



January 27, 2021

Mike Bratcher
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Revised Work Plan

Vasquez #001
RP#: 2RP-5702
Incident#: NRM1932257155
DOR: October 9, 2019
GPS: 32.2315331 -104.0559235
Unit Letter J, Section 11, Township 24 South, Range 28 East
Eddy County, New Mexico

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following work plan in response to a release that occurred at the Vasquez #001 tank battery. The release is located in Unit Letter J, Section 11, Township 24 South and Range 28 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.2315331 North and -104.0559235 West.

BACKGROUND

The release was discovered on October 9, 2019. A C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD). The initial C-141 is presented in Appendix A. Due to internal corrosion of a tank a release of approximately forty-two (42) barrels (bbls) of produced water occurred inside of the unlined containment. Fluid leached through the earthen berm and impacted the well pad adjacent to the containment.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) the nearest water well (321343104025801) is located approximately 0.4 miles southeast of the release site and indicates that groundwater in the project vicinity is approximately thirty-six (36) feet BGS. USGS water well information is shown in Appendix B.

A risk based evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation the area has a medium potential for cave karst, no other receptors (water

wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
Medium Karst	36 Feet

Delineation and Closure Criteria:

Recommended Remedial Action Levels (RRALs)	
Chlorides	600 mg/kg
TPH (GRO and DRO and MRO)	100 mg/kg
TPH (GRO and DRO)	N/A
Benzene	10 mg/kg
Total BTEX	50 mg/kg

ASSESSMENT

On May 15, 2020, a geo-probe was utilized to vertically delineate the impacted area adjacent to the containment and to collect background samples from the surrounding area.

On December 9, 2020, an air rotary drilling rig was utilized to vertically delineate the impacted area inside of the containment. Soil samples were collected utilizing a split-spoon at five (5) foot intervals. Following collection of the spit-spoon soil sample at fifteen (15) feet below ground surface (BGS) the soil boring was being vertically advanced when groundwater was encountered at approximately seventeen (17) feet BGS. Drilling operations were ceased and the boring was plugged with bentonite hole plug.

PROPOSED WORK PLAN

- In order to facilitate remediation, the tank battery will be relocated to another area on the well pad.
- To remove the source area, the impacted area within the unlined containment will be excavated to a depth of seventeen (17) feet BGS or until groundwater is encountered.
- Once removed, bottom hole samples will be collected from the excavation to determine if groundwater in the immediate area has been affected by the release.

- The impacted pad area surrounding the unlined containment will be excavated to a depth of three (3) feet BGS.
- The excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled with clean “like” material and contoured to match the surrounding terrain.

SAMPLING PLAN

Once the excavation is complete, confirmation soil samples will be collected from the excavated areas. To collect representative samples, composite samples (5-point composite) will be collected every two-hundred (200) square feet from the bottom and sidewalls of the excavated area. The soil samples will be laboratory analyzed for the constituents of concern. Discrete soil samples will be collected from the excavation if any “hot spots” are encountered during the excavation. If groundwater is encountered in the bottom of the excavation, bottom confirmation samples will be collected on a two-hundred (200) square foot as possible based on site conditions.

REMEDATION TIMEFRAME AND ESTIMATED VOLUME

The remediation will be performed 90 days after the work plan has been approved. Approximately one-thousand five-hundred (1,500) cubic yards of soil will be excavated and hauled offsite for proper disposal.

SITE RECLAMATION AND RESTORATION

All of the fluid remained on the well pad. No reclamation activities will be required at this site.

Should you have any questions or concerns on the proposed remediation activities, please do not hesitate to contact me.

Sincerely,

Sincerely,

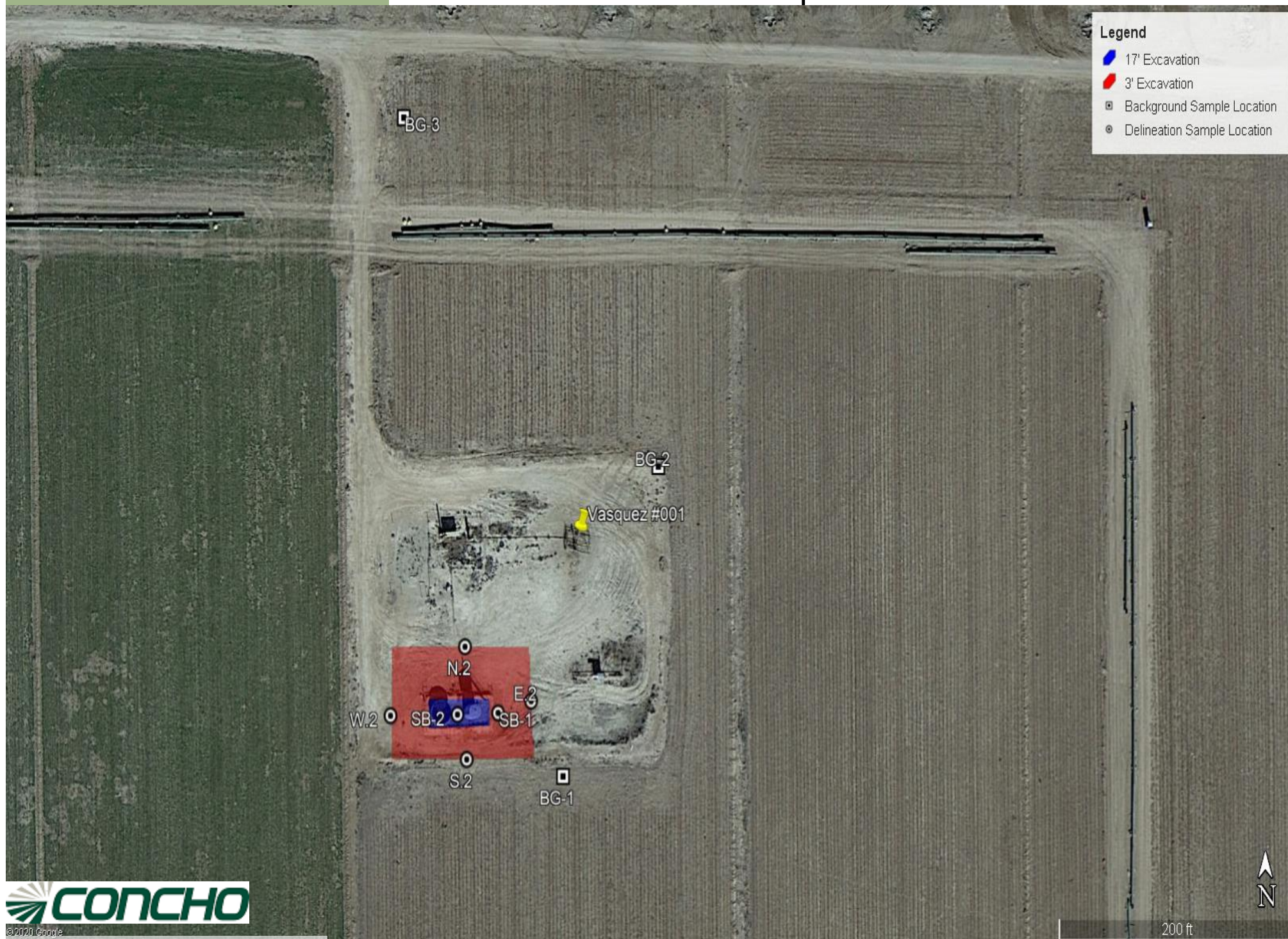


Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

FIGURES

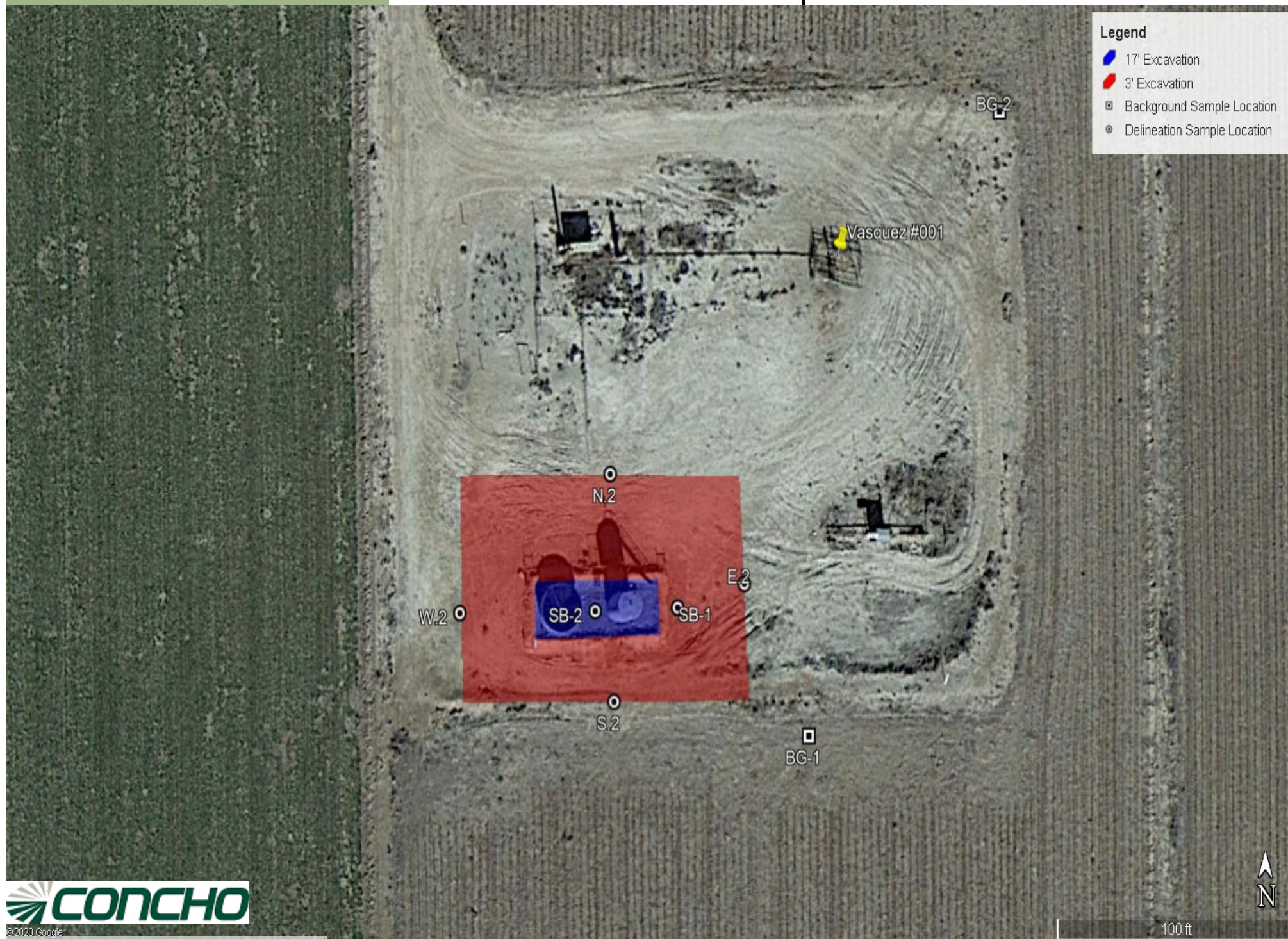
October 5, 2019

Vasquez #001



October 5, 2019

Vasquez #001



TABLES

Table 1
COG Operating LLC.
Vasquez #001
Eddy County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total			
NMOCD RRAL Limits (mg/kg)					-	-	-	2,500	-	-	1,000	10	50	20,000
SB-1	0-1	5/15/2020	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	4,800
SB-1	2	5/15/2020	X		#	#	#	#	#	#	#	#	#	1,070
SB-1	3	5/15/2020	X		#	#	#	#	#	#	#	#	#	368
SB-2	5	12/9/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	5,890
SB-2	10	12/9/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	3,990
SB-2	15	12/9/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	935
N. 2	0-0.5	1/14/2021	X		#	#	#	#	#	#	#	#	#	146
S.2	0-0.5	1/14/2021	X		#	#	#	#	#	#	#	#	#	280
E.2	0.0.5	1/14/2021	X		#	#	#	#	#	#	#	#	#	256
W.2	0-0.6	1/14/2021	X		#	#	#	#	#	#	#	#	#	339
BG-1	0-1	5/15/2020	X		#	#	#	#	#	#	#	#	#	80
BG-1	2	5/15/2020	X		#	#	#	#	#	#	#	#	#	80
BG-1	3	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
BG-1	4	5/15/2020	X		#	#	#	#	#	#	#	#	#	112
BG-1	5	5/15/2020	X		#	#	#	#	#	#	#	#	#	272
BG-1	6	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
BG-1 R	7	5/15/2020	X		#	#	#	#	#	#	#	#	#	80
BG-2	0-1	5/15/2020	X		#	#	#	#	#	#	#	#	#	112
BG-2	2	5/15/2020	X		#	#	#	#	#	#	#	#	#	128
BG-2	3	5/15/2020	X		#	#	#	#	#	#	#	#	#	128
BG-2	4	5/15/2020	X		#	#	#	#	#	#	#	#	#	112
BG-2	5	5/15/2020	X		#	#	#	#	#	#	#	#	#	144
BG-2	6	5/15/2020	X		#	#	#	#	#	#	#	#	#	144
BG-2	7	5/15/2020	X		#	#	#	#	#	#	#	#	#	144
BG-2	8	5/15/2020	X		#	#	#	#	#	#	#	#	#	64
BG-2	9	5/15/2020	X		#	#	#	#	#	#	#	#	#	288
BG-2	10	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
BG-2 R	11	5/15/2020	X		#	#	#	#	#	#	#	#	#	144
BG-3	0-1	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
BG-3	2	5/15/2020	X		#	#	#	#	#	#	#	#	#	112
BG-3	3	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
BG-3	4	5/15/2020	X		#	#	#	#	#	#	#	#	#	144
BG-3	5	5/15/2020	X		#	#	#	#	#	#	#	#	#	160
BG-3 R	6	5/15/2020	X		#	#	#	#	#	#	#	#	#	96
Avg BG Chloride	126.01													

Proposed Excavation Depth
 (#) Not Analyzed

APPENDIX A

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	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

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

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (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		

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 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 type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input 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: _____	Title: _____
Signature: <u>Sheldon Nitan</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input 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 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

Page 4

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: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

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.

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: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: [Signature] Date: 06-17-2021

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: _____ Title: _____

Signature: Sheldon Hittman Date: _____

email: _____ Telephone: _____

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.

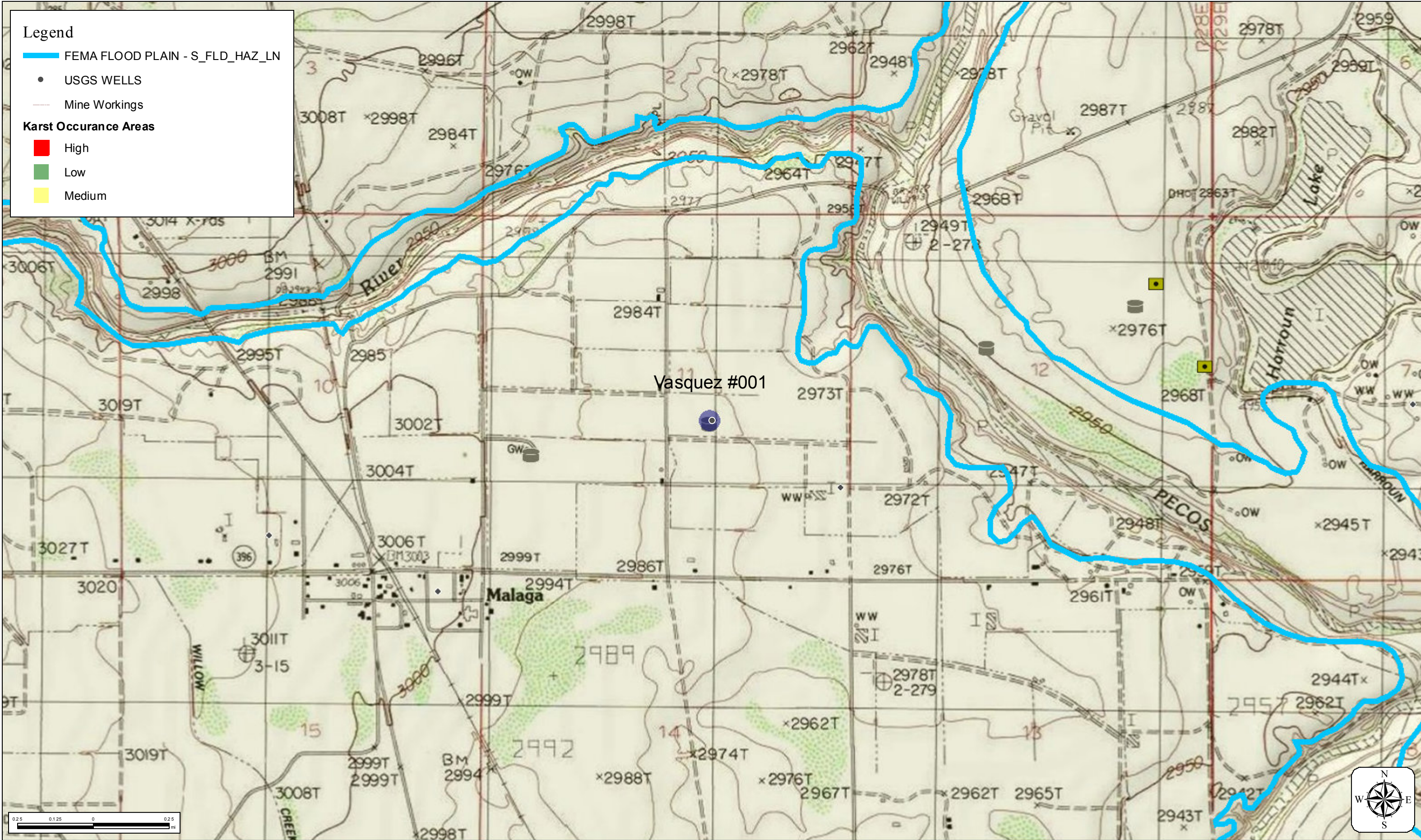
Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

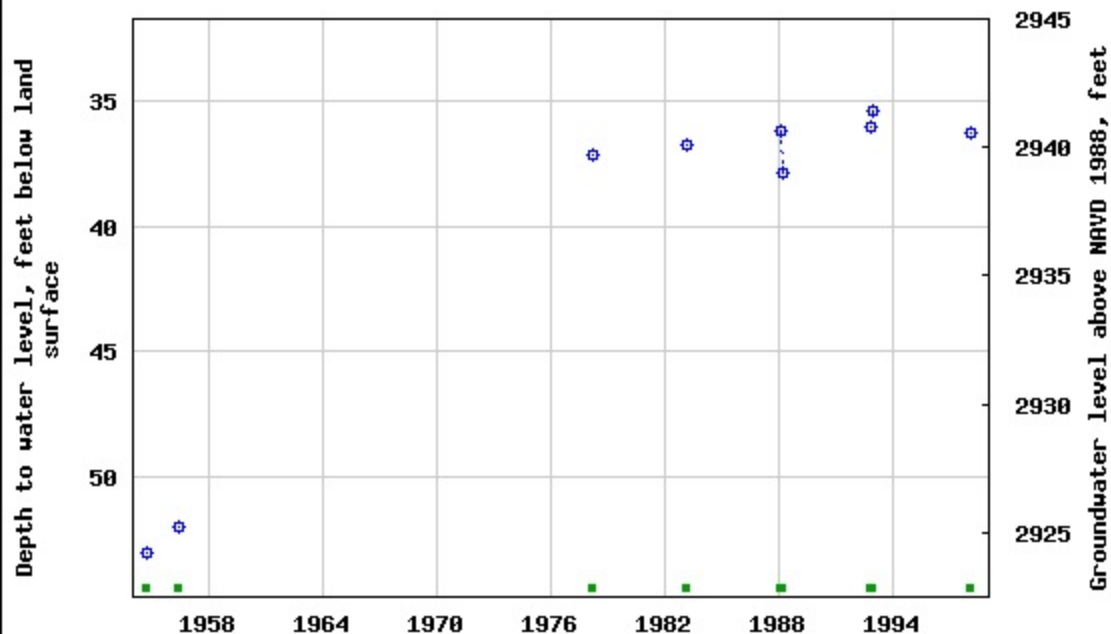
APPENDIX B



Vasquez #001



USGS 321343104025801 24S.28E.11.44211



APPENDIX C



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 21, 2020

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VASQUEZ #001

Enclosed are the results of analyses for samples received by the laboratory on 05/20/20 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TALON LPE
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 05/20/2020
Reported: 05/21/2020
Project Name: VASQUEZ #001
Project Number: NONE GIVEN
Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SB - 1 0-1' (H001382-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2020	ND	1.92	95.8	2.00	6.49	
Toluene*	<0.050	0.050	05/20/2020	ND	1.96	97.8	2.00	6.73	
Ethylbenzene*	<0.050	0.050	05/20/2020	ND	2.01	101	2.00	6.95	
Total Xylenes*	<0.150	0.150	05/20/2020	ND	5.87	97.8	6.00	7.05	
Total BTEX	<0.300	0.300	05/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4800	16.0	05/21/2020	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/20/2020	ND	190	95.0	200	1.97	
DRO >C10-C28*	<10.0	10.0	05/20/2020	ND	186	93.1	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	05/20/2020	ND					

Surrogate: 1-Chlorooctane 85.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.8 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TALON LPE
 DAVID ADKINS
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

Received: 05/20/2020
 Reported: 05/21/2020
 Project Name: VASQUEZ #001
 Project Number: NONE GIVEN
 Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SB - 1 2' (H001382-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1070	16.0	05/21/2020	ND	432	108	400	0.00		

Sample ID: SB - 1 3' (H001382-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	05/21/2020	ND	432	108	400	0.00	

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 21, 2020

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VASQUEZ #001

Enclosed are the results of analyses for samples received by the laboratory on 05/20/20 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TALON LPE
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	05/20/2020	Sampling Date:	05/15/2020
Reported:	05/21/2020	Sampling Type:	Soil
Project Name:	VASQUEZ #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - SHELDON H.		

Sample ID: BG - 1 0-1' (H001380-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 1 2' (H001380-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 1 3' (H001380-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 1 4' (H001380-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/21/2020	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TALON LPE
 DAVID ADKINS
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

Received: 05/20/2020
 Reported: 05/21/2020
 Project Name: VASQUEZ #001
 Project Number: NONE GIVEN
 Project Location: COG - SHELDON H.

Sampling Date: 05/15/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BG - 1 5' (H001380-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	05/21/2020	ND	432	108	400	0.00		

Sample ID: BG - 1 6' (H001380-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	05/21/2020	ND	432	108	400	0.00		

Sample ID: BG - 1 7' R (H001380-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/21/2020	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

5 of 5 pages



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Talon LPB		BILL TO		ANALYSIS REQUEST																																					
Project Manager: D. ADKINS		P.O. #:																																							
Address: 408 W. Texas Ave.		Company: COG																																							
City: Antesia		Attn: Sheldon Hittcock																																							
State: NM Zip: 88210		Address:																																							
Phone #:		City:																																							
Fax #:		State:																																							
Project #:		Zip:																																							
Project Name: Vasquez #001		Phone #:																																							
Project Location: Giddy D, NM		Fax #:																																							
Sampler Name: M. Collier																																									
FOR LAB USE ONLY																																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME		TOTAL CHLORIDES											
1 H001380		BG-1 0-1'		61		1		1		1		1		1		1		1		1		1		1		1		5/15/20		1											
2 BG-1 2'																																									
3 BG-1 3'																																									
4 BG-1 4'																																									
5 BG-1 5'																																									
6 BG-1 6'																																									
7 BG-1 7' R																																									

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Relinquished By: **M. Collier** Date: **5-20-20** Time: **12:27** Received By: **Sheldon Hittcock** Date: **5-20-20** Time: **14:30**

Delivered By: (Circle One) **UPS** **4.3c #113** Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No CHECKED BY: **Y. S.**

Sampler - UPS - Bus - Other: **4.3c #113**

Phone Result: ☐ Yes ☐ No Add'l Phone #: **818 1.**

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 21, 2020

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VASQUEZ #001

Enclosed are the results of analyses for samples received by the laboratory on 05/20/20 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

TALON LPE
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 05/20/2020
Reported: 05/21/2020
Project Name: VASQUEZ #001
Project Number: NONE GIVEN
Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BG - 2 0-1' (H001384-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 2' (H001384-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 3' (H001384-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 4' (H001384-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/21/2020	ND	400	100	400	7.69	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TALON LPE
 DAVID ADKINS
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

Received: 05/20/2020
 Reported: 05/21/2020
 Project Name: VASQUEZ #001
 Project Number: NONE GIVEN
 Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BG - 2 5' (H001384-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	05/21/2020	ND	400	100	400	7.69		

Sample ID: BG - 2 6' (H001384-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 7' (H001384-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 8' (H001384-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 9' (H001384-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	05/21/2020	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TALON LPE
 DAVID ADKINS
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

Received: 05/20/2020
 Reported: 05/21/2020
 Project Name: VASQUEZ #001
 Project Number: NONE GIVEN
 Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BG - 2 10' (H001384-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/21/2020	ND	400	100	400	7.69	

Sample ID: BG - 2 11' R (H001384-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/21/2020	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

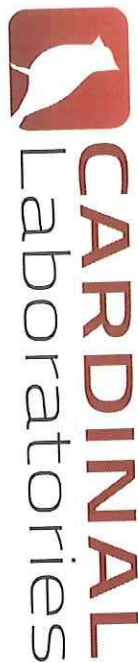
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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

[illegible]



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 21, 2020

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: VASQUEZ #001

Enclosed are the results of analyses for samples received by the laboratory on 05/20/20 14:39.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TALON LPE
DAVID ADKINS
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 05/20/2020
Reported: 05/21/2020
Project Name: VASQUEZ #001
Project Number: NONE GIVEN
Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BG - 3 0-1' (H001381-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 3 2' (H001381-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 3 3' (H001381-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/21/2020	ND	432	108	400	0.00	

Sample ID: BG - 3 4' (H001381-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/21/2020	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TALON LPE
 DAVID ADKINS
 408 W. TEXAS AVE.
 ARTESIA NM, 88210
 Fax To: (575) 745-8905

Received: 05/20/2020
 Reported: 05/21/2020
 Project Name: VASQUEZ #001
 Project Number: NONE GIVEN
 Project Location: COG - EDDY CO

Sampling Date: 05/15/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BG - 3 5' (H001381-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	05/21/2020	ND	432	108	400	0.00		

Sample ID: BG - 3 6' R (H001381-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	05/21/2020	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

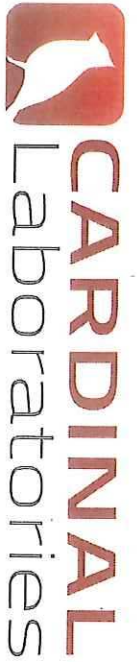
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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Talon / LPS</u>		BILL TO		ANALYSIS REQUEST									
Project Manager: <u>D. ADKINS</u>		P.O. #:											
Address: <u>408 W. Teyal Ave.</u>		Company: <u>CGC</u>											
City: <u>Artesia</u>		Attn: <u>Sheldon Hitchcock</u>											
State: <u>NM</u>		Zip: <u>88210</u>											
Phone #:		Fax #:											
Project #:		Project Owner: <u>COG</u>											
Project Name: <u>Vasquez # 001</u>		City:											
Project Location: <u>Eddy Co, NM</u>		State: Zip:											
Sampler Name: <u>M. Collier</u>		Phone #:											
Fax #:													

[illegible]

Unpublished Rev.	Date	Revised By
<p>PLEASE NOTE: Liability and Damages: Cardinal's liability and clients' exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>		

Relinquished By:	Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
	Time:			Fax Result:	<input type="checkbox"/> Yes	
Relinquished By:	Date:	Received By:	REMARKS:			
Time:			P. 1 of 1.			
Time:						
Delivered By: (Circle One)	Sample Condition		CHECKED BY: (Initials)			
Sampler - UPS - Bus - Other:	Cool		Yes <input type="checkbox"/> No <input type="checkbox"/>			
	Intact		Yes <input type="checkbox"/> No <input type="checkbox"/>			

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

Certificate of Analysis Summary 680392

COG Operating LLC, Artesia, NM

Project Name: Vasquez #001

Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy County, New Mexico

Date Received in Lab: Wed 12.09.2020 10:40

Report Date: 12.10.2020 12:56

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	680392-001	680392-002	680392-003			
	Field Id:	SB-2 5'	SB-2 10'	SB-2 15'			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	12.09.2020 09:30	12.09.2020 09:50	12.09.2020 10:10			
BTEX by EPA 8021B	Extracted:	12.09.2020 17:09	12.09.2020 17:09	12.09.2020 17:09			
	Analyzed:	12.09.2020 19:07	12.09.2020 19:29	12.09.2020 19:52			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202			
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202			
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202			
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403	<0.00403 0.00403			
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202			
Total Xylenes		<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020			
Total BTEX		<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020			
Chloride by EPA 300	Extracted:	12.09.2020 11:12	12.09.2020 11:12	12.09.2020 11:12			
	Analyzed:	12.09.2020 15:48	12.09.2020 15:54	12.09.2020 15:59			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		5890 49.9	3990 50.1	935 50.4			
TPH By SW8015 Mod	Extracted:	12.09.2020 17:06	12.09.2020 17:06	12.09.2020 17:06			
	Analyzed:	12.09.2020 19:23	12.09.2020 20:23	12.09.2020 20:43			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons		<49.8 49.8	<50.2 50.2	<50.2 50.2			
Diesel Range Organics		<49.8 49.8	<50.2 50.2	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.2 50.2	<50.2 50.2			
Total TPH		<49.80 49.80	<50.20 50.20	<50.20 50.20			

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico





Analytical Report 680392

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Vasquez #001

12.10.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.10.2020

Project Manager: **Sheldon Hitchcock**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: Eurofins Xenco, LLC Report No(s): **680392**

Vasquez #001

Project Address: Eddy County, New Mexico

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 680392. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 680392 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-2 5'	S	12.09.2020 09:30		680392-001
SB-2 10'	S	12.09.2020 09:50		680392-002
SB-2 15'	S	12.09.2020 10:10		680392-003



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Vasquez #001

Project ID:

Work Order Number(s): 680392

Report Date: 12.10.2020

Date Received: 12.09.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 5'**
Lab Sample Id: 680392-001

Matrix: Soil
Date Collected: 12.09.2020 09:30

Date Received: 12.09.2020 10:40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 11:12

% Moisture:
Basis: Wet Weight

Seq Number: 3144392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5890	49.9	mg/kg	12.09.2020 15:48		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 12.09.2020 17:06

% Moisture:
Basis: Wet Weight

Seq Number: 3144397

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	12.09.2020 19:23	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8	mg/kg	12.09.2020 19:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.09.2020 19:23	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	12.09.2020 19:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	12.09.2020 19:23	
o-Terphenyl	84-15-1	104	%	70-135	12.09.2020 19:23	



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 5'**
Lab Sample Id: 680392-001

Matrix: Soil
Date Collected: 12.09.2020 09:30

Date Received: 12.09.2020 10:40

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 17:09

% Moisture:
Basis: Wet Weight

Seq Number: 3144398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.09.2020 19:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.09.2020 19:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.09.2020 19:07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.09.2020 19:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.09.2020 19:07	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.09.2020 19:07	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.09.2020 19:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	12.09.2020 19:07	
4-Bromofluorobenzene	460-00-4	120	%	70-130	12.09.2020 19:07	



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 10'**
Lab Sample Id: 680392-002

Matrix: Soil
Date Collected: 12.09.2020 09:50

Date Received: 12.09.2020 10:40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 11:12

% Moisture:
Basis: Wet Weight

Seq Number: 3144392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3990	50.1	mg/kg	12.09.2020 15:54		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 12.09.2020 17:06

% Moisture:
Basis: Wet Weight

Seq Number: 3144397

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2	mg/kg	12.09.2020 20:23	U	1
Diesel Range Organics	C10C28DRO	<50.2	50.2	mg/kg	12.09.2020 20:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.09.2020 20:23	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	12.09.2020 20:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.09.2020 20:23	
o-Terphenyl	84-15-1	117	%	70-135	12.09.2020 20:23	



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 10'**
Lab Sample Id: 680392-002

Matrix: Soil
Date Collected: 12.09.2020 09:50

Date Received: 12.09.2020 10:40

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 17:09

% Moisture:
Basis: Wet Weight

Seq Number: 3144398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.09.2020 19:29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.09.2020 19:29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.09.2020 19:29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.09.2020 19:29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.09.2020 19:29	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	12.09.2020 19:29	U	1
Total BTEX		<0.002020	0.002020	mg/kg	12.09.2020 19:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	12.09.2020 19:29		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.09.2020 19:29		



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 15'**
Lab Sample Id: 680392-003

Matrix: Soil
Date Collected: 12.09.2020 10:10

Date Received: 12.09.2020 10:40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 11:12

% Moisture:
Basis: Wet Weight

Seq Number: 3144392

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	935	50.4	mg/kg	12.09.2020 15:59		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 12.09.2020 17:06

% Moisture:
Basis: Wet Weight

Seq Number: 3144397

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.2	50.2	mg/kg	12.09.2020 20:43	U	1
Diesel Range Organics	C10C28DRO	<50.2	50.2	mg/kg	12.09.2020 20:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.09.2020 20:43	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	12.09.2020 20:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.09.2020 20:43	
o-Terphenyl	84-15-1	109	%	70-135	12.09.2020 20:43	



Certificate of Analytical Results 680392

COG Operating LLC, Artesia, NM

Vasquez #001

Sample Id: **SB-2 15'**
Lab Sample Id: 680392-003

Matrix: Soil
Date Collected: 12.09.2020 10:10

Date Received: 12.09.2020 10:40

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.09.2020 17:09

% Moisture:
Basis: Wet Weight

Seq Number: 3144398

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.09.2020 19:52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.09.2020 19:52	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.09.2020 19:52	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.09.2020 19:52	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.09.2020 19:52	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	12.09.2020 19:52	U	1
Total BTEX		<0.002020	0.002020	mg/kg	12.09.2020 19:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	12.09.2020 19:52		
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.09.2020 19:52		

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



COG Operating LLC

Vasquez #001

Analytical Method: Chloride by EPA 300

Seq Number: 3144392

MB Sample Id: 7716778-1-BLK

Matrix: Solid

LCS Sample Id: 7716778-1-BKS

Prep Method: E300P

Date Prep: 12.09.2020

LCSD Sample Id: 7716778-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	243	97	244	98	90-110	0	20	mg/kg	12.09.2020 11:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3144392

Parent Sample Id: 680289-001

Matrix: Soil

MS Sample Id: 680289-001 S

Prep Method: E300P

Date Prep: 12.09.2020

MSD Sample Id: 680289-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	130	199	330	101	331	101	90-110	0	20	mg/kg	12.09.2020 12:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3144392

Parent Sample Id: 680291-005

Matrix: Soil

MS Sample Id: 680291-005 S

Prep Method: E300P

Date Prep: 12.09.2020

MSD Sample Id: 680291-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.1	201	202	100	204	101	90-110	1	20	mg/kg	12.09.2020 13:21	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3144397

MB Sample Id: 7716775-1-BLK

Matrix: Solid

LCS Sample Id: 7716775-1-BKS

Prep Method: SW8015P

Date Prep: 12.09.2020

LCSD Sample Id: 7716775-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<50.0	1000	1080	108	991	99	70-135	9	35	mg/kg	12.09.2020 18:42	
Diesel Range Organics	<50.0	1000	997	100	1160	116	70-135	15	35	mg/kg	12.09.2020 18:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		104		114		70-135	%	12.09.2020 18:42
o-Terphenyl	99		112		122		70-135	%	12.09.2020 18:42

Analytical Method: TPH By SW8015 Mod

Seq Number: 3144397

Matrix: Solid

MB Sample Id: 7716775-1-BLK

Prep Method: SW8015P

Date Prep: 12.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.09.2020 18:22	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * | (C - E) / (C + E) |$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



COG Operating LLC

Vasquez #001

Analytical Method: TPH By SW8015 Mod

Seq Number: 3144397

Parent Sample Id: 680392-001

Matrix: Soil

MS Sample Id: 680392-001 S

Prep Method: SW8015P

Date Prep: 12.09.2020

MSD Sample Id: 680392-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<50.3	1010	1130	112	1050	105	70-135	7	35	mg/kg	12.09.2020 19:43	
Diesel Range Organics	<50.3	1010	1020	101	982	98	70-135	4	35	mg/kg	12.09.2020 19:43	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		114		70-135	%	12.09.2020 19:43
o-Terphenyl	113		107		70-135	%	12.09.2020 19:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144398

MB Sample Id: 7716777-1-BLK

Matrix: Solid

LCS Sample Id: 7716777-1-BKS

Prep Method: SW5035A

Date Prep: 12.09.2020

LCSD Sample Id: 7716777-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.102	102	70-130	1	35	mg/kg	12.09.2020 17:02	
Toluene	<0.00200	0.100	0.0953	95	0.0979	98	70-130	3	35	mg/kg	12.09.2020 17:02	
Ethylbenzene	<0.00200	0.100	0.0982	98	0.101	101	71-129	3	35	mg/kg	12.09.2020 17:02	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.204	102	70-135	1	35	mg/kg	12.09.2020 17:02	
o-Xylene	<0.00200	0.100	0.0992	99	0.0999	100	71-133	1	35	mg/kg	12.09.2020 17:02	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		104		100		70-130	%	12.09.2020 17:02
4-Bromofluorobenzene	116		110		113		70-130	%	12.09.2020 17:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144398

Parent Sample Id: 680392-001

Matrix: Soil

MS Sample Id: 680392-001 S

Prep Method: SW5035A

Date Prep: 12.09.2020

MSD Sample Id: 680392-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0975	98	0.0825	83	70-130	17	35	mg/kg	12.09.2020 17:47	
Toluene	<0.00200	0.0998	0.0928	93	0.0754	75	70-130	21	35	mg/kg	12.09.2020 17:47	
Ethylbenzene	<0.00200	0.0998	0.0943	94	0.0749	75	71-129	23	35	mg/kg	12.09.2020 17:47	
m,p-Xylenes	<0.00399	0.200	0.192	96	0.152	76	70-135	23	35	mg/kg	12.09.2020 17:47	
o-Xylene	<0.00200	0.0998	0.0943	94	0.0746	75	71-133	23	35	mg/kg	12.09.2020 17:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		95		70-130	%	12.09.2020 17:47
4-Bromofluorobenzene	115		115		70-130	%	12.09.2020 17:47

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 12.09.2020 10.40.00 AM

Work Order #: 680392

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6* Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
	Samples received in bulk containers.
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

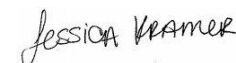
Checklist completed by:



Cloe Clifton

Date: 12.09.2020

Checklist reviewed by:



Jessica Kramer

Date: 12.09.2020

Certificate of Analysis Summary 684707

COG Operating LLC, Artesia, NM

Project Name: Vasenez #1

Project Id:

Date Received in Lab: Thu 01.14.2021 13:53

Contact: Ike Tavarez

Report Date: 01.15.2021 14:37


Project Location: Eddy County, New Mexico

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	684707-001	684707-002	684707-003	684707-004		
	Field Id:	N.2 0-0.5'	S.2 0-0.5'	E.2 0-0.5'	W.2 0-0.5'		
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	01.14.2021 13:15	01.14.2021 13:20	01.14.2021 13:25	01.14.2021 13:30		
Chloride by EPA 300	Extracted:	01.15.2021 08:59	01.15.2021 08:59	01.15.2021 08:59	01.15.2021 08:59		
	Analyzed:	01.15.2021 10:48	01.15.2021 10:54	01.15.2021 10:59	01.15.2021 11:05		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		146 50.4	280 50.2	256 49.5	339 50.2		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico





Analytical Report 684707

for

COG Operating LLC

Project Manager: Ike Tavaréz

Vasenez #1

01.15.2021

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



01.15.2021

Project Manager: **Ike Tavaréz**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: Eurofins Xenco, LLC Report No(s): **684707**

Vasenez #1

Project Address: Eddy County, New Mexico

Ike Tavaréz:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 684707. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 684707 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 684707****COG Operating LLC, Artesia, NM**

Vasenez #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N.2 0-0.5'	S	01.14.2021 13:15		684707-001
S.2 0-0.5'	S	01.14.2021 13:20		684707-002
E.2 0-0.5'	S	01.14.2021 13:25		684707-003
W.2 0-0.5'	S	01.14.2021 13:30		684707-004



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Vasenez #1

Project ID:

Work Order Number(s): 684707

Report Date: 01.15.2021

Date Received: 01.14.2021

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

**Certificate of Analytical Results 684707****COG Operating LLC, Artesia, NM**

Vasenez #1

Sample Id: **N.2 0-0.5'**
Lab Sample Id: 684707-001

Matrix: Soil
Date Collected: 01.14.2021 13:15

Date Received: 01.14.2021 13:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 01.15.2021 08:59

% Moisture:
Basis: Wet Weight

Seq Number: 3147928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	146	50.4	mg/kg	01.15.2021 10:48		5



Certificate of Analytical Results 684707

COG Operating LLC, Artesia, NM

Vasenez #1

Sample Id: **S.2 0-0.5'**
Lab Sample Id: 684707-002

Matrix: Soil
Date Collected: 01.14.2021 13:20

Date Received: 01.14.2021 13:53

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 01.15.2021 08:59

% Moisture:
Basis: Wet Weight

Seq Number: 3147928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	280	50.2	mg/kg	01.15.2021 10:54		5

**Certificate of Analytical Results 684707****COG Operating LLC, Artesia, NM**

Vasenez #1

Sample Id: **E.2 0-0.5'**

Matrix: Soil

Date Received: 01.14.2021 13:53

Lab Sample Id: 684707-003

Date Collected: 01.14.2021 13:25

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 01.15.2021 08:59

% Moisture:

Seq Number: 3147928

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	256	49.5	mg/kg	01.15.2021 10:59		5



Certificate of Analytical Results 684707

COG Operating LLC, Artesia, NM

Vasenez #1

Sample Id: **W.2 0-0.5'**

Matrix: Soil

Date Received: 01.14.2021 13:53

Lab Sample Id: 684707-004

Date Collected: 01.14.2021 13:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 01.15.2021 08:59

% Moisture:

Seq Number: 3147928

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	339	50.2	mg/kg	01.15.2021 11:05		5

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



COG Operating LLC

Vasenez #1

Analytical Method: Chloride by EPA 300

Seq Number: 3147928

MB Sample Id: 7719205-1-BLK

Matrix: Solid

LCS Sample Id: 7719205-1-BKS

Prep Method: E300P

Date Prep: 01.15.2021

LCSD Sample Id: 7719205-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	200	215	108	205	103	90-110	5	20	mg/kg	01.15.2021 08:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3147928

Parent Sample Id: 684657-001

Matrix: Soil

MS Sample Id: 684657-001 S

Prep Method: E300P

Date Prep: 01.15.2021

MSD Sample Id: 684657-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	98.7	202	306	103	304	102	90-110	1	20	mg/kg	01.15.2021 09:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3147928

Parent Sample Id: 684707-004

Matrix: Soil

MS Sample Id: 684707-004 S

Prep Method: E300P

Date Prep: 01.15.2021

MSD Sample Id: 684707-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	339	198	537	100	549	107	90-110	2	20	mg/kg	01.15.2021 11:11	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Analysis Request of Chain of Custody Record



One Concho Center/600 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

Page 1 of 1

Client Name:

COG-Artesia

Site Manager:

Sheldon Hitchcock

Project Name:

Vasquez #2

Project Location: (county,
state)

Eddy, NM

Project #:

Invoice to:

Sheldon Hitchcock

Receiving Laboratory:

Xero

Sampler Name:

Sheldon Hitchcock

Comments:

SAMPLE IDENTIFICATION

LAB #
(LAB USE ONLY)

SAMPLING

YEAR: 2021

DATE

TIME

MATRIX

PRESERVATIVE METHOD

CONTAINERS

(C)omposite/(G)rab

TPH 8015M (GRO - DRO - MRO)

BTX 8021B

Chloride

ANALYSIS REQUEST
(Circle or Specify Method No.)

Hold

Inquired by:

Date: Time:

Received by:

Date: Time:

Inquired by:

Date: Time:

Received by:

Date: Time:

Inquired by:

Date: Time:

Received by:

Date: Time:

LAB USE ONLY

Sample Temperature

0.4/0.2

REMARKS:

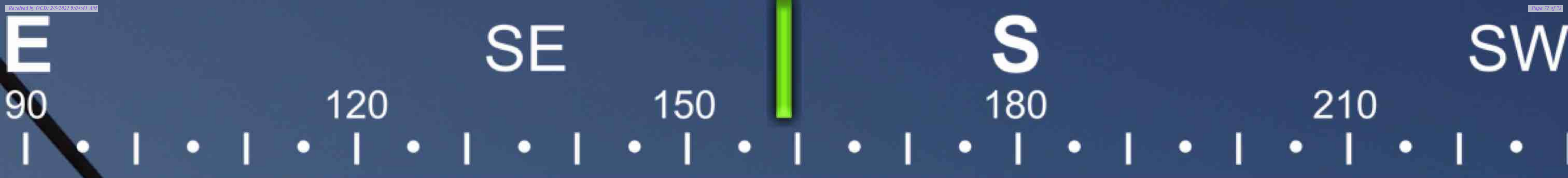
☒ RUSH: Same Day 24 hr 48 hr 72 hr☐ Rush Charges Authorized☐ Special Report Limits or TRRP Report

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

1084707

APPENDIX D



☼ 159°S (T) ● 32°13.877', -104°3.375' ±16ft ▲ 2967ft

COG OPERATING LLC

VASQUEZ #1

UL J SEC.11-T24S-R28E

2310' FSL & 1980' FEL

EDDY COUNTY, NM

API #30-015-23850



☼ 202°S (T) ● 32°13.880', -104°3.370' ±16ft ▲ 2999ft



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 17133

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 17133
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
ceads	Confirmation samples will be analyzed for all constituents in Table I of 19.15.29.12 NMAC.	6/17/2021