate: n-Nonane	*70.7*		*"*	*50.0*		*141*	*50-200*			
Matrix Spike Dup (1923017-MSD1)	**Source: P906008-01**			Prepared: 06/05/19 0 Analyzed: 06/07/19 0						
Diesel Range Organics (C10-C28)	1090	25.0	mg/kg	500	889	39.4	38-132	17.0	20	
Surrogate: n-Nonane	*70.0*		*"*	*50.0*		*140*	*50-200*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

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
Batch 1923022 - Purge and Trap EPA 5030A										
Blank (1923022-BLK1)				Prepared: 06/05/19 1 Analyzed: 06/06/19 2						
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.17*		*"*	*8.00*		*102*	*50-150*			
LCS (1923022-BS2)				Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Gasoline Range Organics (C6-C10)	50.3	20.0	mg/kg	50.0		101	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*8.05*		*"*	*8.00*		*101*	*50-150*			
Matrix Spike (1923022-MS2)			**Source: P906013-01**	Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Gasoline Range Organics (C6-C10)	56.3	20.0	mg/kg	50.0	ND	113	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.95*		*"*	*8.00*		*99.4*	*50-150*			
Matrix Spike Dup (1923022-MSD2)			**Source: P906013-01**	Prepared: 06/05/19 1 Analyzed: 06/07/19 1						
Gasoline Range Organics (C6-C10)	56.3	20.0	mg/kg	50.0	ND	113	70-130	0.0718	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.92*		*"*	*8.00*		*99.0*	*50-150*			

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

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
Batch 1923023 - Anion Extraction EPA 300.0/9056A										
Blank (1923023-BLK1)				Prepared: 06/06/19 0 Analyzed: 06/06/19 1						
Chloride	ND	20.0	mg/kg							
LCS (1923023-BS1)				Prepared: 06/06/19 0 Analyzed: 06/06/19 1						
Chloride	254	20.0	mg/kg	250		102	90-110			
Matrix Spike (1923023-MS1)		**Source: P906016-01**		Prepared: 06/06/19 0 Analyzed: 06/06/19 1						
Chloride	682	20.0	mg/kg	250	395	115	80-120			
Matrix Spike Dup (1923023-MSD1)		**Source: P906016-01**		Prepared: 06/06/19 0 Analyzed: 06/06/19 1						
Chloride	761	20.0	mg/kg	250	395	146	80-120	11.0	20	SPK1

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 my differ slightly.

Logos Operating, LLC	Project Name:	Quinn 338	
PO Box 18	Project Number:	12035-0114	**Reported:**
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	06/10/19 10:45

Notes and Definitions

SPK1	The spike recovery is outside of quality control limits.
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.

Client: LOGOS Operating LLC	
Project: Quinn 338	
Project Manager: Larissa Farrell	
Address: 2010 Afton Pl	
City, State, Zip Farmington, NM 87401	
Phone: 505-419-1100	
Email: lfarrell@logosresourcesllc.com	

Report Attention

Report due by:	
Attention:	
Address:	
City, State, Zip	
Phone:	
Email:	

Lab Use Only

Lab WO#	Job Number	1D	3D
P 906017	12035-014		✓

TAT

EPA Program

RCRA	CWA	SDWA

State

NM	CO	UT	AZ
x			

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	Remarks
11:13	6/5/19	S	2	SS1	1	X	X	X			X	
11:33	6/5/19	S	2	SS2	2	X	X	X			X	
11:37	6/5/19	S	2	SS3	3	X	X	X			X	
11:40	6/5/19	S	2	SS4	4	X	X	X			X	
11:45	6/5/19	S	2	SS5	5	X	X	X			X	
11:45	6/5/19	S	2	SS6	6	X	X	X			X	
11:45	6/5/19	S	2	SS7	7	X	X	X			X	

Analysis and Method

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 fraud and may be grounds for legal action. Sampled by: Larissa Farrell

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	6/5/19	2:44p		6/5/19	14:44
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

Received on ice: (Y) / N

T1 T2 T3

AVG Temp °C 4

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 samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

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