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**APPROVED**

**By Olivia Yu at 10:09 am, Sep 12, 2018**

**NMOCD approves  
1RP-4667 for closure.**

February 27, 2018

Olivia Yu  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division, District 1  
1625 French Drive  
Hobbs, NM 88240

Mark Naranjo  
Roswell Field Office  
New Mexico State Land Office  
1001 South Atkinson Ave.  
Roswell, NM 88203

**Re: Remediation Summary and Closure Report  
Jaguar 18 State #002H  
API No. 30-025-41428  
GPS: 32.29842, -103.61335  
UL "N", Sec. 18, T23S, R33E  
Lea Co, NM  
NMOCD Ref. No. 1RP-4667**

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Closure Report* for the release site known as the Jaguar 18 State #002H. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release:	Crude Oil and Produced Water	Volume of Release: 15 bbls Oil, 25 bbls Produced Water	
		Volume Recovered: 10 bbls Oil, 20 bbls Produced Water	
Source of Release:	Wellhead	Date of Release: 03/29/17	Date of Discovery: 03/29/17
Was Immediate Notice Given?	Yes	If YES, to Whom? NMOCD DistictI/NMSLO	
Was a Watercource Reached?	No	Volume Impacted the Watercourse: Not Applicable	
Cause of Problem and Remedial Action Taken:			
The release was attributed to a valve failing to be closed completely.			

A Site Location Map is provided as Attachment #1. A copy of the initial Release Notification and Corrective Action (NMOCD Form C-141) is provided as Attachment #6.

## REGULATORY FRAMEWORK

Crude oil facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). Impact of soil due to a surface release of is addressed in the NMOCD guidance document titled *Guidelines for Remediation of Leaks, Spills and Releases*, dated August 13, 1993.

The guidance document provides direction for initial response actions, site assessment, sampling procedures and provides a total ranking score based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

RANKING SCORE CRITERIA		
General Site Characteristics		Score
Depth to Groundwater	< 50 Feet	20
	50-99 Feet	10
	> 100 Feet	0
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	Yes	20
	No	0
Distance to Surface Water Body	< 200 Feet	20
	200 - 1,000 Feet	10
	> 1,000 Feet	0

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the average depth to groundwater within the Section and identify any registered water wells within 1,000 ft. of the release site. If none were identified, the approximate depth to groundwater was extrapolated from a Depth to Groundwater Map utilized by the NMOCD. The results of the groundwater database search are provided as Attachment #3.

TOTAL RANKING SCORE FOR SITE		
Ranking Score Criteria		Score
Depth to Groundwater	500 Feet	0
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	No	0
Distance to Surface Water Body	> 1,000 Feet	0
TOTAL RANKING SCORE FOR SITE		0

The NMOCD guidelines indicated that the Site has an initial ranking score of 0 points. The NMOCD Recommended Remediation Action Levels (RRAL) for a Site with a ranking score of 0 points are as follows:

RECOMMENDED REMEDIATION ACTION LEVELS	
Benzene	10 mg/kg
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	50 mg/kg
Total Petroleum Hydrocarbons (TPH)	5,000 mg/kg
Chloride	600 mg/kg

## INITIAL INVESTIGATION

On April 18, 2017, an initial investigation was conducted by COG Representatives at the Site. During the initial investigation, thirty-six (36) representative soil samples were collected from within the affected area in an effort to determine the vertical extent of soil impacts. In addition, twelve (12) samples were collected from the edges of the release in an effort to determine the horizontal extent of soil impacts. The collected soil samples were submitted to Cardinal Laboratories of Hobbs, New Mexico for analysis of chloride concentrations. A table summarizing laboratory analytical results from soil samples collected during the initial assessment is provided below:

Sample ID	Depth	SW 846-8021b		SW-846 8015M					4500 Cl-b
		Benzene	Total BTEX	TPH GRO C <sub>6</sub> -C <sub>10</sub>	TPH DRO C <sub>10</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>36</sub>	TPH ORO C <sub>6</sub> -C <sub>28</sub>	TOTAL TPH C <sub>6</sub> -C <sub>36</sub>	CHLORIDE
T1	Surf.	<0.050	<0.150	11.5	4,120	-	4,131.5	-	<b>4,930</b>
T1	1'	<0.050	<0.150	<10.0	57.1	-	57.1	-	<b>&lt;16.0</b>
T1	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
T1	3'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	240
T1	4'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	816
T1	5'	<0.050	-	-	-	-	-	-	<b>1,490</b>
T1	6'	<0.050	-	-	-	-	-	-	480
T1	8'	<0.050	-	-	-	-	-	-	336
T1	10'	<0.050	-	-	-	-	-	-	80.0
T2	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>4,960</b>
T2	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>4,800</b>
T2	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	576
T2	3'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	144
T2	4'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	176
T2	6'	-	-	-	-	-	-	-	48.0
T3	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	64.0
T3	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	80.0
T3	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	112
T3	3'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>6,480</b>
T3	4'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>3,440</b>
T3	6'	-	-	-	-	-	-	-	432
T3	8'	-	-	-	-	-	-	-	176
T4	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	560
T4	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	560
T4	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	544
T4	3'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	32.0
T4	4'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
T4	6'	-	-	-	-	-	-	-	64.0
T4	8'	-	-	-	-	-	-	-	96.0
T5	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>7,360</b>
T5	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>1,230</b>
T5	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	<b>736</b>
T5	3'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	64.0
T5	4'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	64.0
T5	6'	-	-	-	-	-	-	-	192
T5	8'	-	-	-	-	-	-	-	160
North	Surf.	<0.050	<0.150	<10.0	22.0	-	22.0	-	32.0
North	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
North	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
East	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	64.0

East	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
East	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	32.0
South	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	224
South	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	112
South	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	112
West	Surf.	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	32.0
West	1'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	16.0
West	2'	<0.050	<0.150	<10.0	<10.0	-	<10.0	-	32.0
<b>MOCD RRAL</b>		<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,000</b>	<b>600</b>

Laboratory analytical reports are provided as Attachment #4. A "Site & Sample Location Map" is provided as Attachment #2.

### PROPOSED REMEDIATION ACTIVITIES AND REMEDIATION WORKPLAN

Based on laboratory analytical results, site conditions and field observations made during the initial release assessment, COG proposed the following remediation activities designed to advance the Release Site toward an approved closure:

- Utilizing a backhoe, excavate the area represented by soil sample T1 to approximately six (6) inches (in.) bgs. No excavation activities will be performed in the areas represented by soil samples T3 and T4, with the exception of any visibly stained areas, which will be aesthetically addressed. The areas represented by soil samples T2 and T5 will be excavated to approximately two (2) feet bgs.
- In the areas represented by soil samples T1 and T3, additional delineation trenches will be advanced and soil samples will be collected at approximately three (3) feet bgs, four (4) feet bgs, and five (5) feet bgs and submitted to the laboratory for chloride analysis to confirm the laboratory results of the April 18, 2017 sampling event. If laboratory results indicate the chloride concentrations are above NMOCD regulatory guidelines, the non-impacted overburden will be temporarily stockpiled adjacent to the excavation and excavation activities will continue at three (3) feet bgs in the area represented by trench T3 and at four (4) feet bgs in the area represented by trench T1. The non-impacted overburden will be utilized as backfill material.
- In addition, one (1) background trench will be advanced outside of the impacted area and soil samples will be collected and submitted at depths of approximately three (3) feet, four (4) feet, and five (5) feet and submitted for chloride analysis.
- On receipt of favorable analytical results (below the NMOCD regulatory guidelines referenced above), the excavation will be backfilled with non-impacted locally obtained "like" soil and the excavated impacted soil will be transported under manifest to an NMOCD approved disposal facility.
- Prepare and submit a "Remediation Summary and Site Closure Request" to the NMOCD and NMSLO.

The *Workplan* was subsequently approved with the condition that a scaled map of the location of additional test trenches be included.

## SUMMARY OF FIELD ACTIVITIES

As per the approved *Workplan* additional delineation trenches were advanced in the area represented by test trenches T1 and T3 and soil samples were collected at three (3), four (4) and five (5) ft. bgs for confirmation chloride analysis. Upon receiving laboratory analytical results, impacted soil within the release margins in the area represented by test trench T1 was excavated to depth of approximately six (6) in. bgs. Impacted soil within the release margins in the areas represented by test trenches T2 and T5 was excavated to a depth of approximately two (2) ft. bgs. Excavation sidewalls were advanced until laboratory analytical result from confirmation soil samples indicated BTEX, TPH and/or chloride concentrations were below the NMOCD RRAL. Excavated soil was transported to an NMOCD-approved disposal facility. Upon excavating impacted soil from within the release margins, six (6) confirmation soil samples were collected from the floor and sidewalls of the excavated area and submitted to the laboratory for analysis of benzene, BTEX, TPH and/or Chloride. A table summarizing laboratory analytical results from confirmation soil samples is provided below:

Sample ID	Depth	SW 846-8021b		SW-846 8015M				E300.1
		Benzene	Total BTEX	TPH GRO C <sub>6</sub> -C <sub>10</sub>	TPH DRO C <sub>10</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
T-1a	3'	-	-	-	-	-	-	344
T-1a	4'	-	-	-	-	-	-	19.8
T-1a	5'	-	-	-	-	-	-	585
T-3a	3'	-	-	-	-	-	-	7.63
T-3a	4'	-	-	-	-	-	-	16.9
T-3a	5'	-	-	-	-	-	-	<4.94
BT	3'	-	-	-	-	-	-	8.54
BT	4'	-	-	-	-	-	-	17.0
BT	5'	-	-	-	-	-	-	<4.91
T-1 FL	6"	<0.0196	<0.0393	<25.0	<25.0	<25.0	<25.0	71.1
T-1 NSW	3"	-	-	-	-	-	-	<25.0
T-1 ESW	3"	-	-	-	-	-	-	410
T-1 WSW	3"	-	-	-	-	-	-	<25.0
T-2 FL	2'	<0.0198	<0.0397	<25.0	<25.0	<25.0	<25.0	<25.0
T-2 NSW	1'	-	-	-	-	-	-	<25.0
T-2 ESW	1'	-	-	-	-	-	-	514
T2-WSW	1'	-	-	-	-	-	-	58.3
T-5 FL	2'	<0.0195	<0.0390	<25.0	<25.0	<25.0	<25.0	490
T-5 ESW	1'	-	-	-	-	-	-	1,380
T-5 WSW	1'	-	-	-	-	-	-	458
T-5 SSW	1'	-	-	-	-	-	-	533
T-5 ESWb	1'	-	-	-	-	-	-	227
<b>NMOCD RRAL</b>		<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,000</b>	<b>600</b>

 Denotes impacted soil within the area represented by associated soil sample has been removed.

Upon receiving laboratory analytical results from confirmation soil samples, the excavated area was backfilled with imported, non-impacted "like" material. A Photographic Log is provided as Attachment #5.

EXCAVATION/REMEDATION DETAIL SUMMARY					
<b>Date Remediation Activities Began:</b>		January 10, 2018		<b>Type of Remediation:</b>	
<b>Excavation Dimensions:</b>		210 Ft.	<b>Length</b>	20 to 60 Ft.	<b>Width</b>
<b>Soil Transportation Start Date:</b>		February 8, 2018		<b>Backfill Date:</b>	
<b>Total Yards Transported to Disposal:</b>		544		<b>Disposal Facility:</b>	
				R360 Halfway Bar Facility	

## LIMITATIONS

TRC has prepared this Remediation Summary and Soil Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. TRC has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of COG Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC and/or COG Operating, LLC.

## SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD- and NMSLO-approved *Workplan*. Excavated impacted material was transported to an NMOCD-approved disposal facility and the site was backfilled with imported, non-impacted "like" material. TRC on behalf of COG Operating, LLC respectfully requests the NMOCD and NMSLO grant closure approval for the Jaguar 18 State #002H release which occurred on March 29, 2017.

If you have any questions, or if additional is required, please feel free to contact Becky Haskell or either of the undersigned by phone or email.

Respectfully,



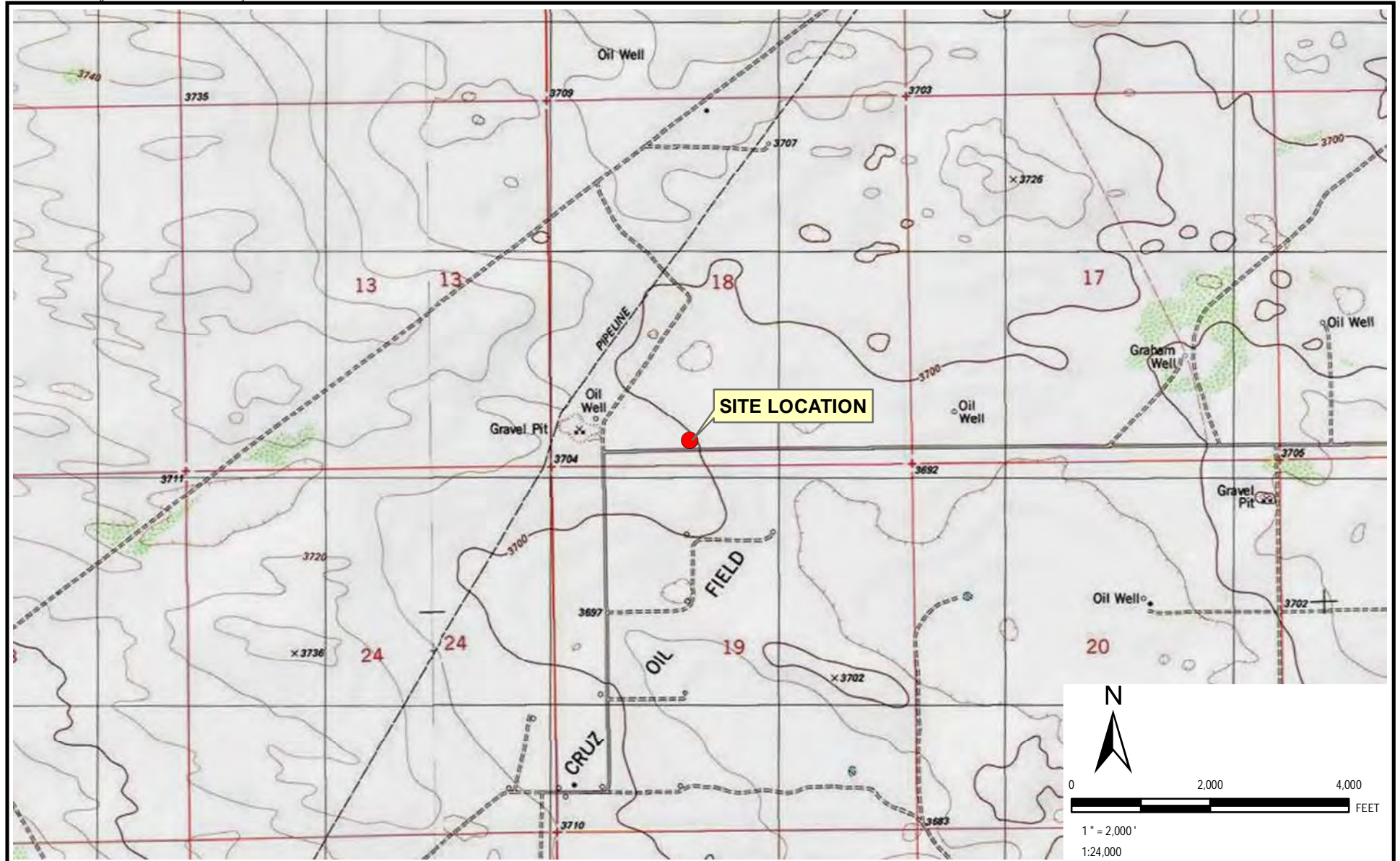
Joel Lowry  
Senior Project Manager  
TRC Environmental Corp.



Curt Stanley  
Senior Project Manager  
TRC Environmental Corp.

<b>Attachments:</b>	Attachment #1-	Figure 1 - Site Location Map
	Attachment #2-	Figure 2 - Site & Sample Location Map
	Attachment #3-	Groundwater Database Search
	Attachment #4-	Laboratory Analytical Reports
	Attachment #5-	Photographic Log
	Attachment #6-	Release Notification and Corrective Action (FORM C-141)





2075 Commerce Drive  
Midland, TX 79703  
Phone: 432.520.770

TRC - GIS

TITLE:

### FIGURE 1 SITE LOCATION MAP

PROJECT:

**JAGUAR 18 STATE #002H  
LEA COUNTY, NEW MEXICO  
COG OPERATING, LLC**

DRAWN BY: MLOVELACE

CHECKED BY: NGREEN

APPROVED BY: NGREEN

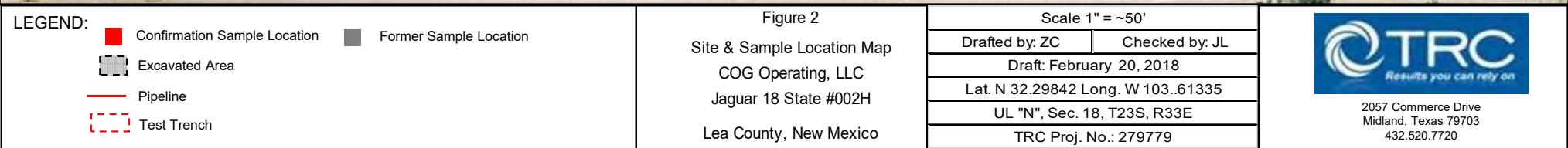
DATE: JULY 2017



PROJ. NO.: 279779


GPS: LAT. N 32.29842°, LONG. W 103.61335°


**SW1/4 SW1/4 SEC 18 T23S R33E**





 Confirmation Sample Location    
  Former Sample Location

 Excavated Area

 Pipeline


 Test Trench

Figure 2  
Site & Sample Location Map  
COG Operating, LLC  
Jaguar 18 State #002H  
Lea County, New Mexico

Scale 1" = ~50'

Drafted by: ZC	Checked by: JL
----------------	----------------

Draft: February 20, 2018

Lat. N 32.29842 Long. W 103..61335

UL "N", Sec. 18, T23S, R33E

TRC Proj. No.: 279779



2057 Commerce Drive  
Midland, Texas 79703  
432.520.7720





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

---

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

**PLSS Search:**

**Section(s):** 18

**Township:** 23S

**Range:** 33E

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The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

---

2/20/18 10:18 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

April 27, 2017

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: JAGUAR 18 STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 04/20/17 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T1 - SURFACE (H701053-01)**

BTX 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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.3 % 72-148

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4930	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	11.5	10.0	04/21/2017	ND	198	98.8	200	1.91		
DRO >C10-C28	4120	10.0	04/21/2017	ND	207	104	200	1.74		

Surrogate: 1-Chlorooctane 94.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 338 % 34.7-157

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

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T1 - 1' (H701053-02)**

BTX 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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/24/2017	ND	448	112	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	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	57.1	10.0	04/21/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 90.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.7 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 COG OPERATING  
 AARON LIEB  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 04/20/2017  
 Reported: 04/27/2017  
 Project Name: JAGUAR 18 STATE #002H  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/18/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: T1 - 2' (H701053-03)**

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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEx	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/24/2017	ND	448	112	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	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 88.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T1 - 3' (H701053-04)**

BTX 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	04/22/2017	ND	1.94	96.8	2.00	0.897		
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13		
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506		
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459		
Total BTX	<0.300	0.300	04/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	04/24/2017	ND	432	108	400	7.14	

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	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 87.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T1 - 4' (H701053-05)**

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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	04/24/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 91.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.2 % 34.7-157

**Sample ID: T1 - 5' (H701053-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1490	16.0	04/25/2017	ND	432	108	400	7.14	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 AARON LIEB  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 04/20/2017  
 Reported: 04/27/2017  
 Project Name: JAGUAR 18 STATE #002H  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/18/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: T1 - 6' (H701053-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	04/25/2017	ND	432	108	400	7.14		

**Sample ID: T1 - 8' (H701053-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	04/25/2017	ND	432	108	400	7.14		

**Sample ID: T1 - 10' (H701053-09)**

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	04/25/2017	ND	432	108	400	7.14		

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**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T2 - SURFACE (H701053-10)**

BTX 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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4960	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 88.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T2 - 1' (H701053-11)**

BTX 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	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4800	16.0	04/25/2017	ND	432	108	400	7.14		

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	04/22/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 86.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T2 - 2' (H701053-12)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	QR-03
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 94.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T2 - 3' (H701053-13)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 72-148

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	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	207	104	200	1.74	

Surrogate: 1-Chlorooctane 84.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 74.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T2 - 4' (H701053-14)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 86.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.6 % 34.7-157

**Sample ID: T2 - 6' (H701053-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	04/25/2017	ND	432	108	400	7.14	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - SURFACE (H701053-16)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 72-148

Chloride, SM4500CI-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	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 85.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.2 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - 1' (H701053-17)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

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	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 92.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - 2' (H701053-18)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

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	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 85.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 78.2 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - 3' (H701053-19)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6480	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 88.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - 4' (H701053-20)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 77.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 77.0 % 34.7-157

**Sample ID: T3 - 6' (H701053-21)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	04/25/2017	ND	432	108	400	7.14	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T3 - 8' (H701053-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	04/25/2017	ND	432	108	400	7.14		

**Sample ID: T4 - SURFACE (H701053-23)**

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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTEx	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	04/25/2017	ND	432	108	400	7.14	

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 82.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T4 - 1' (H701053-24)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	04/25/2017	ND	432	108	400	0.00	QM-07

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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 88.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T4 - 2' (H701053-25)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 93.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T4 - 3' (H701053-26)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 90.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.8 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T4 - 4' (H701053-27)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 91.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.3 % 34.7-157

**Sample ID: T4 - 6' (H701053-28)**

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	04/25/2017	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T4 - 8' (H701053-29)**

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	04/25/2017	ND	432	108	400	0.00		

**Sample ID: T5 - SURFACE (H701053-30)**

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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTEX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7360	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 89.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.2 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T5 - 1' (H701053-31)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1230	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 85.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T5 - 2' (H701053-32)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	736	16.0	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 85.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 79.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T5 - 3' (H701053-33)**

BTX 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	04/24/2017	ND	1.80	90.1	2.00	0.871	
Toluene*	<0.050	0.050	04/24/2017	ND	1.75	87.4	2.00	0.818	
Ethylbenzene*	<0.050	0.050	04/24/2017	ND	1.79	89.5	2.00	0.819	
Total Xylenes*	<0.150	0.150	04/24/2017	ND	5.12	85.3	6.00	0.650	
Total BTX	<0.300	0.300	04/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 72-148

Chloride, SM4500CI-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	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 76.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: T5 - 4' (H701053-34)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 72-148

Chloride, SM4500CI-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	04/25/2017	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	04/22/2017	ND	200	100	200	4.05	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	215	107	200	4.17	

Surrogate: 1-Chlorooctane 76.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.9 % 34.7-157

**Sample ID: T5 - 6' (H701053-35)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	04/25/2017	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker**Sample ID: T5 - 8' (H701053-36)**

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	04/25/2017	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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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---

Celey D. Keene, Lab Director/Quality Manager





## 1 of 5

Page 30 of 34



**Company Name:** COG Operating LLC

**Address:** 2407 Pecos Avenue

Zip 88210

---

Project Owner:

State: TX Zip: 79704

Phone #: (408) 251-7200

Pay #.

FDX #:

H7D1053

**Relinquished By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Received BY:

Received By:

3

#75

**Sample Condition**

CHECKED BY:

dneel2@concho.com  
alieb@concho.com  
rarubbs@concho.com  
rhaskeill@concho.com

Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
REMARKS:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:





3 of 4

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 32 of 34



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating LLC		P.O. #:		BIL TO												ANALYSIS REQUEST											
Project Manager: Aaron Lieb		Company: COG Operating LLC																									
Address: 2407 Pecos Avenue		Attn: Robert McNeill																									
City: Artesia		Address: 600 W Illinois																									
Phone #: 575-748-1553		City: Midland																									
Fax #: 575-748-1553		State: TX Zip: 79701																									
Project #: Project Owner:		State: TX Zip: 79701																									
Project Name: Jaguar 18 State #002H		Phone #: (432) 221-0388																									
Project Location:		Fax #:																									
Sampler Name: Aaron Lieb		PRESERV																									
FOR LAB USE ONLY		SAMPLING																									
Lab I.D.		DATE																									
Sample I.D.		TIME																									
H7D1053		4/18/17																									
23		12:15PM																									
24		12:15PM																									
25		12:15PM																									
26		12:15PM																									
27		12:15PM																									
28		12:15PM																									
29		12:15PM																									
T4-SURF		X																									
T4-1'		X																									
T4-2'		X																									
T4-3'		X																									
T4-4'		X																									
T4-6'		X																									
T4-8'		X																									
(G)RAB OR (C)OMP.		X																									
# CONTAINERS		X																									
GROUNDWATER		X																									
WASTEWATER		X																									
SOIL		X																									
OIL		X																									
SLUDGE		X																									
OTHER :		X																									
ACID/BASE:		X																									
ICE / COOL		X																									
OTHER :		X																									
DATE		4/18/17																									
TIME		12:15PM																									
BTEX		X																									
TPH		X																									
Chloride		X																									

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Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_

Delivered By: (Circle One) \_\_\_\_\_ Date: 4-20-17 Received By: \_\_\_\_\_ Date: \_\_\_\_\_

Sampler - UPS - Bus - Other: #75 4.10 \_\_\_\_\_

Sample Condition: Cool ☒ Intact ☒ Yes ☐ No ☐ Yes ☐ No

CHECKED BY: \_\_\_\_\_

REMARKS: dneel2@concho.com  
alieb@concho.com  
rgrubs@concho.com  
rthaskell@concho.com

Phone Result: ☐ Yes ☐ No Add'l Phone #: \_\_\_\_\_  
Fax Result: ☐ Yes ☐ No Add'l Fax #: \_\_\_\_\_

4 of 5





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### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 34 of 34

April 27, 2017

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: JAGUAR 18 STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 04/20/17 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NORTH - SURFACE (H701058-01)**

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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTEX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	22.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 86.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 69.9 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NORTH - 1' (H701058-02)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 85.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 73.4 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NORTH - 2' (H701058-03)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 83.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 63.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SOUTH - SURFACE (H701058-04)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 92.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.0 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SOUTH - 1' (H701058-05)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

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	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 87.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SOUTH - 2' (H701058-06)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

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	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 93.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.7 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST - SURFACE (H701058-07)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 72-148

Chloride, SM4500CI-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	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 81.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.7 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST - 1' (H701058-08)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29		
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74		
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25		
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34		
Total BTX	<0.300	0.300	04/25/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 96.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 91.5 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST - 2' (H701058-09)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29		
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74		
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25		
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34		
Total BTX	<0.300	0.300	04/25/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 97.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.1 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST - SURFACE (H701058-10)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 87.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.1 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
AARON LIEB  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 04/20/2017  
Reported: 04/27/2017  
Project Name: JAGUAR 18 STATE #002H  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/18/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST - 1' (H701058-11)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29		
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74		
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25		
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34		
Total BTX	<0.300	0.300	04/25/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 91.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.9 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 AARON LIEB  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 04/20/2017  
 Reported: 04/27/2017  
 Project Name: JAGUAR 18 STATE #002H  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/18/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: WEST - 2' (H701058-12)**

BTX 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	04/25/2017	ND	1.96	97.8	2.00	2.29	
Toluene*	<0.050	0.050	04/25/2017	ND	1.80	90.1	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/25/2017	ND	1.80	90.0	2.00	1.25	
Total Xylenes*	<0.150	0.150	04/25/2017	ND	5.12	85.3	6.00	1.34	
Total BTX	<0.300	0.300	04/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/25/2017	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	04/24/2017	ND	184	91.9	200	1.36	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	194	97.1	200	1.76	

Surrogate: 1-Chlorooctane 99.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.4 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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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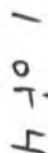
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

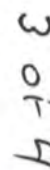


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(575) 393-2326 FAX (575) 393-2476

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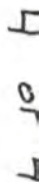


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Page 18 of 18



# Certificate of Analysis Summary 573276

TRC Solutions, Inc, Midland, TX

Project Name: Jaguar 18 State #2H



Project Id: 8021  
Contact: Joel Lowry  
Project Location: Lea Co, NM

Date Received in Lab: Wed Jan-10-18 04:21 pm  
Report Date: 16-JAN-18  
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573276-001	573276-002	573276-003	573276-004	573276-005	573276-006
	<i>Field Id:</i>	T-1a @ 3'	T-1a @ 4'	T-1a @ 5'	T-3a @ 3'	T-3a @ 4'	T-3a @ 5'
	<i>Depth:</i>	3'-	4'-	5'-	3'-	4'-	5'-
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-10-18 09:40	Jan-10-18 09:45	Jan-10-18 09:50	Jan-10-18 09:55	Jan-10-18 10:00	Jan-10-18 10:05
Chloride by EPA 300	<i>Extracted:</i>	Jan-12-18 09:00	Jan-12-18 09:00	Jan-12-18 09:00	Jan-12-18 09:00	Jan-12-18 09:00	Jan-12-18 09:00
	<i>Analyzed:</i>	Jan-12-18 10:37	Jan-12-18 10:57	Jan-12-18 11:04	Jan-12-18 11:11	Jan-12-18 11:18	Jan-13-18 14:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		344 5.00	19.8 4.98	585 4.97	7.63 4.95	16.9 5.00	<4.94 4.94

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager



# Certificate of Analysis Summary 573276

TRC Solutions, Inc, Midland, TX

Project Name: Jaguar 18 State #2H



Project Id: 8021  
Contact: Joel Lowry  
Project Location: Lea Co, NM

Date Received in Lab: Wed Jan-10-18 04:21 pm  
Report Date: 16-JAN-18  
Project Manager: Kelsey Brooks

<b>Analysis Requested</b>	<b>Lab Id:</b>	573276-007	573276-008	573276-009			
	<b>Field Id:</b>	BT @ 3'	BT @ 4'	BT @ 5'			
	<b>Depth:</b>	3'-	4'-	5'-			
	<b>Matrix:</b>	SOIL	SOIL	SOIL			
	<b>Sampled:</b>	Jan-10-18 10:10	Jan-10-18 10:15	Jan-10-18 10:20			
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	Jan-12-18 09:00	Jan-12-18 09:00	Jan-12-18 09:00			
	<b>Analyzed:</b>	Jan-13-18 14:28	Jan-13-18 14:35	Jan-13-18 14:42			
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		8.54 4.93	17.0 4.91	<4.91 4.91			

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager

# Analytical Report 573276

for  
**TRC Solutions, Inc**

**Project Manager: Joel Lowry**

**Jaguar 18 State #2H**

**16-JAN-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



16-JAN-18

Project Manager: **Joel Lowry**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **573276**  
**Jaguar 18 State #2H**  
Project Address: Lea Co, NM

**Joel Lowry:**

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 XENCO Report Number(s) 573276. 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 XENCO Laboratories. 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. 573276 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 XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 573276



TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1a @ 3'	S	01-10-18 09:40	3'	573276-001
T-1a @ 4'	S	01-10-18 09:45	4'	573276-002
T-1a @ 5'	S	01-10-18 09:50	5'	573276-003
T-3a @ 3'	S	01-10-18 09:55	3'	573276-004
T-3a @ 4'	S	01-10-18 10:00	4'	573276-005
T-3a @ 5'	S	01-10-18 10:05	5'	573276-006
BT @ 3'	S	01-10-18 10:10	3'	573276-007
BT @ 4'	S	01-10-18 10:15	4'	573276-008
BT @ 5'	S	01-10-18 10:20	5'	573276-009



## CASE NARRATIVE

*Client Name: TRC Solutions, Inc*

*Project Name: Jaguar 18 State #2H*

Project ID: 8021  
Work Order Number(s): 573276

Report Date: 16-JAN-18  
Date Received: 01/10/2018

---

**Sample receipt non conformances and comments:**

---

**Sample receipt non conformances and comments per sample:**

None



# Certificate of Analytical Results 573276



## TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-1a @ 3'**

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-001

Date Collected: 01.10.18 09.40

Sample Depth: 3'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	5.00	mg/kg	01.12.18 10.37		1





# Certificate of Analytical Results 573276



## TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1a @ 4'

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-002

Date Collected: 01.10.18 09.45

Sample Depth: 4'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.8	4.98	mg/kg	01.12.18 10.57		1



# Certificate of Analytical Results 573276



## TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1a @ 5'

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-003

Date Collected: 01.10.18 09.50

Sample Depth: 5'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	585	4.97	mg/kg	01.12.18 11.04		1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-3a @ 3'**

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-004

Date Collected: 01.10.18 09.55

Sample Depth: 3'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.63	4.95	mg/kg	01.12.18 11.11		1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-3a @ 4'**

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-005

Date Collected: 01.10.18 10.00

Sample Depth: 4'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.9	5.00	mg/kg	01.12.18 11.18		1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-3a @ 5'

Matrix: Soil

Date Received: 01.10.18 16.21

Lab Sample Id: 573276-006

Date Collected: 01.10.18 10.05

Sample Depth: 5'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.94	4.94	mg/kg	01.13.18 14.22	U	1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **BT @ 3'**  
Lab Sample Id: 573276-007

Matrix: Soil  
Date Collected: 01.10.18 10.10

Date Received: 01.10.18 16.21  
Sample Depth: 3'

Analytical Method: Chloride by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3038304

Date Prep: 01.12.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.54	4.93	mg/kg	01.13.18 14.28		1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **BT @ 4'**  
Lab Sample Id: 573276-008

Matrix: Soil  
Date Collected: 01.10.18 10.15

Date Received: 01.10.18 16.21  
Sample Depth: 4'

Analytical Method: Chloride by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3038304

Date Prep: 01.12.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.0	4.91	mg/kg	01.13.18 14.35		1



## Certificate of Analytical Results 573276



### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **BT @ 5'**  
Lab Sample Id: 573276-009

Matrix: Soil  
Date Collected: 01.10.18 10.20

Date Received: 01.10.18 16.21  
Sample Depth: 5'

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: OJS

% Moisture:

Analyst: OJS

Date Prep: 01.12.18 09.00

Basis: Wet Weight

Seq Number: 3038304

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.91	4.91	mg/kg	01.13.18 14.42	U	1



- 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.

**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

+ NELAC certification not offered for this compound.

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

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



## QC Summary 573276

### TRC Solutions, Inc

Jaguar 18 State #2H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3038304

MB Sample Id: 7637395-1-BLK

Matrix: Solid

LCS Sample Id: 7637395-1-BKS

Prep Method: E300P

Date Prep: 01.12.18

LCSD Sample Id: 7637395-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	251	100	248	99	90-110	1	20	mg/kg	01.12.18 10:23	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3038304

Parent Sample Id: 573254-001

Matrix: Soil

MS Sample Id: 573254-001 S

Prep Method: E300P

Date Prep: 01.12.18

MSD Sample Id: 573254-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1120	245	1470	143	1440	131	90-110	2	20	mg/kg	01.13.18 15:03	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3038304

Parent Sample Id: 573276-001

Matrix: Soil

MS Sample Id: 573276-001 S

Prep Method: E300P

Date Prep: 01.12.18

MSD Sample Id: 573276-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	344	250	580	94	581	95	90-110	0	20	mg/kg	01.12.18 10:43	

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

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$

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

# CHAIN OF CUSTODY

Page 1 of 1

San Antonio, Texas (210-509-3334)  
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Job #

513276  
513264

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes								
Company Name / Branch: <b>TRC Environmental Corporation</b>				Project Name/Number: <b>Jaguar 18 State #2H</b>																
Company Address: 2057 Commerce Drive Midland, TX 79703				Project Location: <b>Lea Co. NM</b>																
Email: <b>llowry@trcsolutions.com</b> <b>zconder@trcsolutions.com</b>				Phone No: <b>432-465-4460</b>				Invoice To: <b>COG Operating CIO Beely Haskell</b>												
Project Contact: <b>Joel Lowry</b>				Invoice:																
Sampler's Name: <b>Zach Conder</b>																				
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments	
1	T-1a @ 3'	3'	1/10/2018	9:40	S	1										X				
2	T-1a @ 4'	4'	1/10/2018	9:45	S	1										X				
3	T-1a @ 5'	5'	1/10/2018	9:50	S	1										X				
4	T-3a @ 3'	3'	1/10/2018	9:55	S	1										X				
5	T-3a @ 4'	4'	1/10/2018	10:00	S	1										X				
6	T-3a @ 5'	5'	1/10/2018	10:05	S	1										X				
7	BT @ 3'	3'	1/10/2018	10:10	S	1										X				
8	BT @ 4'	4'	1/10/2018	10:15	S	1										X				
9	BT @ 5'	5'	1/10/2018	10:20	S	1										X				
10																				
Turnaround Time (Business days)				Data Deliverable Information																
<input type="checkbox"/> Same Day TAT				<input type="checkbox"/> 6 Day TAT				<input type="checkbox"/> Level II Std QC				<input type="checkbox"/> Level IV (Full Data Pkg /raw data)								
<input type="checkbox"/> Next Day EMERGENCY				<input type="checkbox"/> 7 Day TAT				<input type="checkbox"/> Level III Std QC+ Forms				<input type="checkbox"/> TRRP Level IV								
<input type="checkbox"/> 2 Day EMERGENCY				<input checked="" type="checkbox"/> Contract TAT				<input type="checkbox"/> Level 3 (CLP Forms)				<input type="checkbox"/> UST / RG -411								
<input type="checkbox"/> 3 Day EMERGENCY								<input type="checkbox"/> TRRP Checklist												
TAT Starts Day received by Lab, if received by 5:00 pm																				
Relinquished by Sampler:				Date Time:				Received By:				Relinquished By:								
1-10-18 16:26				1-10-18 16:26				1-10-18 16:26				1-10-18 16:26								
Relinquished by:				Date Time:				Received By:				Relinquished By:								
3				3				3				3								
Relinquished by:				Date Time:				Received By:				Relinquished By:								
5				5				5				5								
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.																				
FED-EX / UPS: Tracking #																				
On Ice				Cooler Temp.				Thermo. Corr. Factor												



**XENCO Laboratories**  
**Prelogin/Nonconformance Report- Sample Log-In**



**Client:** TRC Solutions, Inc

**Date/ Time Received:** 01/10/2018 04:21:00 PM

**Work Order #:** 573276

**Acceptable Temperature Range:** 0 - 6 degC

**Air and Metal samples Acceptable Range:** Ambient

**Temperature Measuring device used :** R8

**Sample Receipt Checklist**

**Comments**

#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#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
#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:**

Connie Hernandez

Date: 01/11/2018

**Checklist reviewed by:**

Kelsey Brooks

Date: 01/11/2018



# Certificate of Analysis Summary 573689

TRC Solutions, Inc, Midland, TX

Project Name: Jaguar 18 State #2H

Project Id: Jaguar 18 State #2H

Contact: Joel Lowry

Project Location: Lea Co. NM

Date Received in Lab: Tue Jan-16-18 04:58 pm

Report Date: 24-JAN-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573689-001	573689-002	573689-003	573689-004	573689-005	573689-006
	<i>Field Id:</i>	T-1 FL @ 6 "	T-1 NSW	T-1 ESW	T-1 WSW	T-2 FL @ 2 '	T-2 NSW
	<i>Depth:</i>	6- In	3- In	3- In	3- In	2- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-14-18 08:00	Jan-14-18 08:05	Jan-16-18 08:10	Jan-14-18 08:20	Jan-14-18 08:20	Jan-14-18 08:25
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jan-19-18 11:40				Jan-19-18 11:40	
	<i>Analyzed:</i>	Jan-20-18 19:17				Jan-20-18 21:05	
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	
Benzene		<0.0196 0.0196				<0.0198 0.0198	
Toluene		<0.0196 0.0196				<0.0198 0.0198	
Ethylbenzene		<0.0196 0.0196				<0.0198 0.0198	
m,p-Xylenes		<0.0393 0.0393				<0.0397 0.0397	
o-Xylene		<0.0196 0.0196				<0.0198 0.0198	
Xylenes, Total		<0.0196 0.0196				<0.0198 0.0198	
Total BTEX		<0.0196 0.0196				<0.0198 0.0198	
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Jan-23-18 08:15	Jan-23-18 08:15	Jan-23-18 12:00	Jan-23-18 08:15	Jan-23-18 12:00	Jan-23-18 12:00
	<i>Analyzed:</i>	Jan-23-18 14:22	Jan-23-18 14:34	Jan-23-18 16:17	Jan-23-18 14:46	Jan-23-18 17:06	Jan-23-18 17:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		71.1 25.0	<25.0 25.0	410 25.0	<25.0 25.0	<25.0 25.0	<25.0 25.0
<b>TPH by Texas1005</b>	<i>Extracted:</i>	Jan-17-18 14:15				Jan-17-18 14:15	
	<i>Analyzed:</i>	Jan-17-18 21:24				Jan-17-18 23:09	
	<i>Units/RL:</i>	mg/kg RL				mg/kg RL	
C6-C12 Range Hydrocarbons		<25.0 25.0				<25.0 25.0	
C12-C28 Range Hydrocarbons		<25.0 25.0				<25.0 25.0	
C28-C35 Range Hydrocarbons		<25.0 25.0				<25.0 25.0	
Total TPH		<25 25				<25 25	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks  
Project Manager





# Certificate of Analysis Summary 573689

TRC Solutions, Inc, Midland, TX

Project Name: Jaguar 18 State #2H

Project Id: Jaguar 18 State #2H

Contact: Joel Lowry

Project Location: Lea Co. NM

Date Received in Lab: Tue Jan-16-18 04:58 pm

Report Date: 24-JAN-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573689-007	573689-008	573689-009	573689-010	573689-011	573689-012
	<i>Field Id:</i>	T-2 ESW	T-2 WSW	T-5 FL @ 2 '	T-5 ESW	T-5 WSW	T-5 SSW
	<i>Depth:</i>	1- ft	1- ft	2- ft	1- ft	1- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-14-18 08:30	Jan-14-18 08:35	Jan-14-18 08:40	Jan-14-18 08:45	Jan-14-18 08:50	Jan-14-18 08:55
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>			Jan-19-18 11:40			
	<i>Analyzed:</i>			Jan-20-18 21:32			
	<i>Units/RL:</i>			mg/kg RL			
Benzene				<0.0195 0.0195			
Toluene				<0.0195 0.0195			
Ethylbenzene				<0.0195 0.0195			
m,p-Xylenes				<0.0390 0.0390			
o-Xylene				<0.0195 0.0195			
Xylenes, Total				<0.0195 0.0195			
Total BTEX				<0.0195 0.0195			
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Jan-23-18 12:00	Jan-23-18 12:00	Jan-23-18 12:00	Jan-23-18 12:00	Jan-23-18 12:00	Jan-23-18 12:00
	<i>Analyzed:</i>	Jan-23-18 17:31	Jan-23-18 17:56	Jan-23-18 18:08	Jan-23-18 18:46	Jan-23-18 19:10	Jan-23-18 19:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		514 D 125	58.3 25.0	490 25.0	1380 D 125	458 25.0	533 D 125
<b>TPH by Texas1005</b>	<i>Extracted:</i>			Jan-17-18 14:15			
	<i>Analyzed:</i>			Jan-17-18 23:45			
	<i>Units/RL:</i>			mg/kg RL			
C6-C12 Range Hydrocarbons				<25.0 25.0			
C12-C28 Range Hydrocarbons				<25.0 25.0			
C28-C35 Range Hydrocarbons				<25.0 25.0			
Total TPH				<25 25			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.9%

Kelsey Brooks  
Project Manager

# **Analytical Report 573689**

**for**  
**TRC Solutions, Inc**

**Project Manager: Joel Lowry**

**Jaguar 18 State #2H**

**Jaguar 18 State #2H**

**24-JAN-18**

Collected By: Client



**6701 Aberdeen, Suite 9 Lubbock, TX 79424**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





24-JAN-18

Project Manager: **Joel Lowry**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **573689**  
**Jaguar 18 State #2H**  
Project Address: Lea Co. NM

**Joel Lowry:**

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 XENCO Report Number(s) 573689. 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 XENCO Laboratories. 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. 573689 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 XENCO Laboratories 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, appearing to read 'Kelsey Brooks', is written over a horizontal line.

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 573689

TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 FL @ 6 "	S	01-14-18 08:00	6 In	573689-001
T-1 NSW	S	01-14-18 08:05	3 In	573689-002
T-1 ESW	S	01-16-18 08:10	3 In	573689-003
T-1 WSW	S	01-14-18 08:20	3 In	573689-004
T-2 FL @ 2 '	S	01-14-18 08:20	2 ft	573689-005
T-2 NSW	S	01-14-18 08:25	1 ft	573689-006
T-2 ESW	S	01-14-18 08:30	1 ft	573689-007
T-2 WSW	S	01-14-18 08:35	1 ft	573689-008
T-5 FL @ 2 '	S	01-14-18 08:40	2 ft	573689-009
T-5 ESW	S	01-14-18 08:45	1 ft	573689-010
T-5 WSW	S	01-14-18 08:50	1 ft	573689-011
T-5 SSW	S	01-14-18 08:55	1 ft	573689-012



## CASE NARRATIVE

*Client Name: TRC Solutions, Inc*

*Project Name: Jaguar 18 State #2H*

Project ID: *Jaguar 18 State #2H*  
Work Order Number(s): *573689*

Report Date: *24-JAN-18*  
Date Received: *01/16/2018*

---

### **Sample receipt non conformances and comments:**

---

### **Sample receipt non conformances and comments per sample:**

None

### **Analytical non conformances and comments:**

Batch: LBA-3038795 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3039062 Chloride by EPA 300

Lab Sample ID 573689-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573689-003, -005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1 FL @ 6 "

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-001

Date Collected: 01.14.18 08.00

Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 08.15

Basis: Wet Weight

Seq Number: 3039003

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.1	25.0	mg/kg	01.23.18 14.22		1

Analytical Method: TPH by Texas1005

Prep Method: TX1005P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 01.17.18 14.15

Basis: Wet Weight

Seq Number: 3038515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C12 Range Hydrocarbons	PHC612	<25.0	25.0	mg/kg	01.17.18 21.24	U	1
C12-C28 Range Hydrocarbons	PHCG1228	<25.0	25.0	mg/kg	01.17.18 21.24	U	1
C28-C35 Range Hydrocarbons	PHCG2835	<25.0	25.0	mg/kg	01.17.18 21.24	U	1
Total TPH	PHC635	<25	25	mg/kg	01.17.18 21.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
n-Triacontane	638-68-6	94	%	46-152	01.17.18 21.24	
Tricosane	638-67-5	104	%	65-144	01.17.18 21.24	



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1 FL @ 6 "

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-001

Date Collected: 01.14.18 08.00

Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 01.19.18 11.40

Basis: Wet Weight

Seq Number: 3038795

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
m,p-Xylenes	179601-23-1	<0.0393	0.0393	mg/kg	01.20.18 19.17	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
Xylenes, Total	1330-20-7	<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
Total BTEX		<0.0196	0.0196	mg/kg	01.20.18 19.17	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110		%	68-120	01.20.18 19.17	
a,a,a-Trifluorotoluene	98-08-8	114		%	71-121	01.20.18 19.17	



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1 NSW

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-002

Date Collected: 01.14.18 08.05

Sample Depth: 3 In

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 08.15

Basis: Wet Weight

Seq Number: 3039003

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	01.23.18 14.34	U	1



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-1 ESW**

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-003

Date Collected: 01.16.18 08.10

Sample Depth: 3 In

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	410	25.0	mg/kg	01.23.18 16.17		1





## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-1 WSW

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-004

Date Collected: 01.14.18 08.20

Sample Depth: 3 In

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 08.15

Basis: Wet Weight

Seq Number: 3039003

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	01.23.18 14.46	U	1



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-2 FL @ 2'

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-005

Date Collected: 01.14.18 08.20

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	01.23.18 17.06	U	1

Analytical Method: TPH by Texas1005

Prep Method: TX1005P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 01.17.18 14.15

Basis: Wet Weight

Seq Number: 3038515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C12 Range Hydrocarbons	PHC612	<25.0	25.0	mg/kg	01.17.18 23.09	U	1
C12-C28 Range Hydrocarbons	PHCG1228	<25.0	25.0	mg/kg	01.17.18 23.09	U	1
C28-C35 Range Hydrocarbons	PHCG2835	<25.0	25.0	mg/kg	01.17.18 23.09	U	1
Total TPH	PHC635	<25	25	mg/kg	01.17.18 23.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
n-Triacontane	638-68-6	90	%	46-152	01.17.18 23.09	
Tricosane	638-67-5	106	%	65-144	01.17.18 23.09	



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-2 FL @ 2'

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-005

Date Collected: 01.14.18 08.20

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 01.19.18 11.40

Basis: Wet Weight

Seq Number: 3038795

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
Toluene	108-88-3	<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
Ethylbenzene	100-41-4	<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
m,p-Xylenes	179601-23-1	<0.0397	0.0397	mg/kg	01.20.18 21.05	U	1
o-Xylene	95-47-6	<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
Xylenes, Total	1330-20-7	<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
Total BTEX		<0.0198	0.0198	mg/kg	01.20.18 21.05	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	111	%	68-120	01.20.18 21.05		
a,a,a-Trifluorotoluene	98-08-8	116	%	71-121	01.20.18 21.05		



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-2 NSW

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-006

Date Collected: 01.14.18 08.25

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	01.23.18 17.19	U	1



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-2 ESW**

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-007

Date Collected: 01.14.18 08.30

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	514	125	mg/kg	01.23.18 17.43	D	5



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-2 WSW

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-008

Date Collected: 01.14.18 08.35

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.3	25.0	mg/kg	01.23.18 17.56		1



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-5 FL @ 2'

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-009

Date Collected: 01.14.18 08.40

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	490	25.0	mg/kg	01.23.18 18.08		1

Analytical Method: TPH by Texas1005

Prep Method: TX1005P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 01.17.18 14.15

Basis: Wet Weight

Seq Number: 3038515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C12 Range Hydrocarbons	PHC612	<25.0	25.0	mg/kg	01.17.18 23.45	U	1
C12-C28 Range Hydrocarbons	PHCG1228	<25.0	25.0	mg/kg	01.17.18 23.45	U	1
C28-C35 Range Hydrocarbons	PHCG2835	<25.0	25.0	mg/kg	01.17.18 23.45	U	1
Total TPH	PHC635	<25	25	mg/kg	01.17.18 23.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
n-Triacontane	638-68-6	82	%	46-152	01.17.18 23.45	
Tricosane	638-67-5	100	%	65-144	01.17.18 23.45	





## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-5 FL @ 2 '

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-009

Date Collected: 01.14.18 08.40

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 01.19.18 11.40

Basis: Wet Weight

Seq Number: 3038795

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
Toluene	108-88-3	<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
Ethylbenzene	100-41-4	<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
m,p-Xylenes	179601-23-1	<0.0390	0.0390	mg/kg	01.20.18 21.32	U	1
o-Xylene	95-47-6	<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
Xylenes, Total	1330-20-7	<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
Total BTEX		<0.0195	0.0195	mg/kg	01.20.18 21.32	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	111	%	68-120	01.20.18 21.32		
a,a,a-Trifluorotoluene	98-08-8	115	%	71-121	01.20.18 21.32		



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-5 ESW**

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-010

Date Collected: 01.14.18 08.45

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	125	mg/kg	01.23.18 18.58	D	5



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: T-5 WSW

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-011

Date Collected: 01.14.18 08.50

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	458	25.0	mg/kg	01.23.18 19.10		1



## Certificate of Analytical Results 573689

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-5 SSW**

Matrix: Soil

Date Received: 01.16.18 16.58

Lab Sample Id: 573689-012

Date Collected: 01.14.18 08.55

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 01.23.18 12.00

Basis: Wet Weight

Seq Number: 3039062

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	533	125	mg/kg	01.23.18 19.48	D	5

- 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.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

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## QC Summary 573689

### TRC Solutions, Inc Jaguar 18 State #2H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039003

MB Sample Id: 7637914-1-BLK

Matrix: Solid

LCS Sample Id: 7637914-1-BKS

Prep Method: E300P

Date Prep: 01.23.18

LCSD Sample Id: 7637914-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	248	99	244	98	90-110	2	20	mg/kg	01.23.18 09:24	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039002

MB Sample Id: 7637944-1-BLK

Matrix: Solid

LCS Sample Id: 7637944-1-BKS

Prep Method: E300P

Date Prep: 01.23.18

LCSD Sample Id: 7637944-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	252	101	251	100	90-110	0	20	mg/kg	01.23.18 15:52	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039003

Parent Sample Id: 574173-001

Matrix: Soil

MS Sample Id: 574173-001 S

Prep Method: E300P

Date Prep: 01.23.18

MSD Sample Id: 574173-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<2.50	250	26.3	11	25.0	10	80-120	5	20	mg/kg	01.23.18 10:13	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039003

Parent Sample Id: 574204-002

Matrix: Soil

MS Sample Id: 574204-002 S

Prep Method: E300P

Date Prep: 01.23.18

MSD Sample Id: 574204-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	280	112	263	105	80-120	6	20	mg/kg	01.23.18 12:42	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039062

Parent Sample Id: 573689-003

Matrix: Soil

MS Sample Id: 573689-003 S

Prep Method: E300P

Date Prep: 01.23.18

MSD Sample Id: 573689-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	410	250	522	45	593	73	80-120	13	20	mg/kg	01.23.18 16:41	X

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

$[D] = 100 * (C-A) / B$   
 $RPD = 200 * | (C-E) / (C+E) |$   
 $[D] = 100 * (C) / [B]$

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



## QC Summary 573689

### TRC Solutions, Inc

Jaguar 18 State #2H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3039062

Parent Sample Id: 573689-012

Matrix: Soil

MS Sample Id: 573689-012 S

Prep Method: E300P

Date Prep: 01.23.18

MSD Sample Id: 573689-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	558	250	761	81	741	73	80-120	3	20	mg/kg	01.23.18 20:00	X

**Analytical Method: TPH by Texas1005**

Seq Number: 3038515

MB Sample Id: 7637603-1-BLK

Matrix: Solid

LCS Sample Id: 7637603-1-BKS

Prep Method: TX1005P

Date Prep: 01.17.18

LCSD Sample Id: 7637603-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Range Hydrocarbons	<25.0	100	107	107	106	106	66-139	1	20	mg/kg	01.17.18 15:34	
C12-C28 Range Hydrocarbons	<25.0	100	116	116	105	105	63-139	10	20	mg/kg	01.17.18 15:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
n-Triacontane	83		85		76		46-152	%	01.17.18 15:34
Tricosane	123		127		111		65-144	%	01.17.18 15:34

**Analytical Method: TPH by Texas1005**

Seq Number: 3038515

Parent Sample Id: 573689-001

Matrix: Soil

MS Sample Id: 573689-001 S

Prep Method: TX1005P

Date Prep: 01.17.18

MSD Sample Id: 573689-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Range Hydrocarbons	<25.0	100	94.3	94	98.3	98	66-139	4	20	mg/kg	01.17.18 21:58	
C12-C28 Range Hydrocarbons	<25.0	100	96.1	96	94.7	95	63-139	1	20	mg/kg	01.17.18 21:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
n-Triacontane	86		94		46-152	%	01.17.18 21:58
Tricosane	106		114		65-144	%	01.17.18 21:58

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

$[D] = 100 * (C-A) / B$   
 $RPD = 200 * |(C-E) / (C+E)|$   
 $[D] = 100 * (C) / [B]$

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





# QC Summary 573689

TRC Solutions, Inc  
Jaguar 18 State #2H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3038795

MB Sample Id: 7637742-1-BLK

Matrix: Solid

LCS Sample Id: 7637742-1-BKS

Prep Method: SW5030B

Date Prep: 01.19.18

LCSD Sample Id: 7637742-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.86	93	1.96	98	55-120	5	20	mg/kg	01.20.18 07:50	
Toluene	<0.0200	2.00	1.98	99	2.08	104	77-120	5	20	mg/kg	01.20.18 07:50	
Ethylbenzene	<0.0200	2.00	2.06	103	2.18	109	77-120	6	20	mg/kg	01.20.18 07:50	
Xylenes, Total	0	6	6.15	103	6.52	109	71-133	0	20	mg/kg	01.20.18 07:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	101		102		107		68-120	%	01.20.18 07:50
a,a,a-Trifluorotoluene	103		97		97		71-121	%	01.20.18 07:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3038795

Parent Sample Id: 573689-001

Matrix: Soil

MS Sample Id: 573689-001 S

Prep Method: SW5030B

Date Prep: 01.19.18

MSD Sample Id: 573689-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0198	1.98	1.73	87	1.86	93	54-120	7	25	mg/kg	01.20.18 19:44	
Toluene	<0.0198	1.98	1.89	95	2.03	102	57-120	7	25	mg/kg	01.20.18 19:44	
Ethylbenzene	<0.0198	1.98	2.01	102	2.18	110	58-131	8	25	mg/kg	01.20.18 19:44	
Xylenes, Total	0	5.94	6.03	102	6.53	109	71-133	0	20	mg/kg	01.20.18 19:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	106		107		68-120	%	01.20.18 19:44
a,a,a-Trifluorotoluene	107		109		71-121	%	01.20.18 19:44

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

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$

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



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Stafford, Texas (281-240-4200)  
Dallas, Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 1 Of 1

San Antonio, Texas (210-509-3334)  
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: Laguar 18 State #2H				Matrix Codes				W = Water S = Soil/Sed/Solid DW = Ground Water GW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WM = Waste Water A = Air			
Company Address: 2057 Commerce Drive Midland, TX 79703				Project Location: Lea Co, NM				Field Comments							
Email: jlowry@trcsolutions.com zconder@trcsolutions.com				Invoice To: COG Operating CIO Becky Haskell											
Project Contact: Joel Lowry				Invoice:											
Samplers Name: Zach Conder															
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	T-1 FL @ 6"	6"	1/14/2018	8:00	S	1									Hold
2	T-1 NSW	3"	1/14/2018	8:05	S	1									Chloride E 300
3	T-1 ESW	3"	1/14/2018	8:10	S	1									TPH 8015 M Ext
4	T-1 WSW	3"	1/14/2018	8:15	S	1									
5	T-2 FL @ 2'	2'	1/14/2018	8:20	S	1									
6	T-2 NSW	1'	1/14/2018	8:25	S	1									
7	T-2 ESW	1'	1/14/2018	8:30	S	1									
8	T-2 WSW	1'	1/14/2018	8:35	S	1									
9	T-5 FL @ 2'	2'	1/14/2018	8:40	S	1									
10	T-5 ESW	1'	1/14/2018	8:45	S	1									
11	T-5 WSW	1'	1/14/2018	8:50	S	1									
12	T-5 SSW	1'	1/14/2018	8:55	S	1									
Turnaround Time (Business days)															
Data Deliverable Information															
Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg (raw data) <input type="checkbox"/>															
Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/>															
Level 3 (CLP Forms) <input type="checkbox"/> UST / RG-411 <input type="checkbox"/>															
TRRP Checklist <input type="checkbox"/>															
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler: <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Contract TAT <input checked="" type="checkbox"/>															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
Relinquished by: <input type="checkbox"/> Date Time: <input type="checkbox"/> Received By: <input type="checkbox"/> Date Time: <input type="checkbox"/>															
Relinquished by: <input type="checkbox"/> Date Time: <input type="checkbox"/> Received By: <input type="checkbox"/> Date Time: <input type="checkbox"/>															
Relinquished by: <input type="checkbox"/> Date Time: <input type="checkbox"/> Received By: <input type="checkbox"/> Date Time: <input type="checkbox"/>															
On let Cooler Temp Therm. Corr. Factor															

Notice: Notice of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



**XENCO Laboratories**  
**Prelogin/Nonconformance Report- Sample Log-In**



**Client:** TRC Solutions, Inc

**Date/ Time Received:** 01/16/2018 04:58:00 PM

**Work Order #:** 573689

**Acceptable Temperature Range:** 0 - 6 degC

**Air and Metal samples Acceptable Range:** Ambient

**Temperature Measuring device used :** IR-3

**Sample Receipt Checklist**

**Comments**

#1 *Temperature of cooler(s)?	
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#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
#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:**

Brenda Ward  
Brenda Ward

Date: 01/17/2018

**Checklist reviewed by:**

Kelsey Brooks  
Kelsey Brooks

Date: 01/17/2018



# Certificate of Analysis Summary 574653

TRC Solutions, Inc, Midland, TX

Project Name: Jaguar 18 State #2H

Project Id: Jaugar 18 State #2H

Contact: Joel Lowry

Project Location: Lea Co. NM

Date Received in Lab: Fri Jan-26-18 06:00 pm

Report Date: 05-FEB-18

Project Manager: Kelsey Brooks

<b>Analysis Requested</b>	<b>Lab Id:</b>	574653-001					
	<b>Field Id:</b>	T-5 ESWb					
	<b>Depth:</b>	1- ft					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jan-25-18 14:00					
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	Feb-02-18 09:00					
	<b>Analyzed:</b>	Feb-02-18 12:28					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		227 25.0					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.  
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.  
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager

# **Analytical Report 574653**

**for**  
**TRC Solutions, Inc**

**Project Manager: Joel Lowry**

**Jaguar 18 State #2H**

**Jaugar 18 State #2H**

**05-FEB-18**

Collected By: Client



**6701 Aberdeen, Suite 9 Lubbock, TX 79424**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



05-FEB-18

Project Manager: **Joel Lowry**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **574653**  
**Jaguar 18 State #2H**  
Project Address: Lea Co. NM

**Joel Lowry:**

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 XENCO Report Number(s) 574653. 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 XENCO Laboratories. 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. 574653 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 XENCO Laboratories 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, appearing to read 'Kelsey Brooks', is written over a horizontal line.

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



## Sample Cross Reference 574653

**TRC Solutions, Inc, Midland, TX**

Jaguar 18 State #2H

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
T-5 ESWb	S	01-25-18 14:00	1 ft	574653-001





## CASE NARRATIVE

*Client Name: TRC Solutions, Inc*

*Project Name: Jaguar 18 State #2H*

Project ID: *Jaugar 18 State #2H*  
Work Order Number(s): *574653*

Report Date: *05-FEB-18*  
Date Received: *01/26/2018*

---

**Sample receipt non conformances and comments:**

---

**Sample receipt non conformances and comments per sample:**

None



## Certificate of Analytical Results 574653

### TRC Solutions, Inc, Midland, TX

Jaguar 18 State #2H

Sample Id: **T-5 ESWb**

Matrix: Soil

Date Received: 01.26.18 18.00

Lab Sample Id: 574653-001

Date Collected: 01.25.18 14.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.02.18 09.00

Basis: Wet Weight

Seq Number: 3040042

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	227	25.0	mg/kg	02.02.18 12.28		1



## 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.

**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

+ NELAC certification not offered for this compound.

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

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9701 Harry Hines Blvd, Dallas, TX 75220  
5332 Blackberry Drive, San Antonio TX 78238  
1211 W Florida Ave, Midland, TX 79701  
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



## TRC Solutions, Inc

Jaguar 18 State #2H

## Analytical Method: Chloride by EPA 300

Seq Number: 3040042

MB Sample Id: 7638528-1-BLK

Matrix: Solid

LCS Sample Id: 7638528-1-BKS

Prep Method: E300P

Date Prep: 02.02.18

LCSD Sample Id: 7638528-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	245	98	244	98	90-110	0	20	mg/kg	02.02.18 10:49	

## Analytical Method: Chloride by EPA 300

Seq Number: 3040042

Parent Sample Id: 575231-001

Matrix: Soil

MS Sample Id: 575231-001 S

Prep Method: E300P

Date Prep: 02.02.18

MSD Sample Id: 575231-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	257	103	250	100	80-120	3	20	mg/kg	02.02.18 11:26	

## Analytical Method: Chloride by EPA 300

Seq Number: 3040042

Parent Sample Id: 575272-015

Matrix: Soil

MS Sample Id: 575272-015 S

Prep Method: E300P

Date Prep: 02.02.18

MSD Sample Id: 575272-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	117	250	356	96	349	93	80-120	2	20	mg/kg	02.02.18 15:34	

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

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$

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



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Dallas Texas (214-902-0300)

574653

# CHAIN OF CUSTODY

Page 1 Of 1

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: Jaguar 18 State #2H				Matrix Codes				Xenco Job # 574653			
Company Address: 2057 Commerce Drive Midland, TX 79703				Project Location: Lea Co, NM				Matrix Codes				Matrix Codes			
Email: jlowry@trcsolutions.com zconder@trcsolutions.com				Invoice To: COG Operating CIO Becky Haskell				Matrix Codes				Matrix Codes			
Phone No: 432-466-4460				Invoice:				Matrix Codes				Matrix Codes			
Project Contact: Joel Lowry				Invoice:				Matrix Codes				Matrix Codes			
Sampler's Name: Zach Conder				Invoice:				Matrix Codes				Matrix Codes			
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	Number of preserved bottles	TPH 8015 M Ext	Chloride E 300	Hold	Field Comments				
1	T-5 ESWb	1'	1/25/2018	2:00	S	1	NONE								
2							MEOH								
3							NaHSO4								
4							NaOH								
5							H2SO4								
6							HNO3								
7							Acetate								
8							NaOH/Zn								
9							HCl								
10															
11															
12															
Turnaround Time (Business days)												Notes:			
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT												jlowry@trcsolutions.com			
<input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT												zconder@trcsolutions.com			
<input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT												rhaskell@concho.com			
<input type="checkbox"/> 3 Day EMERGENCY												kblackburn@trcsolutions.com			
TAT Starts Day received by Lab, if received by 5:00 pm												dneel2@concho.com			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY												FED-EX / UPS: Tracking #			
Relinquished by Sampler:												Received By:			
1 <i>[Signature]</i>												1 <i>[Signature]</i>			
Relinquished by:												Date Time:			
3 <i>[Signature]</i>												2			
Relinquished by:												Date Time:			
5 <i>[Signature]</i>												4			
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23 <i>[Signature]</i>												4			
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27 <i>[Signature]</i>												4			
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28 <i>[Signature]</i>												4			
Relinquished by:												Date Time:			
29 <i>[Signature]</i>												4			
Relinquished by:												Date Time:			
30 <i>[Signature]</i>												4			
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31 <i>[Signature]</i>												4			
Relinquished by:												Date Time:			
32 <i>[Signature]</i>												4			
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Relinquished by:												Date Time:			
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# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

Date/ Time Received: 01/26/2018 06:00:00 PM

Work Order #: 574653

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	6.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#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
#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)?	N/A
#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:

Brenda Ward  
Brenda Ward

Date: 01/26/2018

Checklist reviewed by:

Kelsey Brooks  
Kelsey Brooks

Date: 01/26/2018



## Photographic Log

**Client:** COG Operating, LLC  
**Project Name:** Jaguar 18 State #002H

**Prepared by:** TRC Environmental Corp.  
**Location:** Eddy County, NM

**Photograph No. 1**

**Description:**  
View of surface  
staining from initial  
release.

**Direction:**  
North



**Photograph No. 2**

**Description:**  
View of surface  
staining from initial  
release.

**Direction:**  
West





## Photographic Log

**Client:** COG Operating, LLC  
**Project Name:** Jaguar 18 State #002H

**Prepared by:** TRC Environmental Corp.  
**Location:** Eddy County, NM

**Photograph No. 3**

**Description:**  
View of the  
excavated area.

**Direction:**  
North



**Photograph No. 4**

**Description:**  
View of the  
excavated area.

**Direction:**  
South



## ***Photographic Log***

**Client:** COG Operating, LLC  
**Project Name:** Jaguar 18 State #002H

**Prepared by:** TRC Environmental Corp.  
**Location:** Eddy County, NM

**Photograph No. 5**

**Description:**  
**View of affected  
area after  
remediation  
activities.**

**Direction:**  
**Southwest**



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

Form C-141  
Revised August 8, 2011

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

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	OGRID# [229137]	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443	
Facility Name: JAGUAR 18 STATE #002H	Facility Type: Well	

Surface Owner: State	Mineral Owner:	API No. 30-025-41428
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LOCATION OF RELEASE

Unit Letter N	Section 18	Township 23S	Range 33E	Feet from the 330'	North/South Line South	Feet from the 1980'	East/West Line West	County Lea
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Latitude 32.29842

Longitude 103.61335

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 15bbls of Oil & 25bbls of Produced Water	Volume Recovered: 10bbls of Oil & 20bbls of Produced Water
Source of Release: Wellhead	Date and Hour of Occurrence: 3/29/2017 07:00 AM	Date and Hour of Discovery: 3/29/2017 07:00 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Ms. Yu - NMOCD / Ms. Groves - SLO	
By Whom? Robert Grubbs Jr	Date and Hour: Thu 3/30/2017 9:50 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

**RECEIVED**

By Olivia Yu at 8:33 am, Apr 07, 2017

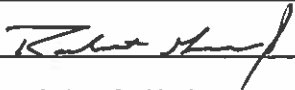

Describe Cause of Problem and Remedial Action Taken.\*

The release was caused by a valve that was left half way open on the north casing valve. Close valve.

Describe Area Affected and Cleanup Action Taken.\*

This release was contained on the pad. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Robert Grubbs Jr.	Approved by Environmental Specialist: 	
Title: Senior HSE Coordinator	Approval Date: 4/7/2017	Expiration Date:
E-mail Address: rgrubbs@concho.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>
Date: April 3, 2017	Phone: 432-683-7443	

\* Attach Additional Sheets If Necessary

1RP-4667

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