**APPROVED** By Olivia Yu at 10:14 am, Jun 15, 2018

NMOCD approves 1RP-4610 for closure.

## **REMEDIATION SUMMARY AND**

## SOIL CLOSURE REQUEST

COG Operating, LLC Blue Jay Federal #001H Battery Lea County, New Mexico Unit Letter "O", Section 18, Township 20 South, Range 35 East Latitude 32.56643° North, Longitude 103.49557° West NMOCD Reference No. 1RP-4610

Prepared For:

**COG Operating, LLC** 600 W Illinois Avenue Midland, Texas 79701

Prepared By:

**TRC Environmental Corporation** 10 Desta Drive, Suite 150E Midland, Texas 79705

June 2018

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Joel Lowry Senior Project Manager

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Curt Stanley Senior Project Manager

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### **INTRODUCTION**

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Soil Closure Request* for the Site known as Blue Jay Federal #001H Battery. The legal description of the Release Site is Unit Letter "O", Section 18, Township 20 South, Range 35 East, in Lea County, New Mexico. The subject property is administered by the United States Bureau of Land Management (BLM). The GPS coordinates for the site are N 32.56643° W 103.49557°. A "Site Location Map" and "Site & Sample Location Map" are provided as Figure 1 and Figure 2, respectively.

On January 25, 2017, COG discovered a crude oil release had occurred due to fluid running through the flare causing a fire. The release affected an area on the caliche pad with an additional area lightly misted in the pasture measuring approximately 49,809 square feet. On January 25, 2017, a COG representative notified the New Mexico Oil Conservation Division (NMOCD) and BLM of the release. A Release Notification and Corrective Action (Form C-141) was submitted to the NMOCD the same day. During initial response activities, a vacuum truck was dispatched to remove all freestanding fluids. Approximately ten (10) barrels of fluid was released, with approximately nine (9) barrels recovered. A copy of the NMOCD Form C-141 is provided as Appendix C. General photographs of the site are provided as Appendix B.

### NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 18, Township 20 South, Range 35 East. A reference map utilized by the NMOCD Hobbs District Office indicates groundwater should be encountered at approximately fifty (50) feet below ground surface (bgs). Based on the NMOCD site classification system, twenty (20) points will be assigned to the subject area ranking as a result of this criterion.

No water wells were observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No surface water was observed within one-thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

The NMOCD guidelines indicate the Blue Jay Federal #001H Battery Release Site has a ranking score of twenty (20). The Recommended Remediation Action Levels (RRAL) for a site with a ranking score of twenty (20) points are as follows:

- Benzene 10 mg/kg (ppm)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) 50 mg/kg (ppm)
- Total Petroleum Hydrocarbons (TPH) 100 mg/kg (ppm)
- Chloride 250 mg/kg (ppm)

### INITIAL INVESTIGATION AND PROPOSED REMEDIATION WORKPLAN

On February 7, 2017, a COG Representative collected twelve (12) delineation soil samples (T1-Surface, T1-1', T1-2', T1-3', T2-Surface, T2-1', T2-2', T2-3', T3-Surface, T3-1', T3-2' and T3-3') from the impacted area. The collected soil samples were submitted to Cardinal Laboratories in Hobbs, New Mexico for analysis of BTEX using Method SW 846-8021B, TPH using Method SW 846-8015M, and chloride using Method SM 4500 Cl-B. Laboratory analytical results indicated benzene and BTEX concentrations were less than the applicable laboratory Method Detection Limit (MDL) and NMOCD RRAL in each of the submitted soil samples. Analytical results indicated TPH concentrations were less than the applicable laboratory MDL and NMOCD RRAL in each of the submitted soil samples T2-Surface (4,396.9 mg/kg), T2-1' (178 mg/kg), and T3-Surface (2,240 mg/kg), which were above NMOCD regulatory guidelines. Chloride concentrations ranged from 16 mg/kg for soil samples T1-Surface, T2-1' and T3-1' to 80 mg/kg for soil samples T3-Surface, A review of laboratory analytical results indicated chloride concentrations were below NMOCD RRAL in each of the submitted samples. Laboratory analytical results are summarized on Table 1 – Concentrations of Benzene, BTEX, TPH and Chloride in Soil. Laboratory analytical reports are provided in Appendix A.

On September 8, 2017, a TRC Representative collected six (6) soil samples (T1a 0-3", T2a 0-3", T2a 1.5', T3a 0-6", OS-1 0-6", and OS-2 0-6") from the affected area as requested by the BLM and/or NMOCD. The soil samples were submitted to Xenco Laboratories in Midland, Texas for determination of concentrations of BTEX using Method SW 846-8021B, TPH using Method SW 846-8015M Ext. and/or chloride using Method E 300. Laboratory analytical results indicated benzene and BTEX concentrations were less than the applicable laboratory MDL in each of the submitted soil samples, with the exception of soil samples T2a 0-3" and T3a 0-6", which exhibited BTEX concentrations of 0.0896 mg/kg and 0.05347 mg/kg, respectively. Review of laboratory analytical results indicated BTEX concentrations were below NMOCD RRAL in each of the submitted soil samples. Analytical results indicated TPH concentrations ranged from less than applicable laboratory MDL for soil samples T3a 0-6", OS-1 0-6", and OS-2 0-6" to 8,010 mg/kg for soil sample T2a 0-3". Review of laboratory analytical results indicated TPH concentrations were below NMOCD RRAL for soil samples T3a 0-6" and OS-1 0-6". Laboratory analytical results indicated soil samples OS-1 0-6" and OS-2 0-6" exhibited chloride concentrations of less than the laboratory MDL and 6.50 mg/kg, respectively. In addition, two (2) composite soil samples (Composite-1 and Composite-2) were collected from the affected portion of the soil stockpile adjacent to caliche pad and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations were less than applicable laboratory MDL in each of the submitted soil samples. Soil samples Composite-1 and Composite-2 exhibited TPH concentrations of 7,110 mg/kg and 2,455 mg/kg, respectively.

On December 4, 2017, TRC submitted an *Amended Soil Investigation Summary and Proposed Remediation Workplan (Workplan)*, to the NMOCD and BLM on behalf of COG, designed to advance the site toward an approved closure. The *Workplan* proposed excavating affected areas represented by test trenches T1 and T1a to a depth of three (3) to six (6) inches bgs, affected areas represented by test trenches T2 and T2a would be excavated to approximately two (2) feet bgs, and no excavation activities would be performed in the area on the caliche pad or vegetated area represented by test trenches T3 and T3a. Affected portions of the soil stockpile adjacent to the caliche pad characterized by soil samples Composite-1 and Composite-2 would be excavated to approximately six (6) to eight (8) inches bgs. Excavated soil would then be temporarily stockpiled

on a plastic liner adjacent to the excavation, pending transportation to a NMOCD-approved disposal facility. Following remediation activities, an appropriate number of excavation floor soil samples, spaced at approximately every fifty (50) feet, would be collected and submitted to the laboratory for determination of concentrations of BTEX, TPH, and chloride. In addition, a minimum of four (4) soil samples would be collected from the sidewalls of the excavated area to confirm horizontal delineation of the impacted soil. Upon receipt of favorable laboratory analytical results from confirmation soil samples, the excavated impacted soil would be transported under manifest to an NMOCD-approved disposal facility. The *Workplan* was subsequently approved by the NMOCD and BLM.

### SUMMARY OF SOIL REMEDIATION ACTIVITIES

On February 19, 2018, remediation activities commenced at the Release Site. As per the approved *Workplan*, affected areas represented by test trenches T1 and T1a were excavated to a depth of approximately three (3) to six (6) inches (in.) bgs. Affected areas represented by test trenches T2 and T2a were excavated to approximately two (2) feet (ft.) bgs. Impacted soil on the top soil stockpile adjacent to the caliche pad was excavated to approximately six (6) to eight (8) in. bgs.

On February 21, 2018, TRC collected thirteen (13) excavation confirmation soil samples (T-1 FL @ 6", T-1 NSW, T-1 WSW, T-1 SSW, T-2 FL @ 2', T-2 NSW, T-2 ESW, T-2 SSW, T-2 WSW, Pt. 1, Pt. 2, Pt. 3 and Pt. 4) from the floor and sidewalls of the excavated area and submitted them to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX and chloride concentrations were below the laboratory MDL in each of the submitted soil samples. Analytical results indicated TPH concentrations were below NMOCD RRAL in each of the submitted soil samples, with the exception of soil samples T-1 WSW (368 mg/kg), T-2 ESW (186 mg/kg), and Pt. 4 (313 mg/kg). The excavation was advanced in the areas characterized by soil samples T-1 WSW, T-2 ESW and Pt. 4.

On February 27, 2018, TRC collected two (2) excavation confirmation soil samples (T-1 WSWb and T-2 ESWb) from the sidewalls of the excavated area and submitted them to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were below the laboratory MDL in each of the submitted soil samples.

On March 2, 20108, TRC collected three (3) additional soil samples (Pt. 4b, OS-1b and OS-2b) and submitted them to the laboratory for analysis of TPH. Laboratory analytical result indicated TPH concentrations range from 30.4 mg/kg for soil sample OS-2b to 280.3 mg/kg for soil sample OS-1b. Soil samples OS-1b and OS-2b were also analyzed for concentrations of BTEX and chloride, which were determined to be less than the applicable laboratory MDL. Review of laboratory analytical results indicated TPH, BTEX and chloride concentrations were below the NMOCD RRAL in each of the analyzed soil samples, with the exception of the TPH concentrations in soil samples Pt. 4b (133.6 mg/kg) and OS-1b (280.3 mg/kg).

On April 4, 2018, areas represented by soil samples Pt. 4b and OS-1b were resampled in accordance with the NMOCD request. Two (2) soil samples (OS-1C and Pt.4C) were collected and submitted to the laboratory for analysis of TPH concentrations, which were determined to be below the laboratory MDL.

Upon receiving laboratory analytical results from confirmation soil samples, the excavation was backfilled with locally-source, non-impacted "like" material. Excavation backfill was graded to meet the needs of the facility and contoured to match the surrounding areas. Prior to backfilling the final dimensions of the excavation were one hundred thirty-five (135) ft. in length, twenty (20) to eighty (80) ft. in width and six (6) in. to two (2) ft. in depth.

Between February 20 and 22, 2017, approximately one hundred and thirty-two (132) cubic yards (cy) of impacted soil was transported to an NMOCD-permitted disposal facility.

### SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD- and BLM-approved *Workplan* and/or associated correspondence. Based on laboratory analytical results from confirmation soil samples and field activities conducted to date, TRC recommends COG provide copies of this *Remediation Summary and Soil Closure Request* to the NMOCD and BLM and request closure status to the Blue Jay Federal #001H Battery.

### 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.

### DISTRIBUTION

Copy 1: Olivia Yu New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, District 1 1625 French Drive Hobbs, NM 88240 Copy 2: Henryetta Price Carlsbad Field Office United States Department of the Interior Bureau of Land Management 620 E. Greene Street Carlsbad, New Mexico 88220 Copy 3: Rebecca Haskell COG Operating, LLC 600 W. Illinois Avenue Midland, Texas 79701 Copy 4: TRC Environmental Corporation 2057 Commerce Street Midland, Texas 79703



	T-2 FL @ 2'       T-2 NSW         T-1 NSW       Pi 4         T-1 WSWb       G' bs         T-1 FL @ 6''       T-2 NSW         T-1 SSW       T-2 NSW         T1 SSW       T-2 NSW         T1 SSW       T-2 NSW	b Composite 1 Composite 1 Corr Corr T-2 ESW T-2 ESWb T2 T2a	Pt.3	0021
LEGEND: Confirmation Sample Location Excavated Sample Location	Test Trench Overspray Area	Figure 2 Site & Sample Location Map COG Operating, LLC Bluejay Federal #001H Battery	Scale 1" = ~50'           Drafted by: ZC         Checked by: JL           Draft: May 15, 2018	
Excavated Area		Lea County, New Mexico	UL "O", Sec. 18, T20S, R35E TRC Proj. No.: 279776	2057 Commerce Drive Midland, Texas 79703 432.520.7720

#### TABLE 1

#### CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

#### COG Operating LLC BLUE JAY FEDERAL #001H BATTERY (1RP-4610) LEA COUNTY, NEW MEXICO

				METHODS: SW 846-8021b					METHOD: SW 8015M E 30			E 300.1	SM4500Cl-B	
SAMPLE LOCATION	SAMPLE	SOIL			ETHYL-	TOTAL	TOTAL	TPH GRO	TPH DRO	TPH ORO		TOTAL TPH		
	DATE	STATUS	BENZENE	TOLUENE	BENZENE	XYLENES	BTEX	C6-C10	C10-C28	C28-C35	C6-C28	C6-C35	CHLORIDE	CHLORID
T1-Surface	02/07/17	Excavated	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	16.0
T1-1'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	32.0
T1-2'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	64.0
T1-3'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	64.0
			I							F	1	1		· · · ·
T2-Surface	02/07/17	Excavated	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	16.9	4,380	-	4,396.9	-	-	64.0
T2-1'	02/07/17	Excavated	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	178	-	178	-	-	16.0
T2-2'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	32.0
T2-3'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	64.0
T3-Surface	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	2.240	-	2,240		-	80.0
T3-1'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	<0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	16.0
T3-2'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	<0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	48.0
T3-3'	02/07/17	In-Situ	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0	-	<10.0	-	-	32.0
T1a 0-3"	09/08/17	Excavated	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	179	47.3	-	226.3	-	-
T2a 0-3"	09/08/17	Excavated	< 0.00787	0.0441	0.0103	0.0352	0.0896	<15.0	6,630	1,380	-	8,010	-	-
T2a 1.5'	09/08/17	Excavated	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	169	20.4	-	189.4	-	-
T3a 0-6"	09/08/17	In-Situ	< 0.00398	0.0259	0.00657	0.021	0.05347	<15.0	<15.0	<15.0	-	<15.0	-	-
OS-1 0-6"	09/08/17	In-Situ	< 0.00375	< 0.00375	< 0.00375	< 0.00375	< 0.00375	<15.0	<15.0	<15.0	-	<15.0	-	< 5.00
OS-2 0-6"	09/08/17	In-Situ	< 0.00369	< 0.00369	< 0.00369	< 0.00369	< 0.00369	<14.9	19.4	<14.9	-	19.4	-	6.50
Composite-1	09/08/17	Excavated	< 0.00386	< 0.00386	< 0.00386	< 0.00386	< 0.00386	<14.9	5,260	1,850	-	7,110	-	-
Composite-2	09/08/17	Excavated	< 0.00380	< 0.00380	< 0.00380	< 0.00380	< 0.00380	<15.0	1,870	585	-	2,455	-	-
T-1 FL @ 6"	02/21/18	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.002	<15.0	29.5	<15.0	-	29.5	< 5.00	-
T-1 NSW	02/21/18	In-Situ In-Situ	<0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.002	<15.0	29.5	<15.0	-	29.5	<5.00	-
T-1 WSW	02/21/18	Excavated	<0.00138	< 0.00138	<0.00198	< 0.00138	< 0.00138	<15.0	368	<15.0	-	368	<4.97	-
T-1 SSW	02/21/18	In-Situ	<0.00338	< 0.00338	< 0.00338	< 0.00200	< 0.002	<15.0	72.6	<15.0	-	72.6	<4.91	
T-2 FL @ 2'	02/21/18	In-Situ	< 0.0200	< 0.0200	< 0.00200	< 0.0200	< 0.0200	<14.9	36.2	<14.9	-	36.2	<4.90	-
T-2 NSW	02/21/18	In-Situ	< 0.00339	< 0.00339	< 0.00339	< 0.00339	< 0.00339	<15.0	<15.0	<15.0	-	<15	<4.90	-
T-2 ESW	02/21/18	Excavated	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<14.9	186	<14.9	_	186	<5.00	-
T-2 SSW	02/21/18	In-Situ	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.002	<15.0	<15.0	<15.0	_	<15	<4.92	
T-2 WSW	02/21/18	In-Situ	< 0.00339	< 0.00339	< 0.00339	< 0.00339	< 0.00339	<15.0	<15.0	<15.0	-	<15	<5.00	-
Pt. 1	02/21/18	In-Situ	< 0.00332	< 0.00332	< 0.00332	< 0.00332	< 0.00332	<15.0	<15.0	<15.0	-	<15	<5.00	-
Pt. 2	02/21/18	In-Situ	< 0.00199	< 0.00199	< 0.00199	< 0.00199	< 0.00199	<15.0	<15.0	<15.0	-	<15	<5.00	-
Pt. 3	02/21/18	In-Situ	< 0.00201	< 0.00201	< 0.00201	< 0.00201	< 0.00201	<15.0	24.3	<15.0	-	24.3	<5.00	-
Pt. 4	02/21/18	Excavated	< 0.00202	< 0.00202	< 0.00202	< 0.00202	< 0.00202	<15.0	313	<15.0	-	313	<5.00	-
T-1 WSWb	2/27/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	-	<15	-	-
T-2 ESWb	2/27/2018	In-Situ	-	-	-	-	-	<15.0	<15.0	<15.0	-	<15	-	-
Pt. 4b	03/02/18	Dagamm <sup>1</sup> 1	L -	_			-	<15.0	109	24.6	I -	133.6	-	
OS-1b	03/02/18	Resampled		- <0.00341	- <0.00341	- <0.00341	- <0.00341	<15.0	226	24.6 54.3		280.3		-
OS-16 OS-26	03/02/18	Resampled In-Situ	<0.00341 <0.00332	< 0.00341	< 0.00341	< 0.00341	< 0.00341	<15.0	30.4	<15.0	-	30.4	<5.00 <4.95	-
03-20	05/02/18	m-situ	-0.00332	-0.00332	-0.00332	-0.00552	-0.00552	~15.0	50.4	~15.0	-		~т. <i>) J</i>	-
OS-1C	04/04/18	In-Situ	- 1	-	-	-	-	<3.68	<24.9	<24.9	-	<24.9	-	-
Pt4C	04/04/18	In-Situ	-	-	-		-	<3.86	<25.1	<25.1	-	<25.1	-	-
MOCD Site Classification														



February 22, 2017

AARON LIEB

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: BLUE JAY FEDERAL #001H

Enclosed are the results of analyses for samples received by the laboratory on 02/15/17 12:00.

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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 1 - SURFACE (H700396-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.5	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/16/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/16/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	78.6	% 35-147							
Surrogate: 1-Chlorooctadecane	90.6	% 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 1 - 1' (H700396-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.7	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/16/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/16/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	87.4	% 35-147							
Surrogate: 1-Chlorooctadecane	92.9	28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 1 - 2' (H700396-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.2	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/16/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/16/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	79.1	% 35-147	,						
Surrogate: 1-Chlorooctadecane	88.9	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 1 - 3' (H700396-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.4	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/16/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/16/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	82.2	% 35-147	,						
Surrogate: 1-Chlorooctadecane	90.2	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 2 - SURFACE (H700396-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	16.9	10.0	02/16/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	4380	10.0	02/16/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	84.7	% 35-147	,						
Surrogate: 1-Chlorooctadecane	155 9	6 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 2 - 1' (H700396-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.5	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	178	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	90.9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	94.6	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 2 - 2' (H700396-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	<i>98.3</i>	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	76.6	% 35-147	,						
Surrogate: 1-Chlorooctadecane	88.2	% 28-171							

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T2 - 3' (H700396-08)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.6	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	81.5	% 35-147	,						
Surrogate: 1-Chlorooctadecane	91.3	% 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T 3 - SURFACE (H700396-09)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.0	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	2240	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	92.2	% 35-147	,						
Surrogate: 1-Chlorooctadecane	142 9	28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T3 - 1' (H700396-10)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.7	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	86.4	% 35-147	,						
Surrogate: 1-Chlorooctadecane	99.4	% 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T3 - 2' (H700396-11)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.8 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	79.9 \$	% 35-147							
Surrogate: 1-Chlorooctadecane	96.9 \$	26 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Received:	02/15/2017	Sampling Date:	02/07/2017
Reported:	02/22/2017	Sampling Type:	Soil
Project Name:	BLUE JAY FEDERAL #001H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: T3 - 3' (H700396-12)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2017	ND	2.02	101	2.00	7.72	
Toluene*	<0.050	0.050	02/19/2017	ND	1.88	94.2	2.00	9.17	
Ethylbenzene*	<0.050	0.050	02/19/2017	ND	1.84	92.0	2.00	12.1	
Total Xylenes*	<0.150	0.150	02/19/2017	ND	5.25	87.4	6.00	12.0	
Total BTEX	<0.300	0.300	02/19/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.9	% 73.6-14	0						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/20/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/17/2017	ND	187	93.3	200	0.843	
DRO >C10-C28	<10.0	10.0	02/17/2017	ND	201	100	200	0.331	
Surrogate: 1-Chlorooctane	83.0	% 35-147	,						
Surrogate: 1-Chlorooctadecane	96.7	% 28-171							

#### Cardinal Laboratories

\*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

	101 East Mariand, house, ivin ours	TANK CONTO								
(	(575) 393-2326 FAX (575) 393-2476	) 393-2476						Þ	ANALYSIS	REQUEST
Company Name:	COG Operating LLC			- W	DILLIN			-		_
Project Manager:	Aaron Lieb			P.O. #:		1		_	_	_
Address: 2407 P	2407 Pecos Avenue			Company: 0	COG Operating LLC	EC		_		
Arte		State: NM	Zip 88210	Attn:	Robert McNeill			_		
NICOID	575-748-1553 Fax #:	ar .		Address:	600 W Illinois			_		_
		Project Owner:		City:	Midland			_		
				State: TX	Zip: 79701					
Project Name: Blu	Blue Jay Federal #00111			IAN	1 224 DABU		_		_	_
Project Location:				Phone #: (432) 221-0388	) 221-0388			_		
Sampler Name:	Aaron Lieb			Fau				_		
FOR LAB USE ONLY		P	MATRIX	PRESERV.	SAMPLING				_	_
Lab I.D.	Sample I.D.	G)RAB OR (C)OM	# CONTAINERS GROUNDWATER WASTEWATER SOIL OIL	SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	DATE T	BTEX	трн	Chloride		
pilo Jio	T1-Surface		- #	×	2/7/17 1:0	1:00PM X	×	×		
3-	T1-1		×	×	2/7/17 1:0	1:00PM X		×		
24	T1-2'		×	×	2/7/17 1:0	1:00PM X	1.0	×		
=2	T1-3		×	×	2/7/17 1:	1:00PM X	-	×		
R	T2-Surface		×	×	2/7/17 1:			×		
54	T2-1'		×	×	2/7/17 1:	PM	-	×		
7	T2-2'		×	×	1:30	PM	-	< >		
\$	T2-3'		X	×	1111/12	1:30 PM A	>	>		
					T.	1.30 PM	F	F		
PLEASE NOTE: Liability and analyses All claims including	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 pad by the client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount pad by the client or pre- analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 deemed by client. Its subsidiarities, analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 deemed by client. Its subsidiarities, analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 deemed by client.	usive remedy for any latsoever shall be der	claim arising whether based in co emed waived unless made in writ	ontract or tort, shall be limited ing and received by Cardinal shore loss of use or loss of p	to the amount paid by tr within 30 days after com profits incurred by client,	pletion of the appl ts subsidiaries,	icable			
service. In no event shall Carr affiliates or successors arising	Cardinal be liable for incidental or consequential damages, including without immunous, unanessand or consequential damages, including without immunous of services hereunder by Cardinal, sugardiess of whether such claim is based upon any of the above stated reasons or otherwise.  State of the consequential damages, including without immunous or services hereunder by Cardinal, unanessand whether such claim is based upon any of the above stated reasons or otherwise.  State of the consequential damages, including without immunous or services hereunder by Cardinal, unanessand whether such claim is based upon any of the above stated reasons or otherwise.  State of the consequential damages, including without immunous or services of the consequence o	tamages, including w bes hereunder by Can	various immanors, vocannos man or you chaim is based upon any of the above stated arcinal, regardless of whether such claim is based upon any of the above stated pocoivood Rv.	1 claim is based upon any of the	he above stated reasons	Phone Result:			Add'I Phone #:	开
Relinquistied By: Relinquished By:		200-17	Received By: Received By:	Henson		Fax Result: Ves Fax Result: Ves REMARKS: dneel2@concho.com alleb@concho.com rgrubbs@concho.com rhaskell@concho.com	I Yes		Add'l Fax #:	
Delivered By: (Circle One)	(Circle One)	キーろ	Sample Condition	A Yes	KED BY: itials)					
Sampler - UPS -	Bus - Oniei.			No 2						

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	(575) 393-2326 FAX (575) 393-2470	0140		51	BILL TO					ANALYSIS REQUEST
Project Manager: /	Aaron Lieb			P.O. #:			-	-		
Address: 2407 Peo	2407 Pecos Avenue			Company:	COG Operating LLC	g LLC				
ITE	State: NM	Zip	88210	Attn:	Robert McNeill	=				
e #:	575-748-1553 Fax #:			Address:	600 W Illinois	Sic	_	-		
~	Project Owner:	er:		City:	Midland		_			
ame:	Blue Jay Federal #001H			State: TX	Zip: 79701					
piect I ocation:				Phone #: (432) 221-0388	32) 221-0388		_	_		
-	A show I solo			Fax #:			_	-		
Sampler Name:	Aaron Lieb		MATRIX	PRESERV.	SAMPLING	G	_			
Lab I.D.	Sample I.D.	B)RAB OR (C)OMP. CONTAINERS ROUNDWATER	VASTEWATER OIL	CID/BASE: CID/BASE: CE / COOL	DATE	TIME	BTEX	TPH Chloride		
DICON H	TO Curfana	#	×	×	2/7/17	2:00PM	×	××		
2	I D-Sullace		×	×	2/7/17	2:00PM	×	× ×		
10	13-1 T2-2'	-	×	×	2/7/17	2:00PM	×	××		
12	T3-3'		×	×	2/7/17	2:00PM	×	×		
					od to the amount pad	by the client for th	6			
PLEASE NOTE: Liability and Dama analyses. All claims including those service. In no event shall Cardingho	pes. Cardinal's liability and clip or negligence and any other slable for incidental or conse	for any claim arising all be deemed waived luding without limita6 r by Cardinal. recard	y whether based in co d unless made in writi ion, business interrup gless of whether such	nt's exclusive remedy for any claim arising whether based in contract or tort, shall be inmited to the mount pad by the client for the cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the querital damages, including without limitation, business interruptions, loss of tracks, or loss of profits incurred by client, its subsidiaries or receive howanoter by Cardinal repardless of whother such claim is based upon any of the above stated reasons or otherwise.	ed to the amount paid al within 30 days after of profits incurred by cl of the above stated rea	by the client for the completion of the lient, its subsidiarie sons or otherwise	pplicable			Add'l Phone #:
Relinquished By:	or related the performance	-00 Received By: Received By:	ed By: ed By:	Alema band upon any or the an	en la	Phone Result: Yes Fax Result: Yes REMARKS: dineel2@concho.com alleb@concho.com rgrubbs@concho.com rhaskell@concho.com	ult: ncho.h concl	□ Yes □ Yes 00.com .com .ho.com	N N	Add'l Phone #: Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other	(Circle One)	2 40	Sample Condition	-	CHECKED BY:					

VSIS REOLIEST



Project Id:Contact:Nikki GreenProject Location:Lea County NM

Certificate of Analysis Summary 562479

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H (1/25/17)



Date Received in Lab:Mon Sep-11-17 03:03 pmReport Date:19-SEP-17Project Manager:Kelsey Brooks

	Lab Id:	562479-	001	562479-	002	562479-0	003	562479-0	004	562479-0	005	562479-0	006
Analysis Doguostod	Field Id:	T1a 0-3	3"	T2a 0-3	3"	T2a 1.5	;"	T3a 0-6	5"	OS-1 0-	6"	OS-2 0-	6"
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL	,								
	Sampled:	Sep-08-17	11:05	Sep-08-17	10:55	Sep-08-17	10:40	Sep-08-17	11:00	Sep-08-17	10:45	Sep-08-17	10:50
BTEX by EPA 8021B	Extracted:	Sep-13-17	08:00	Sep-14-17	08:37	Sep-13-17	13:00	Sep-14-17	16:00	Sep-14-17	08:37	Sep-14-17	08:37
	Analyzed:	Sep-13-17	10:01	Sep-14-17	17:26	Sep-13-17	22:47	Sep-15-17	09:52	Sep-14-17	11:47	Sep-14-17	12:06
	Units/RL:	mg/kg	RL										
Benzene		< 0.00201	0.00201	< 0.00787	0.00787	< 0.00199	0.00199	< 0.00398	0.00398	< 0.00375	0.00375	< 0.00369	0.00369
Toluene		< 0.00201	0.00201	0.0441	0.00787	< 0.00199	0.00199	0.0259	0.00398	< 0.00375	0.00375	< 0.00369	0.00369
Ethylbenzene		< 0.00201	0.00201	0.0103	0.00787	< 0.00199	0.00199	0.00657	0.00398	< 0.00375	0.00375	< 0.00369	0.00369
Xylenes, Total		< 0.00201	0.00201	0.0352	0.00787	< 0.00199	0.00199	0.021	0.00398	< 0.00375	0.00375	< 0.00369	0.00369
Total BTEX		< 0.00201	0.00201	0.0896	0.00787	< 0.00199	0.00199	0.05347	0.00398	< 0.00375	0.00375	< 0.00369	0.00369
Chloride by EPA 300	Extracted:									Sep-15-17	13:15	Sep-15-17	13:15
	Analyzed:									Sep-15-17	18:07	Sep-15-17	18:15
	Units/RL:									mg/kg	RL	mg/kg	RL
Chloride										< 5.00	5.00	6.50	4.97
TPH by SW8015 Mod	Extracted:	Sep-12-17	16:00										
	Analyzed:	Sep-13-17	03:22	Sep-13-17	07:15	Sep-13-17	04:48	Sep-13-17	05:09	Sep-13-17	05:29	Sep-13-17	05:50
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Diesel Range Organics (DRO)		179	15.0	6630	15.0	169	15.0	<15.0	15.0	<15.0	15.0	19.4	14.9
Oil Range Hydrocarbons (ORO)		47.3	15.0	1380	15.0	20.4	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Total TPH		226.3	15	8010	15	189.4	15	<15	15	<15	15	19.4	14.9

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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Huns Boah

Kelsey Brooks Project Manager

Final 1.000



Project Id:Contact:Nikki GreenProject Location:Lea County NM

Certificate of Analysis Summary 562479

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H (1/25/17)



Date Received in Lab:Mon Sep-11-17 03:03 pmReport Date:19-SEP-17Project Manager:Kelsey Brooks

	Lab Id:	562479-0	007	562479-0	008			
An alunia Domunata d	Field Id:	Composit	e-1	Composi	te-2			
Analysis Requested	Depth:							
	Matrix:	SOIL		SOIL				
	Sampled:	Sep-08-17	10:30	Sep-08-17	10:35			
BTEX by EPA 8021B	Extracted:	Sep-14-17 (	08:37	Sep-14-17	08:37			
	Analyzed:	Sep-14-17	12:24	Sep-14-17	12:43			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Benzene		< 0.00386	0.00386	< 0.00380	0.00380			
Toluene		< 0.00386	0.00386	< 0.00380	0.00380			
Ethylbenzene		< 0.00386	0.00386	< 0.00380	0.00380			
Xylenes, Total		< 0.00386	0.00386	< 0.0038	0.0038			
Total BTEX		< 0.00386	0.00386	< 0.0038	0.0038			
TPH by SW8015 Mod	Extracted:	Sep-12-17	16:00	Sep-12-17	16:00			
	Analyzed:	Sep-13-17 (	07:34	Sep-13-17	06:34			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0			
Diesel Range Organics (DRO)		5260	14.9	1870	15.0			
Oil Range Hydrocarbons (ORO)		1850	14.9	585	15.0			
Total TPH		7110	14.9	2455	15			

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

Page 2 of 21

# Analytical Report 562479

for TRC Solutions, Inc

Project Manager: Nikki Green

Blue Jay Federal #001H (1/25/17)

## 19-SEP-17

Collected By: Client





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

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400) Xenco-San Antonio: Texas (T104704534) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



19-SEP-17



Project Manager: **Nikki Green TRC Solutions, Inc** 2057 Commerce Midland, TX 79703

Reference: XENCO Report No(s): **562479 Blue Jay Federal #001H (1/25/17)** Project Address: Lea County NM

### Nikki Green:

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) 562479. 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. 562479 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,

Huns hoah

Kelsey Brooks Project Manager

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### Sample Id

T1a 0-3"	
T2a 0-3"	
T2a 1.5"	
T3a 0-6"	
OS-1 0-6"	
OS-2 0-6"	
Composite-1	
Composite-2	

# Sample Cross Reference 562479



Matrix	Date Collected	Sample Depth	Lab Sample Id
S	09-08-17 11:05		562479-001
S	09-08-17 10:55		562479-002
S	09-08-17 10:40		562479-003
S	09-08-17 11:00		562479-004
S	09-08-17 10:45		562479-005
S	09-08-17 10:50		562479-006
S	09-08-17 10:30		562479-007
S	09-08-17 10:35		562479-008





## CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: Blue Jay Federal #001H (1/25/17)

Project ID: Work Order Number(s): 562479 Report Date: *19-SEP-17* Date Received: *09/11/2017* 

### Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3027465 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3027595 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3027682 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis. Samples affected are: 562479-004.

Batch: LBA-3027739 BTEX by EPA 8021B Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis. Samples affected are: 562479-005,562479-002,562479-007,562479-006.

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





## TRC Solutions, Inc, Midland, TX

Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3027473							
Analyst:	ARM		Date Prep:	09.12.17 16.00	В	asis: We	t Weight	
Tech:	ARM				%	Moisture:		
Analytical Me	ethod: TPH by SW8015	Mod			Р	rep Method: TX	1005P	
1	d: 562479-001		Date Collect	ed: 09.08.17 11.05				
Sample Id:	T1a 0-3''		Matrix:	Soil	D	ate Received:09.	11.17 15.03	3

Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	09.13.17 03.22	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	179	15.0		mg/kg	09.13.17 03.22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	47.3	15.0		mg/kg	09.13.17 03.22		1
Total TPH	PHC635	226.3	15		mg/kg	09.13.17 03.22		1
Surrogate		Cas Number	% Recoverv	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	Recovery 95	%	70-135	09.13.17 03.22	8	
o-Terphenyl		84-15-1	90	%	70-135	09.13.17 03.22		

Analytical M	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.13.17 08.00	Basis:	Wet Weight
Seq Number:	3027465				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	09.13.17 10.01	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	09.13.17 10.01	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	09.13.17 10.01	U	1
Xylenes, Total	1330-20-7	< 0.00201	0.00201		mg/kg	09.13.17 10.01	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	09.13.17 10.01	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	86	%	80-120	09.13.17 10.01		
1,4-Difluorobenzene		540-36-3	99	%	80-120	09.13.17 10.01		





## TRC Solutions, Inc, Midland, TX

Sample Id: <b>T2a 0-3''</b> Lab Sample Id: 562479-002		Matrix: Date Collecte	Soil d: 09.08.17 10.55		Date Received	1:09.11.17 15.03	;
Analytical Method: TPH by SW8015 Tech: ARM Analyst: ARM Seq Number: 3027473	Mod	Date Prep:	09.12.17 16.00		Prep Method: % Moisture: Basis:	TX1005P Wet Weight	
Parameter	Cas Number	Result R	L	Units	Analysis Da	ate Flag	Dil

1 arameter	Cas Mulliber	Ktsuit	KL		Units	Analysis Date	riag	Dii
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	09.13.17 07.15	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	6630	15.0		mg/kg	09.13.17 07.15		1
Oil Range Hydrocarbons (ORO)	PHCG2835	1380	15.0		mg/kg	09.13.17 07.15		1
Total TPH	PHC635	8010	15		mg/kg	09.13.17 07.15		1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	09.13.17 07.15		
o-Terphenyl		84-15-1	123	%	70-135	09.13.17 07.15		

Analytical Me	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.14.17 08.37	Basis:	Wet Weight
Seq Number:	3027739				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00787	0.00787		mg/kg	09.14.17 17.26	U	2
Toluene	108-88-3	0.0441	0.00787		mg/kg	09.14.17 17.26		2
Ethylbenzene	100-41-4	0.0103	0.00787		mg/kg	09.14.17 17.26		2
Xylenes, Total	1330-20-7	0.0352	0.00787		mg/kg	09.14.17 17.26		2
Total BTEX		0.0896	0.00787		mg/kg	09.14.17 17.26		2
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	70	%	80-120	09.14.17 17.26	***	
1,4-Difluorobenzene		540-36-3	99	%	80-120	09.14.17 17.26		





## TRC Solutions, Inc, Midland, TX

Gasolina Panga Hudroaarbons (CPO)	DUC610	<15.0	15.0	ma/ka	00 12 17 04 48	II	1
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number: 3027473							
Analyst: ARM		Date Prep:	09.12.17 16.00	]	Basis: W	et Weight	
Tech: ARM					% Moisture:		
Analytical Method: TPH by SW80	15 Mod			]	Prep Method: T2	X1005P	
Lab Sample Id: 562479-003		Date Collec	ted: 09.08.17 10.40				
Sample Id: <b>T2a 1.5</b> "		Matrix:	Soil	I	Date Received:09	9.11.17 15.0	)3

Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	09.13.17 04.48	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	169	15.0		mg/kg	09.13.17 04.48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	20.4	15.0		mg/kg	09.13.17 04.48		1
Total TPH	PHC635	189.4	15		mg/kg	09.13.17 04.48		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	09.13.17 04.48		
o-Terphenyl		84-15-1	90	%	70-135	09.13.17 04.48		

Analytical Me	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.13.17 13.00	Basis:	Wet Weight
Seq Number:	3027595				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	09.13.17 22.47	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	09.13.17 22.47	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	09.13.17 22.47	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	09.13.17 22.47	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	09.13.17 22.47	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	88	%	80-120	09.13.17 22.47		
1,4-Difluorobenzene		540-36-3	92	%	80-120	09.13.17 22.47		





## TRC Solutions, Inc, Midland, TX

Sample Id:         T3a 0-6''           Lab Sample Id:         562479-004		Matrix: Date Collecte	Soil d: 09.08.17 11.00	Date Received:09.11.17 15.03			
Analytical Method: TPH by SW80 Tech: ARM	15 Mod			Prep Metho % Moisture	od: TX1005P e:		
Analyst:ARMSeq Number:3027473		Date Prep:	09.12.17 16.00	Basis:	Wet Weight		
Parameter	Cas Number	Result R	er.	Units Analysi	s Date Flag	Dil	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	09.13.17 05.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	09.13.17 05.09	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	09.13.17 05.09	U	1
Total TPH	PHC635	<15	15		mg/kg	09.13.17 05.09	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	09.13.17 05.09		
o-Terphenyl		84-15-1	90	%	70-135	09.13.17 05.09		

Analytical Method: BTEX by EPA 8021B				Prep Method: SW5030B		
Tech:	ALJ			% Moisture:		
Analyst:	ALJ	Date Prep:	09.14.17 16.00	Basis:	Wet Weight	
Seq Number:	3027682					

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00398	0.00398		mg/kg	09.15.17 09.52	U	2
Toluene	108-88-3	0.0259	0.00398		mg/kg	09.15.17 09.52		2
Ethylbenzene	100-41-4	0.00657	0.00398		mg/kg	09.15.17 09.52		2
Xylenes, Total	1330-20-7	0.021	0.00398		mg/kg	09.15.17 09.52		2
Total BTEX		0.05347	0.00398		mg/kg	09.15.17 09.52		2
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	75	%	80-120	09.15.17 09.52	***	
1,4-Difluorobenzene		540-36-3	98	%	80-120	09.15.17 09.52		


## **Certificate of Analytical Results 562479**



## TRC Solutions, Inc, Midland, TX

			Dide Jay 1		0111 (1/2.	5/1/)			
Sample Id:	OS-1 0-6''		Matrix:	Soil		Γ	Date Received:09.	11.17 15.0	3
Lab Sample Id	: 562479-005		Date Colle	cted: 09.08	.17 10.45				
Analytical Ma	thad. Chlorida hy ED	A 200				г	han Mathadi E2(	NOD.	
-	thod: Chloride by EP. MNV	A 300					Prep Method: E30 6 Moisture:	JOP .	
Tech:	MNV			00.15	17 12 15			• <b>W</b> /-:-1-4	
Analyst:			Date Prep:	09.15	.17 13.15	E	Basis: We	t Weight	
Seq Number:	3027941								
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	<5.00	5.00		mg/kg	09.15.17 18.07	U	1
Analytical Me	thod: TPH by SW801	5 Mod				Р	Prep Method: TX	1005P	
Tech:	ARM					%	6 Moisture:		
Analyst:	ARM		Date Prep:	09.12	.17 16.00	P	Basis: We	t Weight	
Seq Number:	3027473								
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Di
Gasoline Range H	Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	09.13.17 05.29	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	09.13.17 05.29	U	1
Oil Range Hydro	carbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	09.13.17 05.29	U	1
Total TPH		PHC635	<15	15		mg/kg	09.13.17 05.29	U	1
Surrogate			Cas Number R	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooct	tane		111-85-3	102	%	70-135	09.13.17 05.29		
o-Terpheny	1		84-15-1	96	%	70-135	09.13.17 05.29		
		00015				-		7020D	
•	thod: BTEX by EPA	8021B					Prep Method: SW 6 Moisture:	2030B	
Tech:	ALJ ALJ			00.14	17.09.27			Wai-14	
Analyst:			Date Prep:	09.14	.17 08.37	E	Basis: We	t Weight	
Seq Number:	3027739								
Parameter		Cas Number	Result	RL		Units	Analysis Date	Flag	Di
Benzene		71-43-2	< 0.00375	0.00375		mg/kg	09.14.17 11.47	U	1
						00		U	

Ethylbenzene	100-41-4	< 0.00375	0.00375		mg/kg	09.14.17 11.47	U	1
Xylenes, Total	1330-20-7	< 0.00375	0.00375		mg/kg	09.14.17 11.47	U	1
Total BTEX		< 0.00375	0.00375		mg/kg	09.14.17 11.47	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	107	%	80-120	09.14.17 11.47		
4-Bromofluorobenzene		460-00-4	21	%	80-120	09.14.17 11.47	**	



1,4-Difluorobenzene

## **Certificate of Analytical Results 562479**



## TRC Solutions, Inc, Midland, TX

Blue Jay Federal #001H (1/25/17)

Sample Id: OS-2 0-6"		Matrix:	Soil	17 10 50	Ι	Date Received:09.	.11.17 15.0	3
Lab Sample Id: 562479-006		Date Coll	lected: 09.08.	17 10.50				
Analytical Method: Chloride by EP.	A 300				F	Prep Method: E3	00P	
Tech: MNV					9	6 Moisture:		
Analyst: MNV		Date Prep	o: 09.15	17 13.15	F	Basis: We	et Weight	
Seq Number: 3027941							C	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.50	4.97		mg/kg	09.15.17 18.15		1
Analytical Method: TPH by SW801 Tech: ARM	5 Mod					Prep Method: TX 6 Moisture:	1005P	
			00.10	17 16 00				
5		Date Prep	b: 09.12.	17 16.00	ſ	Basis: We	et Weight	
Seq Number: 3027473								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	09.13.17 05.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.4	14.9		mg/kg	09.13.17 05.50		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	09.13.17 05.50	U	1
Total TPH	PHC635	19.4	14.9		mg/kg	09.13.17 05.50		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	09.13.17 05.50		
o-Terphenyl		84-15-1	88	%	70-135	09.13.17 05.50		
Analytical Method: BTEX by EPA	8021B				F	Prep Method: SW	/5030B	
Tech: ALJ					9	6 Moisture:		
Analyst: ALJ		Date Prep	o: 09.14	17 08.37	E	Basis: We	et Weight	
Seq Number: 3027739		Ĩ						
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00369	0.00369		mg/kg	09.14.17 12.06	U	1
Toluene	108-88-3	< 0.00369	0.00369		mg/kg	09.14.17 12.06	U	1
Ethylbenzene	100-41-4	< 0.00369	0.00369		mg/kg	09.14.17 12.06	U	1
Xylenes, Total	1330-20-7	< 0.00369	0.00369		mg/kg	09.14.17 12.06	U	1
Total BTEX		< 0.00369	0.00369		mg/kg	09.14.17 12.06	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	29	%	80-120	09.14.17 12.06	**	
				, <del>-</del>				

101

%

540-36-3

80-120

09.14.17 12.06



## **Certificate of Analytical Results 562479**



## TRC Solutions, Inc, Midland, TX

Sample Id: Composite-1 Lab Sample Id: 562479-007		Matrix: Date Collec	Soil cted: 09.08.17 10.30	]	Date Received:09.	11.17 15.0	3
Analytical Method: TPH by SW80 Tech: ARM	15 Mod				Prep Method: TX % Moisture:	1005P	
Analyst: ARM		Date Prep:	09.12.17 16.00			et Weight	
Seq Number: 3027473 Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.13.17 07.34	U	1

o-Terphenyl		84-15-1	83	%	70-135	09.13.17 07.34			
1-Chlorooctane		111-85-3	105	%	70-135	09.13.17 07.34			
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
Total TPH	PHC635	7110	14.9		mg/kg	09.13.17 07.34		1	
Oil Range Hydrocarbons (ORO)	PHCG2835	1850	14.9		mg/kg	09.13.17 07.34		1	
Diesel Range Organics (DRO)	C10C28DRO	5260	14.9		mg/kg	09.13.17 07.34		1	
Gasoline Range Hydrocarbons (GRC	D) PHC610	<14.9	14.9		mg/kg	09.13.17 07.34	U	1	

Analytical M	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.14.17 08.37	Basis:	Wet Weight
Seq Number:	3027739				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00386	0.00386		mg/kg	09.14.17 12.24	U	1
Toluene	108-88-3	< 0.00386	0.00386		mg/kg	09.14.17 12.24	U	1
Ethylbenzene	100-41-4	< 0.00386	0.00386		mg/kg	09.14.17 12.24	U	1
Xylenes, Total	1330-20-7	< 0.00386	0.00386		mg/kg	09.14.17 12.24	U	1
Total BTEX		< 0.00386	0.00386		mg/kg	09.14.17 12.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	44	%	80-120	09.14.17 12.24	**	
1,4-Difluorobenzene		540-36-3	117	%	80-120	09.14.17 12.24		



## **Certificate of Analytical Results 562479**



## TRC Solutions, Inc, Midland, TX

Sample Id:Composite-2Lab Sample Id:562479-008		Matrix: Date Collect	Soil ted: 09.08.17 10.35		Date Received:09.1	1.17 15.03	3
Analytical Method: TPH by SW801	5 Mod				Prep Method: TX1	005P	
Tech: ARM					% Moisture:		
Analyst: ARM		Date Prep:	09.12.17 16.00		Basis: Wet	Weight	
Seq Number: 3027473							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.13.17 06.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	1870	15.0	mg/kg	09.13.17 06.34		1

Oil Range Hydrocarbons (ORO)	PHCG2835	585	15.0		mg/kg	09.13.17 06.34		1
Total TPH	PHC635	2455	15		mg/kg	09.13.17 06.34		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	09.13.17 06.34		
o-Terphenyl		84-15-1	85	%	70-135	09.13.17 06.34		

Analytical Me	ethod: BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.14.17 08.37	Basis:	Wet Weight
Seq Number:	3027739				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00380	0.00380		mg/kg	09.14.17 12.43	U	1
Toluene	108-88-3	< 0.00380	0.00380		mg/kg	09.14.17 12.43	U	1
Ethylbenzene	100-41-4	< 0.00380	0.00380		mg/kg	09.14.17 12.43	U	1
Xylenes, Total	1330-20-7	< 0.0038	0.0038		mg/kg	09.14.17 12.43	U	1
Total BTEX		< 0.0038	0.0038		mg/kg	09.14.17 12.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	103	%	80-120	09.14.17 12.43		
4-Bromofluorobenzene		460-00-4	82	%	80-120	09.14.17 12.43		



## **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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1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



## QC Summary 562479

# TRC Solutions, Inc

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	od: E30	)P	
Seq Number:	3027941			Matrix:	Solid				Date Pre	ep: 09.1	5.17	
MB Sample Id:	731046-1-BLK		LCS Sar	nple Id:	731046-1	BKS		LCSI	O Sample	Id: 7310	)46-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30	00						Pr	ep Metho	od: E30	0P	
Seq Number:	3027941			Matrix:	Soil				Date Pre	ep: 09.1	5.17	
Parent Sample Id:	562388-013		MS Sar	nple Id:	562388-0	13 S		MS	D Sample	Id: 562	388-013 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	464	249	692	92	702	96	90-110	1	20	mg/kg	09.15.17 14:45	

Analytical Method:	Chloride by EPA 30	)0						Pr	ep Metho	od: E30	)P	
Seq Number:	3027941			Matrix:	Soil				Date Pre	ep: 09.1	5.17	
Parent Sample Id:	562407-004		MS Sar	nple Id:	562407-00	)4 S		MSI	O Sample	Id: 5624	407-004 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5690	249	5690	0	5760	28	90-110	1	20	mg/kg	09.15.17 17:50	Х

Analytical Method:	TPH by S	W8015 M	od				Pı	ep Meth	od: TX1	005P			
Seq Number:	3027473				Matrix:	Solid				Date Pr	ep: 09.1	2.17	
MB Sample Id:	730846-1-	BLK		LCS Sar	nple Id:	730846-1	BKS		LCS	D Sample	e Id: 7308	346-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	1000	1090	109	1070	107	70-135	2	35	mg/kg	09.12.17 22:48	
Diesel Range Organics	(DRO)	<15.0	1000	1100	110	1100	110	70-135	0	35	mg/kg	09.12.17 22:48	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			mits	Units	Analysis Date	
1-Chlorooctane		109		1	08		104		70	-135	%	09.12.17 22:48	
o-Terphenyl		110		1	01		102		70	-135	%	09.12.17 22:48	



## **TRC Solutions, Inc**

Analytical Method:	TPH by SV	W8015 M	od						Pı	ep Meth	od: TX1	005P	
Seq Number:	3027473				Matrix:	Soil				Date Pr	ep: 09.1	2.17	
Parent Sample Id:	562388-00	1		MS Sar	nple Id:	562388-0	01 S		MS	D Sample	e Id: 5623	388-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	oons (GRO)	<15.0	999	1040	104	977	98	70-135	6	35	mg/kg	09.12.17 23:50	
Diesel Range Organics	(DRO)	43.0	999	1100	106	1060	102	70-135	4	35	mg/kg	09.12.17 23:50	
Surrogate					AS Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1-Chlorooctane				1	01		100		70	-135	%	09.12.17 23:50	
o-Terphenyl				9	97		95		70	-135	%	09.12.17 23:50	

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3027465 730828-1-BLK	lB	LCS Sar	Matrix: nple Id:	Solid 730828-1-	-BKS			ep Meth Date Pr D Sample	rep: 09.1	5030B 3.17 828-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00199	0.0996	0.106	106	0.106	106	70-130	0	35	mg/kg	09.13.17 07:46	
Toluene	< 0.00199	0.0996	0.0996	100	0.0991	99	70-130	1	35	mg/kg	09.13.17 07:46	
Ethylbenzene	< 0.00199	0.0996	0.0972	98	0.0972	97	71-129	0	35	mg/kg	09.13.17 07:46	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			mits	Units	Analysis Date	
1,4-Difluorobenzene	97		ç	96		97		80	-120	%	09.13.17 07:46	
4-Bromofluorobenzene	81		8	39		90		80	-120	%	09.13.17 07:46	

Analytical Method:	BTEX by EPA 802	1B					P	rep Meth	od: SW3	5030B		
Seq Number:	3027595			Matrix:	Solid				Date Pr	ep: 09.1	3.17	
MB Sample Id:	730911-1-BLK		LCS Sar	nple Id:	730911-1	-BKS		LCS	D Sample	e Id: 7309	911-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.104	103	0.100	100	70-130	4	35	mg/kg	09.13.17 19:40	
Toluene	< 0.00202	0.101	0.0996	99	0.0952	95	70-130	5	35	mg/kg	09.13.17 19:40	
Ethylbenzene	< 0.00202	0.101	0.0994	98	0.0948	95	71-129	5	35	mg/kg	09.13.17 19:40	
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	91		9	90		92		80	)-120	%	09.13.17 19:40	
4-Bromofluorobenzene	82		:	86		86		80	)-120	%	09.13.17 19:40	



## TRC Solutions, Inc

Analytical Method: Seq Number:	<b>BTEX by EPA 802</b> 3027739	1B		Matrix:	Solid			Pı	rep Meth Date Pr	<b>.</b>	5030B 4.17	
MB Sample Id:	730960-1-BLK		LCS Sar	nple Id:	730960-1	-BKS		LCS	D Sample	e Id: 7309	960-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.0998	0.103	103	0.102	103	70-130	1	35	mg/kg	09.14.17 08:56	
Toluene	< 0.00200	0.0998	0.0975	98	0.0965	97	70-130	1	35	mg/kg	09.14.17 08:56	
Ethylbenzene	< 0.00200	0.0998	0.0963	96	0.0961	97	71-129	0	35	mg/kg	09.14.17 08:56	
Surrogate	MB %Rec	MB Flag		•••	LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	96		Ģ	99		97		80	0-120	%	09.14.17 08:56	
4-Bromofluorobenzene	81		9	<del>9</del> 0		90		80	)-120	%	09.14.17 08:56	

•	BTEX by EPA 8021	IB		M	C - 1: 4			Pr	ep Meth	<b>.</b>	5030B	
Seq Number:	3027682			Matrix:					Date Pr	1		
MB Sample Id:	730962-1-BLK		LCS San	nple Id:	730962-1	-BKS		LCS	D Sample	e Id: 7309	962-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.0998	0.0991	99	0.0987	99	70-130	0	35	mg/kg	09.14.17 18:04	
Toluene	< 0.00200	0.0998	0.0976	98	0.0976	98	70-130	0	35	mg/kg	09.14.17 18:04	
Ethylbenzene	< 0.00200	0.0998	0.0958	96	0.0958	96	71-129	0	35	mg/kg	09.14.17 18:04	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			mits	Units	Analysis Date	
1,4-Difluorobenzene	93		ç	96		96		80	-120	%	09.14.17 18:04	
4-Bromofluorobenzene	94		ç	93		92		80	-120	%	09.14.17 18:04	

Analytical Method:	BTEX by EPA 802	1B					P	rep Meth	od: SW3	5030B		
Seq Number:	3027465			Matrix:	Soil				Date Pr	ep: 09.1	3.17	
Parent Sample Id:	562479-001		MS Sar	nple Id:	562479-0	01 S		MS	D Sample	e Id: 5624	479-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.124	123	0.107	107	70-130	15	35	mg/kg	09.13.17 08:24	
Toluene	< 0.00202	0.101	0.0959	95	0.0983	98	70-130	2	35	mg/kg	09.13.17 08:24	
Ethylbenzene	< 0.00202	0.101	0.0771	76	0.0910	91	71-129	17	35	mg/kg	09.13.17 08:24	
Surrogate				1S Rec	MS Flag	MSD %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene			1	16		100	1	80	0-120	%	09.13.17 08:24	
4-Bromofluorobenzene			8	84		92		80	0-120	%	09.13.17 08:24	



## **TRC Solutions, Inc**

Analytical Method: Seq Number:	<b>BTEX by EPA 802</b> 3027595	1B		Matrix:	Soil			Pı	ep Meth Date Pr		5030B 3.17	
Parent Sample Id:	562531-004			nple Id:	562531-00	04 S		MS		1	5.17 531-004 SD	
Falent Sample Id.				I · · · ·					1			
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.100	0.0756	76	0.0806	81	70-130	6	35	mg/kg	09.13.17 20:16	
Toluene	< 0.00201	0.100	0.0705	71	0.0675	68	70-130	4	35	mg/kg	09.13.17 20:16	Х
Ethylbenzene	< 0.00201	0.100	0.0680	68	0.0617	62	71-129	10	35	mg/kg	09.13.17 20:16	Х
Surrogate				AS Rec	MS Flag	MSE %Re			mits	Units	Analysis Date	
1,4-Difluorobenzene			9	95		103		80	-120	%	09.13.17 20:16	
4-Bromofluorobenzene			5	89		85		80	-120	%	09.13.17 20:16	

Analytical Method: Seq Number:	BTEX by EPA 8021 3027739	lB		Matrix:	Soil			Pı	ep Meth Date Pr	<b>.</b>	5030B 4.17	
Parent Sample Id:	562530-002		MS San	nple Id:	562530-00	02 S		MS	D Sample	e Id: 5625	530-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0891	88	0.0853	85	70-130	4	35	mg/kg	09.14.17 09:34	
Toluene	< 0.00202	0.101	0.0828	82	0.0786	79	70-130	5	35	mg/kg	09.14.17 09:34	
Ethylbenzene	< 0.00202	0.101	0.0805	80	0.0745	75	71-129	8	35	mg/kg	09.14.17 09:34	
Surrogate				1S Rec	MS Flag	MSD %Ree			imits	Units	Analysis Date	
1,4-Difluorobenzene			ç	<del>)</del> 9		105		80	-120	%	09.14.17 09:34	
4-Bromofluorobenzene			ç	95		96		80	-120	%	09.14.17 09:34	

Analytical Method:	BTEX by EPA 8021	lB						Pi	ep Meth	od: SW3	5030B	
Seq Number:	3027682			Matrix:	Soil				Date Pr	ep: 09.1	4.17	
Parent Sample Id:	562531-003		MS San	nple Id:	562531-0	03 S		MS	D Sample	e Id: 5625	531-003 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0909	90	0.0848	85	70-130	7	35	mg/kg	09.14.17 18:42	
Toluene	< 0.00202	0.101	0.0882	87	0.0823	82	70-130	7	35	mg/kg	09.14.17 18:42	
Ethylbenzene	< 0.00202	0.101	0.0859	85	0.0805	81	71-129	6	35	mg/kg	09.14.17 18:42	
Surrogate				1S Rec	MS Flag	MSD %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene			ç	98		101		80	-120	%	09.14.17 18:42	
4-Bromofluorobenzene			9	97		100		80	-120	%	09.14.17 18:42	



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

# CHAIN OF CUSTODY

Page 1 Of 1

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

Phoenix, Arizona (480-355-0900)

Project Contact: Nikki Green 2057 Commerce Drive Midland, Texas 79703 Samplers's Name: Nikki Green Email: ngreen@trcsolutions.com Company Address: Company Name / Branch: Relinquished by: 3 Day EMERGENCY 2 Day EMERGENCY Relinquished by: Relinquished by San TAT Starts Day received by Lab, if received by 5:00 pm Same Day TAT Composite-1 OS-2 0-6" Composite-2 OS-1 0-6" T2a 1.5' T1a 0-3" T3a 0-6" T2a 0-3" Next Day EMERGENCY **Client / Reporting Information** Turnaround Time ( Business days) Field ID / Point of Collection X Contract TAT 7 Day TAT 5 Day TAT SAMPLE CUSTODY MUST BE DOCUMENTED BELOW Parts Time: 1603 Received 432-664-6699 Phone No: Date Time: Date Time: Sample Depth Rebecca Haskell with COG Operating LLC rhaskell@concho.com 600 W Illinois Avenue | Midland, TX 79701 Direct: 432-818-2372 | Main: 432.683.7443 PO Number: 8-Sep 8-Sep Collection Blue Jay Federal #001H (1/25/17) Project Name/Number: 8-Sep 8-Sep 8-Sep 8-Sep 8-Sep 8-Sep Project Location: voice To: Date Received By: **Received By:** X Level II Std QC TRRP Checklist 1035 1050 1100 1040 1105 1030 1045 1055 Time Level 3 (CLP Forms) Level III Std QC+ Forms **Project Information** Lea County, NM ACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY Matrix S S S S S S S S **Data Deliverable Information** www.xenco.com # of bottles --------HCI NaOH/Zn Number Acetate HNO3 r of pre Relinquished By: Relinquished By: Custody Seal # UST / RG -411 TRRP Level IV Level IV (Full Data Pkg /raw data) H2SO4 served bottles NaOH NaHSO4 MEOH × × × × × × × × NONE Xenco Quote # × × × × × × × × **TPH 8015M EXT 36** Preserved where applicable **BTEX 8021B** × × × × × × × × Date Time: Date Time: × × Chloride E300.0 Analytical Information FED-EX / UPS: Tracking # Note Received By: **Received By:** Xenco Job # Corrected Temp: 3. CF:(0-6: -0.2°C) Temp: 3.3 (6-23: +0.2°C) ON ICO head Cooler Temp. IR ID:R-8 Field Comments WI = Wipe O = Oil WW= Waste Water OW =Ocean/Sea Water SL = Sludge SW = Surface water P = Product DW = Drinking Water S = Soil/Sed/Solid Thermo. Corr. Factor GW =Ground Water W = Water A = Air Matrix Codes

10

9

G

6

ω

No.

TRC

Notice: Notice: Signature of this document and reliquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assignt 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 bases are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco Siability 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 unlers a fully executed client contract.

Notice: Notice: Signature of this docu



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



Client: TRC Solutions, Inc Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 09/11/2017 03:03:00 PM Temperature Measuring device used : R8 Work Order #: 562479 Comments Sample Receipt Checklist 3.1 #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)? 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#:

Date: 09/11/2017

Checklist completed by: Jessica Vramer Jessica Kramer Checklist reviewed by: Mark Moak Kelsey Brooks

Date: 09/11/2017

# Analytical Report 577388

for TRC Solutions, Inc

Project Manager: Joel Lowry

Blue Jay Federal #001H

#### 01-MAR-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) Xenco-Atlanta: Louisiana (04176) Xenco-Tampa: Florida (E87429), North Carolina (483), DoD (LI0-135), Kentucky (123066) Xenco-Lakeland: Florida (E84098)



01-MAR-18

SUP ACCREDING

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

Reference: XENCO Report No(s): **577388 Blue Jay Federal #001H** 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) 577388. 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. 577388 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,

Huns hoah

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

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



## Sample Cross Reference 577388



## TRC Solutions, Inc, Midland, TX

Blue Jay Federal #001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 FL @6"	S	02-21-18 15:00	66 In	577388-001
T-1 NSW	S	02-21-18 15:05	3 In	577388-002
T-1 WSW	S	02-21-18 15:10	3 In	577388-003
T-1 SSW	S	02-21-18 15:15	3 In	577388-004
T-2 FL @ 2'	S	02-21-18 15:20	2 In	577388-005
T-2 NSW	S	02-21-18 15:25	1 In	577388-006
T-2 ESW	S	02-21-18 15:30	1 In	577388-007
T-2SSW	S	02-21-18 15:35	1 In	577388-008
T-2 WSW	S	02-21-18 15:40	1 In	577388-009
Pt. 1	S	02-21-18 15:45	6 - 8 In	577388-010
Pt. 2	S	02-21-18 15:50	6 - 8 In	577388-011
Pt. 3	S	02-21-18 15:55	6 - 8 In	577388-012
Pt. 4	S	02-21-18 16:00	6 - 8 In	577388-013



## CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: Blue Jay Federal #001H

Project ID: Work Order Number(s): 577388 Report Date:01-MAR-18Date Received:02/23/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3042157 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3042198 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3042214 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3042388 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id:Contact:Joel LowryProject Location:Lea Co, NM

Certificate of Analysis Summary 577388

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H



Date Received in Lab:Fri Feb-23-18 02:30 pmReport Date:01-MAR-18Project Manager:Kelsey Brooks

	1				1					1			
	Lab Id:	577388-	001	577388-	002	577388-0	003	577388-0	004	577388-0	005	577388-0	006
Analysis Requested	Field Id:	T-1 FL (	@6"	T-1 NS	W	T-1 WS	W	T-1 SS	W	T-2 FL @	2'	T-2 NS	W
Analysis Requested	Depth:	66- Ir	ı	3- In		3- In		3- In		2- In		1- In	
	Matrix:	SOIL		SOIL	,	SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	Feb-21-18	15:00	Feb-21-18	15:05	Feb-21-18	15:10	Feb-21-18	15:15	Feb-21-18	15:20	Feb-21-18	15:25
BTEX by EPA 8021B	Extracted:	Feb-24-18	10:30	Feb-24-18	10:30	Feb-26-18	10:00	Feb-24-18	13:00	Feb-24-18	13:00	Feb-26-18	10:00
	Analyzed:	Feb-25-18	15:52	Feb-25-18	16:11	Feb-26-18	14:23	Feb-25-18	15:04	Feb-25-18	15:23	Feb-26-18	14:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00338	0.00338	< 0.00200	0.00200	< 0.0200	0.0200	< 0.00339	0.00339
Toluene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00338	0.00338	< 0.00200	0.00200	< 0.0200	0.0200	< 0.00339	0.00339
Ethylbenzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00338	0.00338	< 0.00200	0.00200	< 0.0200	0.0200	< 0.00339	0.00339
m,p-Xylenes		< 0.00399	0.00399	< 0.00397	0.00397	< 0.00676	0.00676	< 0.00399	0.00399	< 0.0401	0.0401	< 0.00678	0.00678
o-Xylene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00338	0.00338	< 0.00200	0.00200	< 0.0200	0.0200	< 0.00339	0.00339
Total Xylenes		< 0.002	0.002	< 0.00198	0.00198	< 0.00338	0.00338	< 0.002	0.002	< 0.02	0.02	< 0.00339	0.00339
Total BTEX		< 0.002	0.002	< 0.00198	0.00198	< 0.00338	0.00338	< 0.002	0.002	< 0.02	0.02	< 0.00339	0.00339
Chloride by EPA 300	Extracted:	Feb-27-18	17:00	Feb-27-18	17:00	Feb-27-18	17:00	Feb-27-18	17:00	Feb-27-18	17:00	Feb-27-18	17:00
	Analyzed:	Feb-27-18	20:33	Feb-27-18	20:38	Feb-27-18	20:44	Feb-27-18	20:49	Feb-27-18	21:05	Feb-27-18	21:10
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		< 5.00	5.00	< 5.00	5.00	<4.97	4.97	<4.91	4.91	<4.90	4.90	<4.90	4.90
TPH by SW8015 Mod	Extracted:	Feb-23-18	16:00	Feb-23-18	16:00	Feb-23-18	16:00	Feb-23-18	16:00	Feb-23-18	16:00	Feb-23-18	16:00
	Analyzed:	Feb-24-18	01:06	Feb-24-18	02:25	Feb-24-18	02:53	Feb-24-18	03:19	Feb-24-18	03:45	Feb-24-18	04:13
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		29.5	15.0	29.6	15.0	368	15.0	72.6	15.0	36.2	14.9	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total TPH		29.5	15	29.6	15	368	15	72.6	15	36.2	14.9	<15	15

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

Huns Boah

Kelsey Brooks Project Manager

Final 1.000



Project Id:Contact:Joel LowryProject Location:Lea Co, NM

Certificate of Analysis Summary 577388

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H



Date Received in Lab:Fri Feb-23-18 02:30 pmReport Date:01-MAR-18Project Manager:Kelsey Brooks

		5772000 (	007	577200	200	5772000	200	577200	10	577200	011	577200	010
	Lab Id:	577388-0		577388-0		577388-0		577388-0	010	577388-		577388-	
Analysis Requested	Field Id:	T-2 ESV	W	T-2SS	N	T-2 WS	W	Pt. 1		Pt. 2		Pt. 3	
Analysis Requested	Depth:	1- In		1- In		1- In		6-8 Ir	L	6-8 Ir	ı 🔤	6-8 Ir	1
	Matrix:	SOIL	,	SOIL									
	Sampled:	Feb-21-18	15:30	Feb-21-18	15:35	Feb-21-18	15:40	Feb-21-18	15:45	Feb-21-18	15:50	Feb-21-18	15:55
BTEX by EPA 8021B	Extracted:	Feb-24-18	13:00	Feb-26-18	17:15								
	Analyzed:	Feb-25-18	14:46	Feb-28-18	05:54	Feb-28-18	12:07	Feb-28-18	12:26	Feb-28-18	09:33	Feb-28-18	09:53
	Units/RL:	mg/kg	RL										
Benzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
Toluene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
Ethylbenzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
m,p-Xylenes		< 0.00398	0.00398	< 0.00399	0.00399	< 0.00678	0.00678	< 0.00664	0.00664	< 0.00398	0.00398	< 0.00402	0.00402
o-Xylene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
Total Xylenes		< 0.00199	0.00199	< 0.002	0.002	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
Total BTEX		< 0.00199	0.00199	< 0.002	0.002	< 0.00339	0.00339	< 0.00332	0.00332	< 0.00199	0.00199	< 0.00201	0.00201
Chloride by EPA 300	Extracted:	Feb-27-18	17:00										
	Analyzed:	Feb-27-18	21:16	Feb-27-18	21:21	Feb-27-18	21:26	Feb-27-18	21:31	Feb-27-18	21:47	Feb-27-18	21:53
	Units/RL:	mg/kg	RL										
Chloride		< 5.00	5.00	<4.92	4.92	< 5.00	5.00	< 5.00	5.00	< 5.00	5.00	< 5.00	5.00
TPH by SW8015 Mod	Extracted:	Feb-23-18	16:00										
	Analyzed:	Feb-24-18	04:39	Feb-24-18	05:06	Feb-24-18	05:34	Feb-24-18	06:00	Feb-24-18	07:19	Feb-24-18	07:48
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		186	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	24.3	15.0
Oil Range Hydrocarbons (ORO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		186	14.9	<15	15	<15	15	<15	15	<15	15	24.3	15

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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Huns Boah

Kelsey Brooks Project Manager

Final 1.000



Project Id:Contact:Joel LowryProject Location:Lea Co, NM

## Certificate of Analysis Summary 577388

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H



Date Received in Lab: Fri Feb-23-18 02:30 pm Report Date: 01-MAR-18 Project Manager: Kelsey Brooks

	Lab Id:	577388-013				
	Field Id:	Pt. 4				
Analysis Requested						
	Depth:	6-8 In				
	Matrix:	SOIL				
	Sampled:	Feb-21-18 16:00				
BTEX by EPA 8021B	Extracted:	Feb-26-18 17:15	1		1	
	Analyzed:	Feb-28-18 10:12				
	Units/RL:	mg/kg RL				
Benzene		<0.00202 0.00202				
Toluene		<0.00202 0.00202				
Ethylbenzene		<0.00202 0.00202				
m,p-Xylenes		<0.00403 0.00403				
o-Xylene		<0.00202 0.00202				
Total Xylenes		<0.00202 0.00202				
Total BTEX		<0.00202 0.00202				
Chloride by EPA 300	Extracted:	Feb-27-18 17:00				
	Analyzed:	Feb-27-18 22:09				
	Units/RL:	mg/kg RL				
Chloride		<5.00 5.00				
TPH by SW8015 Mod	Extracted:	Feb-23-18 16:00				
	Analyzed:	Feb-24-18 08:13				
	Units/RL:	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0				
Diesel Range Organics (DRO)		313 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0				
Total TPH		313 15		 		

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Kelsey Brooks Project Manager

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## **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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1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



## Project Name: Blue Jay Federal #001H

	rders : 577388 #: 3042063	Sample: 577388-001 / SMP	Batc	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/24/18 01:06	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		115	99.9	115	70-135	
o-Terpheny	1		56.5	50.0	113	70-135	
Lab Batch	#: 3042063	Sample: 577388-002 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 02:25	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tana	Analytes	109	99.9	109	70-135	
o-Terpheny				50.0	109	70-135	
	#: 3042063	Sample: 577388-003 / SMP	53.2 Batc			/0-155	
Lab Batch Units:		•					
Units:	mg/kg	Date Analyzed: 02/24/18 02:53	su	RROGATE R	ECOVERYS	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		108	99.8	108	70-135	
o-Terpheny	1		56.4	49.9	113	70-135	
Lab Batch	#: 3042063	Sample: 577388-004 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 03:19	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		111	99.8	111	70-135	
o-Terpheny			55.8	49.9	111	70-135	
	#: 3042063	Sample: 577388-005 / SMP	Batc			,0155	
Units:	mg/kg	<b>Date Analyzed:</b> 02/24/18 03:45		RROGATE R		STUDY	
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		97.3	99.6	98	70-135	
o-Terpheny	1		49.8	49.8	100	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	<b>:ders :</b> 577388 #: 3042063	Sample: 577388-006 / SMP	Batc	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/24/18 04:13	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	tane		116	99.7	116	70-135	
o-Terpheny	1		56.6	49.9	113	70-135	
Lab Batch	#: 3042063	Sample: 577388-007 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 04:39	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct		Anarytes	111	99.6	111	70-135	
o-Terpheny			55.2	49.8	111	70-135	
	#: 3042063	Sample: 577388-008 / SMP	Batc			70-155	
Lab Batch Units:	mg/kg	Date Analyzed: 02/24/18 05:06			-		
Units:	iiig/kg	Date Analyzeu: 02/24/18 05:00	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	tane		111	99.9	111	70-135	
o-Terpheny	1		54.6	50.0	109	70-135	
Lab Batch	#: 3042063	Sample: 577388-009 / SMP	Batc	h: 1 Matrix	: Soil	1	
Units:	mg/kg	Date Analyzed: 02/24/18 05:34	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct			96.3	99.7	97	70-135	
o-Terpheny			48.1	49.9	96	70-135	
	#: 3042063	Sample: 577388-010 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 06:00	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes					
1-Chlorooct			111	99.8	111	70-135	
o-Terpheny	1		53.8	49.9	108	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	<b>ders :</b> 57738 #: 3042063	8, Sample: 577388-011 / SMP	Batcl	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/24/18 07:19	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ane		109	100	109	70-135	
o-Terphenyl			53.0	50.0	106	70-135	
Lab Batch	#: 3042063	Sample: 577388-012 / SMP	Batcl	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 07:48	SU	RROGATE R	ECOVERY S	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 (11)		Analytes					
1-Chloroocta			110	99.9	110	70-135	
o-Terphenyl		G 1 5772000 012 / SMD	53.5	50.0	107	70-135	
	#: 3042063	Sample: 577388-013 / SMP	Batcl				
Units:	mg/kg	Date Analyzed: 02/24/18 08:13	SU	RROGATE R	ECOVERY S	STUDY	
	TPH I	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ane		111	99.7	111	70-135	
o-Terphenyl			56.8	49.9	114	70-135	
Lab Batch	#: 3042214	Sample: 577388-007 / SMP	Batcl	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/25/18 14:46	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene		0.0246	0.0300	82	80-120	
4-Bromofluc			0.0240	0.0300	119	80-120	
	#: 3042214	Sample: 577388-004 / SMP	Batcl			00 120	
Units:	mg/kg	<b>Date Analyzed:</b> 02/25/18 15:04		RROGATE R		STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	benzene		0.0248	0.0300	83	80-120	
4-Bromofluc	orobenzene		0.0327	0.0300	109	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	rders : 57738 #: 3042214	8, <b>Sample:</b> 577388-005 / SMP	Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/25/18 15:23	SU	RROGATE R	ECOVERY	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0256	0.0300	85	80-120	
4-Bromoflu	ıorobenzene		0.0325	0.0300	108	80-120	
Lab Batch	#: 3042198	Sample: 577388-001 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/25/18 15:52	SU	RROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4.5.0		Analytes					
1,4-Difluor			0.0250	0.0300	83	80-120	
	lorobenzene		0.0343	0.0300	114	80-120	
	#: 3042198	Sample: 577388-002 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 02/25/18 16:11	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[A]	[0]	[D]	701	
1,4-Difluor	robenzene		0.0249	0.0300	83	80-120	
4-Bromoflu	ıorobenzene		0.0312	0.0300	104	80-120	
Lab Batch	#: 3042157	Sample: 577388-003 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/26/18 14:23	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0241	0.0300	80	70-130	
· ·	iorobenzene		0.0354	0.0300	118	70-130	
	#: 3042157	Sample: 577388-006 / SMP	Batc				
Units:	mg/kg	Date Analyzed: 02/26/18 14:42	SU	RROGATE R		STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
r		Analytes			[D]		
1,4-Difluor			0.0242	0.0300	81	80-120	
4-Bromoflu	ıorobenzene		0.0341	0.0300	114	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	rders : 577383 #: 3042388	3, Sample: 577388-008 / SMP	Batcl	Project ID							
Units:	mg/kg	Date Analyzed: 02/28/18 05:54	SU	RROGATE I	RECOVERY	STUDY					
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor	obenzene		0.0237	0.0300	79	70-130					
4-Bromoflu	iorobenzene		0.0328	0.0300	109	70-130					
Lab Batch	#: 3042388	Sample: 577388-011 / SMP	Batcl	h: 1 Matri	<b>k:</b> Soil						
Units:	mg/kg	Date Analyzed: 02/28/18 09:33	SU	RROGATE I	RECOVERYS	STUDY					
		A polytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1 4 Differen		Analytes	0.0222	0.0200		70.120					
1,4-Difluor			0.0233	0.0300	78	70-130					
	orobenzene #: 3042388	C	0.0302	0.0300	101	70-130					
		Sample: 577388-012 / SMP	IP     Batch:     1     Matrix: Soil       SURROGATE     RECOVERY STUDY								
Units:	mg/kg	Date Analyzed: 02/28/18 09:53	SU	RROGATE I	RECOVERY	STUDY					
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes	[A]		[D]	701					
1,4-Difluor	obenzene		0.0234	0.0300	78	70-130					
4-Bromoflu	iorobenzene		0.0272	0.0300	91	70-130					
Lab Batch	#: 3042388	Sample: 577388-013 / SMP	Batcl	h: 1 Matri	<b>k:</b> Soil	1					
Units:	mg/kg	Date Analyzed: 02/28/18 10:12	SU	RROGATE H	RECOVERY	STUDY					
	BTEX	A by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluor	obenzene		0.0233	0.0300	78	70-130					
· ·	iorobenzene		0.0306	0.0300	102	70-130					
Lab Batch	#: 3042388	Sample: 577388-009 / SMP	Batcl								
Units:	mg/kg	Date Analyzed: 02/28/18 12:07	SU	RROGATE I	RECOVERY	STUDY					
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor			0.0257	0.0300	86	70-130					
4-Bromoflu	iorobenzene		0.0326	0.0300	109	70-130					

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	r <b>ders :</b> 57738 #: 3042388	8, Sample: 577388-010 / SMP	Batch	Project ID : 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/28/18 12:26	SUI	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0242	0.0300	81	70-130	
4-Bromoflu	orobenzene		0.0320	0.0300	107	70-130	
Lab Batch	#: 3042063	Sample: 7639738-1-BLK / Bl	LK Batch	: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/23/18 23:45	SUI	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 (11		Analytes					
1-Chlorooc			105	100	105	70-135	
o-Terpheny			54.8	50.0	110	70-135	
	#: 3042214	Sample: 7639819-1-BLK / B					
Units:	mg/kg	Date Analyzed: 02/25/18 10:23	SUI	RROGATE R	ECOVERY	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0250	0.0300	83	80-120	
4-Bromoflu	orobenzene		0.0333	0.0300	111	80-120	
Lab Batch	#: 3042198	Sample: 7639790-1-BLK / B	LK Batch	: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/25/18 10:49	SUI	RROGATE R	ECOVERY	STUDY	
	ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0242	0.0300	81	80-120	
	lorobenzene		0.0242	0.0300	104	80-120	
	#: 3042157	Sample: 7639793-1-BLK / Bl				00 120	
Units:	mg/kg	Date Analyzed: 02/26/18 11:53		RROGATE R		STUDY	
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0245	0.0300	82	80-120	
4-Bromoflu	orobenzene		0.0330	0.0300	110	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: Blue Jay Federal #001H

Lab Batch a		Sample: 7639915-1-BLK / ]			-					
Units:	mg/kg	Date Analyzed: 02/28/18 05:35	SU	RROGATE R	ECOVERY S	STUDY				
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]					
1,4-Difluoro	benzene		0.0239	0.0300	80	70-130				
4-Bromofluc	orobenzene		0.0280	0.0300	93	70-130				
Lab Batch #	#: 3042063	Sample: 7639738-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid					
Units:	mg/kg	Date Analyzed: 02/24/18 00:11	SU	RROGATE R	ECOVERY S	STUDY				
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag			
1-Chloroocta		Analy us	127	100	127	70-135				
o-Terphenyl			61.8	50.0	127	70-135				
Lab Batch a	#: 3042214	Sample: 7639819-1-BKS / 1								
Units:	mg/kg	Date Analyzed: 02/25/18 08:51	SURROGATE RECOVERY STUDY							
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag			
		Analytes			[D]					
1,4-Difluoro	benzene		0.0277	0.0300	92	80-120				
4-Bromofluc	orobenzene		0.0351	0.0300	117	80-120				
Lab Batch #	#: 3042198	Sample: 7639790-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid					
Units:	mg/kg	Date Analyzed: 02/25/18 08:54	SU	RROGATE R	ECOVERY S	STUDY				
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	benzene		0.0265	0.0300	88	80-120				
4-Bromofluc	orobenzene		0.0355	0.0300	118	80-120				
Lab Batch #	#: 3042157	Sample: 7639793-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid	I				
Units:	mg/kg	Date Analyzed: 02/26/18 09:57	SU	RROGATE R	ECOVERY S	STUDY				
		K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag			
		Analytes			[D]					
1,4-Difluoro	benzene		0.0242	0.0300	81	80-120				
4 D	orobenzene		0.0359	0.0300	120	80-120				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	rders : 57738 #: 3042388	8, <b>Sample:</b> 7639915-1-BKS / ]	BKS Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/28/18 03:42	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0262	0.0300	87	70-130	
4-Bromoflu	lorobenzene		0.0338	0.0300	113	70-130	
Lab Batch	#: 3042063	Sample: 7639738-1-BSD / ]	BSD Batcl	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/24/18 00:39	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 (11		Analytes					
1-Chlorooc			126	100	126	70-135	
o-Terpheny			63.6	50.0	127	70-135	
	#: 3042214	Sample: 7639819-1-BSD / 1					
Units:	mg/kg	Date Analyzed: 02/25/18 09:10	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0290	0.0300	97	80-120	
4-Bromoflu	ıorobenzene		0.0360	0.0300	120	80-120	
Lab Batch	#: 3042198	Sample: 7639790-1-BSD / 1	BSD Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 02/25/18 09:13	SU	RROGATE R	ECOVERY S	STUDY	
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	-	0.0269	0.0300	90	80-120	
4-Bromoflu	ıorobenzene		0.0336	0.0300	112	80-120	
Lab Batch	#: 3042157	Sample: 7639793-1-BSD / 1			: Solid		
Units:	mg/kg	Date Analyzed: 02/26/18 10:17	SU	RROGATE R	ECOVERY S	STUDY	
	втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1400		Analytes	0.0252	0.0000		00.100	
1,4-Difluor			0.0253	0.0300	84	80-120	
4-Bromoflu	ıorobenzene		0.0348	0.0300	116	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

Lab Batch #:		Sample: 7639915-1-BSD / BS			-					
Units:	mg/kg	<b>Date Analyzed:</b> 02/28/18 04:01	SU	JRROGATE R	ECOVERY S	STUDY				
	BTEX	L by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluorob	enzene		0.0253	0.0300	84	70-130				
4-Bromofluor	obenzene		0.0349	0.0300	116	70-130				
Lab Batch #:	3042063	Sample: 577388-001 S / MS	Bate	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 02/24/18 01:32	SU	JRROGATE R	ECOVERY S	STUDY				
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctan		Analytes	103	99.7	103	70-135				
o-Terphenyl			50.7	49.9	103	70-135				
Lab Batch #:	3042214	Sample: 577310-001 S / MS	Bate		_	10-155				
Units:	mg/kg	Date Analyzed: 02/25/18 09:28	SURROGATE RECOVERY STUDY							
	BTEX	L by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes	[**]		[D]					
1,4-Difluorob	enzene		0.0266	0.0300	89	80-120				
4-Bromofluor	obenzene		0.0332	0.0300	111	80-120				
Lab Batch #:	3042198	Sample: 577385-009 S / MS	Bato	h: 1 Matrix	: Soil	<u> </u>				
Units:	mg/kg	Date Analyzed: 02/25/18 09:32	SU	JRROGATE R	ECOVERY S	STUDY				
		by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluorob		Anarytes	0.0257	0.0300	86	80-120				
4-Bromofluor			0.0237	0.0300	104	80-120				
Lab Batch #:		Sample: 577421-001 S / MS	Bate			00-120				
Units:	mg/kg	Date Analyzed: 02/26/18 10:36		JRROGATE R		STUDY				
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]					
1,4-Difluorob			0.0241	0.0300	80	80-120				
4-Bromofluor	nofluorobenzene		0.0310	0.0300	103	80-120				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## Project Name: Blue Jay Federal #001H

	rders : 57738 #: 3042388	8, Sample: 577388-008 S / MS	Batch	Project ID n: 1 Matrix			
Units:	mg/kg	Date Analyzed: 02/28/18 04:21	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0266	0.0300	89	70-130	
4-Bromoflu	iorobenzene		0.0347	0.0300	116	70-130	
Lab Batch	#: 3042063	Sample: 577388-001 SD / MS	D Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/24/18 01:59	SU	RROGATE R	ECOVERY S	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc			115	99.9	115	70-135	
o-Terpheny			55.7	50.0	111	70-135	
Lab Batch	#: 3042214	Sample: 577310-001 SD / MS	D Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/25/18 09:46	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0242	0.0300	81	80-120	
4-Bromoflu	iorobenzene		0.0331	0.0300	110	80-120	
Lab Batch	#: 3042198	Sample: 577385-009 SD / MS	D Batch	n: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 02/25/18 09:52	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0272	0.0300	91	80-120	
· ·	iorobenzene		0.0358	0.0300	119	80-120	
	#: 3042157	Sample: 577421-001 SD / MS					
Units:	mg/kg	<b>Date Analyzed:</b> 02/26/18 10:56	SU	RROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor		4 mary 005	0.0246	0.0300	82	80-120	
	o o o o ni Lonio		0.0270	0.0500	04	00-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Project Name: Blue Jay Federal #001H

	rders : 57738 1#: 3042388	8, Sample: 577388-008 SD / M	MSD Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 02/28/18 04:40	SU	RROGATE RE	COVERY S	STUDY			
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0247	0.0300	82	70-130			
4-Bromoflu	4-Bromofluorobenzene		0.0337	0.0300	112	70-130			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



## **BS / BSD Recoveries**



#### **Project Name:** Blue Jay Federal #001H

Work Order #: 577388	Order #: 577388 Project ID:										
Analyst: ALJ	Da	ate Prepar	ed: 02/24/20	18			Date A	nalyzed: (	02/25/2018		
Lab Batch ID: 3042198 Sample: 7639790-1-	BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg	[A]         Result [B]         %R [C]         %R [D]         Duplicate Result [F]         %R [G]         %R         %R PD           <0.00199         0.0994         0.0760         76         0.0998         0.0709         71         7         70-130         35           <0.00199         0.0994         0.0804         81         0.0998         0.0760         76         6         70-130         35										
BTEX by EPA 8021B Analytes	Sample Result	Added	Spike Result	Spike %R	Added	Spike Duplicate	Dup. %R		Limits	Limits	Flag
Benzene	<0.00199	0.0994	0.0760	76	0.0998	0.0709	71	7	70-130	35	
Toluene	<0.00199	0.0994	0.0804	81	0.0998	0.0760	76	6	70-130	35	
Ethylbenzene	<0.00199	0.0994	0.0944	95	0.0998	0.0881	88	7	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.186	93	0.200	0.173	87	7	70-135	35	
o-Xylene	<0.00199	0.0994	0.0957	96	0.0998	0.0890	89	7	71-133	35	
Analyst: ALJ	Da	ate Prepar	ed: 02/26/20	18			Date A	nalyzed: (	02/26/2018		
Lab Batch ID: 3042157 Sample: 7639793-1-	BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0931	93	0.100	0.0925	93	1	70-130	35	
Toluene	<0.00199	0.0996	0.0994	100	0.100	0.0979	98	2	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.115	115	0.100	0.113	113	2	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.230	116	0.200	0.226	113	2	70-135	35	
o-Xylene	<0.00199	0.0996	0.112	112	0.100	0.110	110	2	71-133	35	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



#### **Project Name:** Blue Jay Federal #001H

Vork Order #: 577388 Project ID:											
Analyst: ALJ	Da	ate Prepar	red: 02/24/202	8			Date A	nalyzed: (	02/25/2018		
Lab Batch ID: 3042214 Sample: 7639819-1-	BKS	Batcl	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0846	84	0.100	0.0712	71	17	70-130	35	
Toluene	<0.00202	0.101	0.0847	84	0.100	0.0705	71	18	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0907	90	0.100	0.0736	74	21	71-129	35	
m,p-Xylenes	< 0.00403	0.202	0.175	87	0.200	0.144	72	19	70-135	35	
o-Xylene	<0.00202	0.101	0.0899	89	0.100	0.0762	76	16	71-133	35	
Analyst: ALJ	Da	ate Prepar	red: 02/26/202	8			Date A	nalyzed: (	02/28/2018		
Lab Batch ID: 3042388 Sample: 7639915-1-	BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0833	82	0.100	0.0797	80	4	70-130	35	
Toluene	<0.00202	0.101	0.0877	87	0.100	0.0857	86	2	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0994	98	0.100	0.0970	97	2	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.196	97	0.200	0.192	96	2	70-130	35	
o-Xylene	< 0.00202	0.101	0.0981	97	0.100	0.0976	98	1	70-130	35	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



#### Project Name: Blue Jay Federal #001H

Work Order	r #: 577388							Proj	ject ID:			
Analyst:	OJS	D	ate Prepar	ed: 02/27/20	18			Date A	nalyzed: (	02/27/2018		
Lab Batch ID	<b>Sample:</b> 7639873	3-1-BKS	Batcl	<b>n #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	ΟY	
	Chloride by EPA 300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride		<5.00	250	274	110	250	274	110	0	90-110	20	
Analyst:	ARM	, D	ata Pranar	ad. 02/23/20	18			Date A	nalvzed• (	)2/24/2018		
1 mary se.		D	ate i repai	cu. 02/23/20	10			Date A	naryzeu.	J2/24/2010		
Lab Batch ID			Date Prepared:         02/23/2018         Date Analyzed:         02/24/2018           -BKS         Batch #:         1         Matrix:         Solid									
-			Batcl	<b>h #:</b> 1		BLANK	SPIKE DUP		Matrix: S	Solid	)Y	
Lab Batch ID Units:	D: 3042063 Sample: 7639733 mg/kg TPH by SW8015 Mod		Batcl	<b>h #:</b> 1		BLANK S Spike Added [E]	SPIKE DUP Blank Spike Duplicate Result [F]		Matrix: S	Solid	OY Control Limits %RPD	Flag
Lab Batch ID Units: Analy	D: 3042063 Sample: 7639733 mg/kg TPH by SW8015 Mod	3-1-BKS Blank Sample Result	Batcl BLAN Spike Added	n #: 1 K /BLANK Blank Spike Result	SPIKE / 1 Blank Spike %R	Spike Added	Blank Spike Duplicate	LICATE Blk. Spk Dup. %R	Matrix: S RECOVI RPD	Solid ERY STUI Control Limits	Control Limits	Flag



## Form 3 - MS / MSD Recoveries

#### **Project Name: Blue Jay Federal #001H**



<b>Work Order # :</b> 577388						Project II	):				
Lab Batch ID: 3042157	QC- Sample ID:	577421	-001 S	Ba	tch #:	1 Matri	<b>x:</b> Soil				
<b>Date Analyzed:</b> 02/26/2018	Date Prepared:	02/26/2	018	Ar	nalyst: A	ALJ					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Benzene	<0.00200	0.100	0.0638	64	0.0998	0.0720	72	12	70-130	35	X
Toluene	<0.00200	0.100	0.0679	68	0.0998	0.0750	75	10	70-130	35	X
Ethylbenzene	< 0.00200	0.100	0.0787	79	0.0998	0.0845	85	7	71-129	35	
m,p-Xylenes	0.00414	0.200	0.155	75	0.200	0.170	83	9	70-135	35	
o-Xylene	< 0.00200	0.100	0.0745	75	0.0998	0.0856	86	14	71-133	35	
Lab Batch ID: 3042198	QC- Sample ID:	577385	-009 S	Ba	tch #:	1 Matri	<b>k:</b> Soil				
<b>Date Analyzed:</b> 02/25/2018	Date Prepared:	02/24/2	018	Ar	nalyst: A	ALJ					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	'RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0517	52	0.100	0.0364	36	35	70-130	35	X
Toluene	<0.00200	0.0998	0.0571	57	0.100	0.0410	41	33	70-130	35	X
Ethylbenzene	<0.00200	0.0998	0.0652	65	0.100	0.0495	50	27	71-129	35	X
m,p-Xylenes	<0.00399	0.200	0.128	64	0.200	0.0952	48	29	70-135	35	X
o-Xylene	< 0.00200	0.0998	0.0672	67	0.100	0.0532	53	23	71-133	35	X

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries

#### **Project Name: Blue Jay Federal #001H**



<b>Work Order # :</b> 577388						Project II	):				
Lab Batch ID: 3042214	QC- Sample ID:	577310	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
<b>Date Analyzed:</b> 02/25/2018	Date Prepared:	02/24/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD %	Control Limits %R	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	<b>%</b> 0	%K	%RPD	
Benzene	< 0.00199	0.0996	0.0528	53	0.100	0.0624	62	17	70-130	35	X
Toluene	< 0.00199	0.0996	0.0443	44	0.100	0.0578	58	26	70-130	35	X
Ethylbenzene	< 0.00199	0.0996	0.0461	46	0.100	0.0583	58	23	71-129	35	X
m,p-Xylenes	<0.00398	0.199	0.0891	45	0.200	0.110	55	21	70-135	35	X
o-Xylene	< 0.00199	0.0996	0.0476	48	0.100	0.0588	59	21	71-133	35	X
Lab Batch ID: 3042388	QC- Sample ID:	577388	-008 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
<b>Date Analyzed:</b> 02/28/2018	Date Prepared:	02/26/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0794	80	0.0994	0.0699	70	13	70-130	35	
Toluene	< 0.00199	0.0996	0.0844	85	0.0994	0.0739	74	13	70-130	35	
Ethylbenzene	< 0.00199	0.0996	0.0929	93	0.0994	0.0819	82	13	70-130	35	
m,p-Xylenes	< 0.00398	0.199	0.183	92	0.199	0.161	81	13	70-130	35	
o-Xylene	< 0.00199	0.0996	0.0913	92	0.0994	0.0793	80	14	70-130	35	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries

#### **Project Name: Blue Jay Federal #001H**



Work Order # :	577388	Project ID:											
Lab Batch ID:	3042453	QC- Sample ID: 577383-0		-022 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil					
Date Analyzed:	02/27/2018	Date Prepared:	02/27/2	018	An	alyst: (	OJS						
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
	Chloride by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	Analytes	[A]	[B]	[0]	[D]	[E]	incount [1]	[G]		/011			
Chloride		54.6	250	303	99	250	311	103	3	90-110	20		
Lab Batch ID:	3042453	<b>QC- Sample ID:</b> 577388-010 S <b>Batch #:</b> 1 <b>Matrix:</b> Soil											
Date Analyzed:	lyzed: 02/27/2018 Date Prepared: 02/27/2018 Analyst: OJS												
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
Chloride		<5.00	250	268	107	250	262	105	2	90-110	20		
Lab Batch ID: 3042063		<b>QC- Sample ID:</b> 577388-001 S <b>Batch #:</b> 1 <b>Matrix:</b> Soil											
Date Analyzed:	Analyzed:         02/24/2018         Date Prepared:         02/23/2018         Analyst:         ARM												
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
	TPH by SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag	
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
Gasoline Range Hydrocarbons (GRO)		<15.0	997	879	88	999	987	99	12	70-135	35		
Diesel Range Organics (DRO)		29.5	997	982	96	999	1080	105	10	70-135	35		

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.
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Stafford, Texas (281-240-4200)

# CHAIN OF CUSTODY

Page 1 Of

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

Company Name / Branch: TRC Environmental Corporation Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of be enforced unless previously negotiated under a fully executed client contract. No. Project Contact: Joel Lowry Samplers's Name Zach Conder **Company Address:** Email: 13 12 # 10 ω Relinquished by: ( 9 8 -G C7 4 N Dallas Texas (214-902-0300) 3 Day EMERGENCY Next Day EMERGENCY Same Day TAT Relinquished by: 2 Day EMERGENCY **Relinquished by Sam** Pt. 4 Pt. 3 Pt. 2 Pt. 1 T-1 FL @ 6" lowry@trcsolutions.com **Client / Reporting Information** T-2 SSW T-1 WSW T-1 NSW T-2 WSW T-2 ESW **T-2 NSW** T-2 FL @ 2' T-1 SSW TAT Starts Day received by Lab, if received by 5:00 pm Turnaround Time ( Business days) Field ID / Point of Collection x Contract TAT 7 Day TAT 5 Day TAT 432-466-4450 Phone No: SAMPLE CUSTOPY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY 2-22 4:11 Date Time: Sample Date Time: Depth 6-8" 6-8" 6-8" 6-8" ŵ ŝ 6 ů + -+ -N COG Operating C/O Becky Haskell Blue Jay Federal #001H Battery Project Location: Midland, Texas (432-704-5251) Invoice: Lea Co, NM Project Name/Number: 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 2/21/2018 Collection roice To: Date Temp: 4,8 CF:(0-6: -0.2°C) Corrected Temp: 4. (c TRRP Checklist 3:10 3:00 4:00 3:55 3:50 3:45 3:35 3:30 3:25 3:15 3:05 Time 3:40 3:20 (6-23: +0.2°C) Project Information Level 3 (CLP Forms) Level II Std QC Level III Std QC+ Forms Idr Matrix S S s \$ S S S S s S s s S www.xenco.com Data Deliverable Infor # of bottles 5 --4 -4 -----+ HCI NaOH/Zn F Number of prese Acetate ID:R-8 dion INOS UST / RG -411 TRRP Level IV H2SO4 Level IV (Full Data Pkg /raw data) IaOH NaHSO4 MEOH ard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any the limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will NONE × TPH 8015 M Ext × × × × × × × × × × × × Chloride E 300 Preserved where applicable × × × × × × × × × × × × × Date Time: 22318 Date Time: **BTEX 8021B** × × × × × × × × × × × × × Analytical Information Hold FED-EX / UPS: Tracking # 430 dneel2@concho.com kblackburn@trcsolutions.com rhaskell@concho.com ilowry@trcsolutions.com Notes: Received By: Received By: Xenco Job # 5 2.0 Cooler Temp. ため zconder@trcsolutions.com Field Comments SL = Sludge OW =Ocean/Sea Water WI = Wipe W = Water S = Soil/Sed/Solid SW = Surface water P = Product 0 = Oil WW= Waste Water DW = Drinking Water GW =Ground Water A = Air Thermo, Corr. Factor Matrix Codes



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



Client: TRC Solutions, Inc Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 02/23/2018 02:30:00 PM Temperature Measuring device used : R8 Work Order #: 577388 Comments Sample Receipt Checklist 4.6 #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? Yes #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#:

Date: 02/23/2018

Checklist completed by: Katie Lowe Checklist reviewed by: Mark Moak Kelsey Brooks

Date: 02/27/2018

# **Analytical Report 577772**

for TRC Solutions, Inc

Project Manager: Joel Lowry

Blue Jay Federal #001H

#### 07-MAR-18

Collected By: Client





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

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), 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 (T104704400-18-14) 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) Xenco-Atlanta (LELAP Lab ID #04176)



07-MAR-18

SUP ACCREDING

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

Reference: XENCO Report No(s): 577772 Blue Jay Federal #001H 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) 577772. 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. 577772 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,

Huns hoah

Kelsey Brooks Project Manager

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



# Sample Cross Reference 577772



#### TRC Solutions, Inc, Midland, TX

Blue Jay Federal #001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 WSWb	S	02-27-18 14:05	3 In	577772-001
T-2 ESWb	S	02-27-18 14:10	1 ft	577772-002



#### CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: Blue Jay Federal #001H

Project ID: Work Order Number(s): 577772 Report Date:07-MAR-18Date Received:02/28/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Project Id:Contact:Joel LowryProject Location:Lea Co. NM

## Certificate of Analysis Summary 577772

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H



Date Received in Lab:Wed Feb-28-18 02:30 pmReport Date:07-MAR-18Project Manager:Kelsey Brooks

	Lab Id:	577772-0	01	577772-00	02		
Analysis Requested	Field Id:	T-1 WSW	/b	T-2 ESW	Ъ		
Analysis Kequesiea	Depth:	3- In		1- ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Feb-27-18 1	4:05	Feb-27-18 1	4:10		
TPH by SW8015 Mod	Extracted:	Mar-01-18 1	Mar-01-18 12:00		2:00		
	Analyzed:	Mar-01-18 2	23:34	Mar-02-18 0	0:00		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0		
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0		
Total TPH		<15	15	<15	15		

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

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Kelsey Brooks Project Manager



# **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	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



# Form 2 - Surrogate Recoveries

#### Project Name: Blue Jay Federal #001H

Work Ord Lab Batch #	lers: 57777 : 3042633	2, Sample: 577772-001 / SMP	Batc	Project II h: 1 Matri	<b>):</b> x: Soil									
Units:	mg/kg	Date Analyzed: 03/01/18 23:34	SU	RROGATE I	RECOVERYS	STUDY								
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
		Analytes			[D]									
1-Chloroocta	ne		92.3	99.9	92	70-135								
o-Terphenyl			44.5	50.0	89	70-135								
Lab Batch #	: 3042633	Sample: 577772-002 / SMP	MP Batch: 1 Matrix: Soil											
Units:	mg/kg	Date Analyzed: 03/02/18 00:00	SURROGATE RECOVERY STUDY											
	TPH I	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chloroocta	ne	Anarytes	96.5	99.7	97	70-135								
o-Terphenyl														
Lab Batch #	• 3042633	Sample: 7640031-1-BLK / B	47.8         49.9         96         70-135           BLK         Batch:         1         Matrix: Solid											
Lab Daten # Units:	mg/kg	<b>Date Analyzed:</b> 03/01/18 13:16		RROGATE I										
cints.	ing/ Kg	Date Analyzett. 05/01/10 15:10	50	KKOGATE I	RECOVERY	Control Limits Fla								
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R		Flags							
		Analytes			[D]									
1-Chloroocta	ne		104	100	104	70-135								
o-Terphenyl			53.5	50.0	107	70-135								
Lab Batch #	: 3042633	Sample: 7640031-1-BKS / E	BKS Bate	h: 1 Matri	x: Solid									
Units:	mg/kg	Date Analyzed: 03/01/18 13:41	SU	RROGATE I	RECOVERY	STUDY								
	TPH I	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
		Analytes			[D]									
1-Chloroocta	ne		116	100	116	70-135								
o-Terphenyl			58.0	50.0	116	70-135								
Lab Batch #		Sample: 7640031-1-BSD / E			<b>x:</b> Solid									
Units:	mg/kg	Date Analyzed: 03/01/18 14:07	SU	RROGATE I	RECOVERY	STUDY								
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
		Analytes			[D]									
1-Chloroocta	ne		122	100	122	70-135								
o-Terphenyl			60.1	50.0	120	70-135								

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



# Form 2 - Surrogate Recoveries

# Project Name: Blue Jay Federal #001H

Work O	rders : 57777	2,		Project ID:						
Lab Batch	<b>n #:</b> 3042633	Sample: 577756-001 S / MS	S Batcl	n: 1 Matrix:	Soil					
Units:	mg/kg	Date Analyzed: 03/01/18 14:59	SU	RROGATE RE	ECOVERY S	STUDY				
	TPH I	oy SW8015 Mod	Amount Found [A]	FoundAmountRecovery[A][B]%R						
		Analytes			[D]					
1-Chlorooc	ctane		118	99.7	118	70-135				
o-Terpheny	yl		56.8	49.9	114	70-135				
Lab Batch	n#: 3042633	Sample: 577756-001 SD / N	MSD Batcl	n: 1 Matrix:	Soil					
Units:	mg/kg	Date Analyzed: 03/01/18 15:24	SU	RROGATE RE	ECOVERY S	STUDY				
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
		Anarytes					ļ			
1-Chlorooc	ctane		107	99.7	107	70-135				
o-Terpheny	yl		52.2	49.9	105	70-135				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

- \*\*\* Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 \* A / B



#### **BS / BSD Recoveries**



#### Project Name: Blue Jay Federal #001H

Work Order	·#: 577772				Project ID:										
Analyst:	ARM	D	ate Prepar	red: 03/01/201	8	Date Analyzed: 03/01/2018									
Lab Batch ID	: 3042633 Sample: 7640031-1-	BKS Batch #: 1 Matrix: Solid													
Units:	ERY STUI	DY													
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analy	vtes		[ <b>B</b> ]	[C]	[D]	[E]	Result [F]	[G]							
Gasoline I	Range Hydrocarbons (GRO)	<15.0	1000	974	97	1000	1080	108	10	70-135	35				
Diesel Rat	nge Organics (DRO)	<15.0	1000	1000	100	1000	1110	111	10	70-135	35				

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries

#### **Project Name: Blue Jay Federal #001H**



Work Order # :	577772						Project II	):						
Lab Batch ID:	3042633 Q	C- Sample ID:	577756	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil						
Date Analyzed:	03/01/2018	Date Prepared:03/01/2018Analyst:ARM												
<b>Reporting Units:</b>	g/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
]	FPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag		
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
Gasoline Range	Hydrocarbons (GRO)	<15.0	997	1060	106	997	957	96	10	70-135	35			
Diesel Range Or	<15.0	997	1100	110	997	1010	101	9	70-135	35				

Matrix Spike Percent Recovery  $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD =  $200^{\circ}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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

# 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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Invoce - review of the second of the second of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service, any losses or expenses incurred by the Client faceholds 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 terms will be enforced unless previously negotiated under a fully executed client contract.	Relinquished by: 6 Jolice Notice Stateburg of this document and a	Relinquished by: 3	1 and a statement was	Relinguished by Campler:	TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	i urnaround Time ( Business days)	12	11	10	9	8	7	6	5	4	3	2 T-2 ESWb	1 T-1 WSWb	No. Field ID / Point of Collection		Samplers's Name: Zach Conder	Joel Lowry	ilowry@trcsolutions.com zconder@trcsolutions.com	Midland, TX 79703	Company Address: 2057 Commerce Drive	Company Name / Branch: TRC Environmental Corporation	Client / Reporting Information		
inquisnment of samples constitued uch loses are due to circumstar				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	ab, if received by 5:0		X Contract TAT	7 Day TAT	6 Day TAT	(S)													Collection				432-466-4450	-					
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rom client con	Received By:	Received By:	1/2/1 Ftailu	BELOW EA		TR	-														2:10	2:05	Time				ng C/O Becky		tion:	Mumber: deral #001	Pro		
	By:	By:	Fran	CH TIME S/		TRRP Checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Da											s	_	Matrix				Haskell			н	<b>Project Information</b>		W
		1	IU( C	AMPLES (		list	Forms)	QC+ Forr	õ	<b>Data Deliverable Information</b>											-	-	# of bottles	_							mation		www.xenco.com
			X	CHANGE				su		able Info	$\vdash$	-	-	-	-	-		+	+	+	-		HCI NaOH/Zn	Nc									b.com
				POSSES			П	П		rmation			-	-	-		-	-	+	+	+	-	Acetate HNO3	Number of preserved bottles									
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	0-6.	Banaltrari Bu:	Received By:		FED-EX / UPS: Tracking #	dneel2@concho.com	Ircsolu	rhaskell@concho.com	ilowry@trcsolutions.com		+	+	+	+	+	+	+	+	+	+	+	+		-	_	_	_		_	_	-	-	Xenco Job #
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	ctor	5	Ň						zconder@trcsolutions.com													S		A = Air		WI = Wipe	SW = Surface water SL = Sludge	DW = Drinking Water P = Product	S = Soil/Sed/Solid GW =Ground Water	5	0000	ndes	
	9		5						iom															er		wate	ter	later	ter				

Final 1.000



# **XENCO Laboratories**



ATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc	Acceptable Temperature Range: 0 - 6 degC							
Date/ Time Received: 02/28/2018 02:30:00 PM	Air and Metal samples Acceptable Range: Ambient							
Work Order #: 577772	Temperature Measuring device used : R8							
Sample Receip	ot Checklist Comments							
#1 *Temperature of cooler(s)?	4.2							
#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?	Νο							
#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?	<b>No</b> TPH received in bulk jars							
#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)?	Νο							
#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#:

Date: 02/28/2018

Checklist completed by: Connie Hernandez Checklist reviewed by: Kelsey Brooks

Date: 03/02/2018

# Analytical Report 578297

for TRC Solutions, Inc

Project Manager: Joel Lowry Blue Jay Federal #001H Battery

#### 15-MAR-18

Collected By: Client





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

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), 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 (T104704400-18-14) 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) Xenco-Atlanta (LELAP Lab ID #04176)



15-MAR-18

STATE ACCREDING

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

Reference: XENCO Report No(s): **578297 Blue Jay Federal #001H Battery** 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) 578297. 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. 578297 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,

Huns hoah

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

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



# Sample Cross Reference 578297



#### TRC Solutions, Inc, Midland, TX

Blue Jay Federal #001H Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Pt. 4b	S	03-02-18 15:00	6 - 8 In	578297-001
OS-1b	S	03-02-18 15:05	0 - 6 In	578297-002
OS-2b	S	03-02-18 15:10	0 - 6 In	578297-003



### CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: Blue Jay Federal #001H Battery

Project ID: Work Order Number(s): 578297 Report Date:15-MAR-18Date Received:03/06/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3043357 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id: Contact: Joel Lowry

**Project Location:** Lea Co, NM

Certificate of Analysis Summary 578297

TRC Solutions, Inc, Midland, TX Project Name: Blue Jay Federal #001H Battery



Date Received in Lab:Tue Mar-06-18 11:00 amReport Date:15-MAR-18Project Manager:Kelsey Brooks

	Lab Id:	578297-0	01	578297-0	02	578297-0	03		
Aren busin Domenatod	Field Id:	Pt. 4b		OS-1b		OS-2b			
Analysis Requested	Depth:	6-8 In		0-6 In		0-6 In			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Mar-02-18	15:00	Mar-02-18	15:05	Mar-02-18	15:10		
BTEX by EPA 8021B	Extracted:			Mar-10-18	12:15	Mar-10-18	12:15		
	Analyzed:			Mar-11-18	10:40	Mar-11-18	10:59		
	Units/RL:			mg/kg	RL	mg/kg	RL		
Benzene				< 0.00341	0.00341	< 0.00332	0.00332		
Toluene				< 0.00341	0.00341		0.00332		
Ethylbenzene				< 0.00341	0.00341	< 0.00332	0.00332		
m,p-Xylenes				< 0.00683	0.00683	< 0.00664	0.00664		
o-Xylene				< 0.00341	0.00341		0.00332		
Total Xylenes				< 0.00341	0.00341		0.00332		
Total BTEX				< 0.00341	0.00341	< 0.00332	0.00332		
Chloride by EPA 300	Extracted:			Mar-12-18	11:40	Mar-12-18	11:40		
	Analyzed:			Mar-13-18 (	05:04	Mar-13-18 (	)5:31		
	Units/RL:			mg/kg	RL	mg/kg	RL		
Chloride				<5.00	5.00	<4.95	4.95		
TPH by SW8015 Mod	Extracted:	Mar-14-18	07:00	Mar-14-18 (	07:00	Mar-08-18	16:00		
	Analyzed:	Mar-15-18	13:21	Mar-15-18	13:47	Mar-10-18 (	00:24		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Diesel Range Organics (DRO)		109	15.0	226	14.9	30.4	15.0		
Oil Range Hydrocarbons (ORO)		24.6	15.0	54.3	14.9	<15.0	15.0		
Total TPH		133.6	15	280.3	14.9	30.4	15		

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

Huns Boah

Kelsey Brooks Project Manager



# **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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



Lab Batch #: 🤅	3043401	Sample: 578297-003 / SMP	Batcl	Project ID h: 1 Matrix					
Units: 1	ng/kg	Date Analyzed: 03/10/18 00:24	SU	RROGATE R	ECOVERY S	STUDY			
	TPH b	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage		
		Analytes			[D]				
1-Chlorooctane			92.4	99.9	92	70-135			
o-Terphenyl			41.9	50.0	84	70-135			
Lab Batch #: 3	3043357	Sample: 578297-002 / SMP	Batcl	h: 1 Matrix	: Soil				
Units: 1	ng/kg	Date Analyzed: 03/11/18 10:40	SU	RROGATE R	ECOVERY S	STUDY			
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenz		Anaryus	0.0257	0.0300	86	70-130			
4-Bromofluorob	enzene		0.0324	0.0300	108	70-130			
Lab Batch #: 3	3043357	Sample: 578297-003 / SMP	Batcl	h: 1 Matrix	: Soil				
Units: 1	ng/kg	Date Analyzed: 03/11/18 10:59	SURROGATE RECOVERY STUDY						
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage		
		Analytes			[D]				
1,4-Difluorobenz	zene		0.0266	0.0300	89	70-130			
4-Bromofluorob	enzene		0.0338	0.0300	113	70-130			
Lab Batch #: 3	3043812	Sample: 578297-001 / SMP	Batcl	h: 1 Matrix	: Soil				
Units: 1	ng/kg	Date Analyzed: 03/15/18 13:21	SU	RROGATE R	ECOVERY S	STUDY			
		y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane			105	99.7	105	70-135			
o-Terphenyl			50.9	49.9	102	70-135			
Lab Batch #: 3	3043812	Sample: 578297-002 / SMP	Batcl	h: 1 Matrix	: Soil	<u> </u>			
Units: 1	ng/kg	Date Analyzed: 03/15/18 13:47	SU	RROGATE R	ECOVERY S	STUDY			
	TPH by SW8015 Mod			True Amount [B]	Recovery %R	Control Limits %R	Flag		
	Analytes				[D]				
1-Chlorooctane			97.7	99.6	98	70-135			
o-Terphenyl			48.1	49.8	97	70-135			

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



		-					
Units:	mg/kg	Date Analyzed: 03/09/18 03:43	SU	JRROGATE R	ECOVERY S	STUDY	
	TPH by SW8015 Mod Analytes Analytes Analytes Analytes Analytes Analytes Analytes Difluorobenzene Batch #: 3043812 Sample: 7640872-1-BI S: mg/kg Date Analyzed: 03/15/18 07:14 TPH by SW8015 Mod Analytes Analyte Anal	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chloroocta	ne		97.0	100	97	70-135	
o-Terphenyl			49.3	50.0	99	70-135	
Lab Batch #	: 3043357	Sample: 7640559-1-BLK / I	BLK Batc	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 03/11/18 00:01	SU	JRROGATE R	ECOVERY S	STUDY	
			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flage
1,4-Difluorob		Analytes	0.0254	0.0300	85	70-130	
4-Bromofluor	obenzene		0.0293	0.0300	98	70-130	
Lab Batch #	: 3043812	Sample: 7640872-1-BLK / I					
Units:	mg/kg	Date Analyzed: 03/15/18 07:14		JRROGATE R	ECOVERYS	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes	[]	[2]	[D]	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1-Chloroocta	ne		104	100	104	70-135	
o-Terphenyl			52.5	50.0	105	70-135	
Lab Batch #	: 3043401	Sample: 7640492-1-BKS / I	BKS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 03/09/18 04:08	SU	<b>RROGATE R</b>	ECOVERY S	STUDY	
			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		114	100	114	70-135	
o-Terphenyl			55.1	50.0	110	70-135	
Lab Batch #	: 3043357	Sample: 7640559-1-BKS / H	BKS Bate	h: 1 Matrix	: Solid	· · · · · ·	
Units:	mg/kg	Date Analyzed: 03/10/18 22:25	SU	JRROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
	4-Difluorobenzene			0.0300	88	70-130	
1.4-Diffuoroh			0.0265				

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



Units: m	a/ka	Data Analyzad: 02/15/18 07.20			FOOTERT		
Units: mg	g/kg	Date Analyzed: 03/15/18 07:39	SU.	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
		Analytes					
1-Chlorooctane			111	100	111	70-135	
o-Terphenyl	12 101		55.6	50.0	111	70-135	
Lab Batch #: 30		Sample: 7640492-1-BSD / H	BSD Batch	n: 1 Matrix	: Solid		
Units: mg	g/kg	Date Analyzed: 03/09/18 04:35	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		Anaryus	111	100	111	70-135	
o-Terphenyl			54.5	50.0	109	70-135	
Lab Batch #: 30	43357	Sample: 7640559-1-BSD / H				70-155	
	g/kg	Date Analyzed: 03/10/18 22:44					
Cints. ma	g/Kg	Date Analyzeu. 03/10/18 22.44	SU.	RROGATE R	ECOVERY S	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluorobenze	ne		0.0271	0.0300	90	70-130	
4-Bromofluoroben	zene		0.0333	0.0300	111	70-130	
Lab Batch #: 30	43812	Sample: 7640872-1-BSD / H	BSD Batch	n: 1 Matrix	: Solid	·	
Units: mg	g/kg	Date Analyzed: 03/15/18 09:26	SU	RROGATE R	ECOVERY S	STUDY	
		y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flage
1-Chlorooctane			126	100	126	70-135	
o-Terphenyl			63.8	50.0	128	70-135	
Lab Batch #: 30	43401	Sample: 578049-001 S / MS	B Batch	n: 1 Matrix	: Soil	<u> </u>	
Units: mg	g/kg	Date Analyzed: 03/09/18 05:27	SU	RROGATE R	ECOVERY	STUDY	
		y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1-Chlorooctane			124	99.8	124	70-135	
o-Terphenyl		1	61.2	49.9	123	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



	#: 3043357	Sample: 578592-004 S / MS									
Units:	mg/kg	Date Analyzed: 03/10/18 23:03	SU	RROGATE R	ECOVERY S	STUDY					
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor	obenzene		0.0258	0.0300	86	70-130					
4-Bromoflu	orobenzene		0.0310	0.0300	103	70-130					
Lab Batch	<b>#:</b> 3043812	Sample: 578897-001 S / MS	S Bate	h: 1 Matrix	: Soil						
Units:	mg/kg	Date Analyzed: 03/15/18 10:18	SU	RROGATE R	ECOVERY S	STUDY					
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooc		Analytes	117	99.8	117	70-135					
o-Terpheny			57.2	49.9	117	70-135					
	#: 3043401	Sample: 578049-001 SD / N			-	70-133					
Units:	mg/kg	Date Analyzed: 03/09/18 05:53									
Units.	iiig/ kg	Date Analyzeu. 05/07/18 05:55	SU	RROGATE R	ECOVERY	STUDY					
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1-Chlorooc	tane		122	99.6	122	70-135					
o-Terpheny	1		58.6	49.8	118	70-135					
Lab Batch	#: 3043357	Sample: 578592-004 SD / N	MSD Bate	h: 1 Matrix	: Soil						
Units:	mg/kg	Date Analyzed: 03/10/18 23:22	SU	RROGATE R	ECOVERY S	STUDY					
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1.4-Difluor		1111119 000	0.0277	0.0300	92	70-130					
4-Bromoflu			0.0319	0.0300	106	70-130					
	#: 3043812	Sample: 578897-001 SD / N									
Units:	mg/kg	Date Analyzed: 03/15/18 10:45		RROGATE R		STUDY					
	TPH by SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1-Chlorooc	tane		110	100	110	70-135					
o-Terpheny	1		53.1	50.0	106	70-135					

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B



#### **BS / BSD Recoveries**



#### **Project Name: Blue Jay Federal #001H Battery**

Work Order	r #: 578297, 578297							Pro	ject ID:			
Analyst:	ALJ	D	ate Prepar	red: 03/10/20	18			Date A	nalyzed: (	03/10/2018		
Lab Batch ID	<b>Sample:</b> 7640559-	-BKS	Bate	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene		<0.00202	0.101	0.0790	78	0.100	0.0735	74	7	70-130	35	
Toluene		< 0.00202	0.101	0.0845	84	0.100	0.0783	78	8	70-130	35	
Ethylbenz	zene	< 0.00202	0.101	0.0942	93	0.100	0.0897	90	5	70-130	35	
m,p-Xyler	nes	< 0.00403	0.202	0.185	92	0.200	0.178	89	4	70-130	35	
o-Xylene		< 0.00202	0.101	0.0937	93	0.100	0.0910	91	3	70-130	35	
Analyst:	OJS	D	ate Prepar	red: 03/12/20	18			Date A	nalyzed: (	03/12/2018		
Lab Batch ID	<b>Sample:</b> 7640599-1	-BKS	Bate	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300 ytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	271	108	250	267	107	1	90-110	20	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



#### **BS / BSD Recoveries**



#### **Project Name: Blue Jay Federal #001H Battery**

Work Orde	er #: 578297, 578297							Pro	ject ID:			
Analyst:	ARM	D	ate Prepai	ed: 03/08/20	18			Date A	nalyzed: (	03/09/2018		
Lab Batch II	<b>D:</b> 3043401 <b>Sample:</b> 7	640492-1-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE /	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	)Y	
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Ana	lytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Gasoline	e Range Hydrocarbons (GRO)	<15.0	1000	1000	100	1000	997	100	0	70-135	35	
Diesel R	Range Organics (DRO)	<15.0	1000	1040	104	1000	1030	103	1	70-135	35	
Analyst:	ARM	D	ate Prepai	red: 03/14/20	18			Date A	nalyzed: (	)3/15/2018		
Lab Batch II	<b>D:</b> 3043812 <b>Sample:</b> 7	640872-1-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE /	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	ЭY	
Anal	TPH by SW8015 Mod lytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline	e Range Hydrocarbons (GRO)	<15.0	1000	997	100	1000	1190	119	18	70-135	35	
Diesel R	Range Organics (DRO)	<15.0	1000	1030	103	1000	1180	118	14	70-135	35	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



### Form 3 - MS / MSD Recoveries

#### Project Name: Blue Jay Federal #001H Battery



<b>Work Order # :</b> 578297						Project II	):				
Lab Batch ID: 3043357	QC- Sample ID:	578592	-004 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 03/10/2018	Date Prepared:	03/10/2	018	An	alyst: A	ALJ					
<b>Reporting Units:</b> mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	FE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[ <b>B</b> ]		[D]	[E]		[G]				
Benzene	<0.00200	0.100	0.0663	66	0.100	0.0629	63	5	70-130	35	X
Toluene	< 0.00200	0.100	0.0526	53	0.100	0.0525	53	0	70-130	35	X
Ethylbenzene	<0.00200	0.100	0.0272	27	0.100	0.0384	38	34	70-130	35	X
m,p-Xylenes	< 0.00401	0.200	0.0530	27	0.201	0.0707	35	29	70-130	35	X
o-Xylene	<0.00200	0.100	0.0283	28	0.100	0.0372	37	27	70-130	35	X
Lab Batch ID: 3043530	QC- Sample ID:	578121	-001 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 03/12/2018	Date Prepared:	03/12/2	018	An	alyst: (	SIC					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	FE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride	998	248	1180	73	248	1260	106	7	90-110	20	X
Lab Batch ID: 3043530	QC- Sample ID:	578297	-002 S	Ba	tch #:	1 Matrix	: Soil				
<b>Date Analyzed:</b> 03/13/2018	Date Prepared:	03/12/2	018	An	alyst: (	OJS					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	FE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	L-J	[D]	[E]		[G]				
Chloride	<5.00	250	242	97	250	257	103	6	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



### Form 3 - MS / MSD Recoveries

#### Project Name: Blue Jay Federal #001H Battery



Work Order # :	578297						Project II	):				
Lab Batch ID:	3043401	QC- Sample ID:	578049	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	03/09/2018	Date Prepared:	03/08/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
ſ	TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range I	Hydrocarbons (GRO)	<15.0	998	1110	111	996	1070	107	4	70-135	35	
Diesel Range Or	ganics (DRO)	<15.0	998	1160	116	996	1110	111	4	70-135	35	
Lab Batch ID:	3043812	QC- Sample ID:	578897	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	03/15/2018	Date Prepared:	03/14/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
ſ	FPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]		[D]	[E]		[G]				
Gasoline Range	Hydrocarbons (GRO)	<15.0	998	1140	114	1000	969	97	16	70-135	35	
Diesel Range Or	ganics (DRO)	<15.0	998	1140	114	1000	988	99	14	70-135	35	

Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

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1990	

Stafford, Texas (281-240-4200)

# CHAIN OF CUSTODY

Page 1 Of 1

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

Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300)		Midland, Texas (432-704-5251)	kas (432-70	4-5251)															
				WWW	www.xenco.com	B									Xenco Job #	*	5	1829	
												Ana	Analytical Information	formatic	ă				Matrix Codes
Client / Reporting Information			Proje	<b>Project Information</b>	tion								_						
Company Name / Branch: TRC Environmental Corporation		Project Name/Number: Blue Jay Federal #001H Battery	eral #001H	Ratterv						_			-						W = Water S = Soil/Sed/Solid
Company Address: 2057 Commerce Drive Midland TX 75703		Project Location: Lea Co, NM	ä																GW =Ground Water DW = Drinking Water
Email: Phone No: ilowny@trcsolutions.com 432-466-4450 zconder@trcsolutions.com		Invoice To: COG Operating C/O Becky Haskell	C/O Becky H	askell						_					_				SW = Surface water SL = Sludge OW =Ocean/Sea Water
Project Contact: Joel Lowry		Invoice:								xt	)								WI = Wipe
Samplers's Name: Zach Conder										ME	300	В				_			WW= Waste Water
		Collection				Numbe	r of pres	Number of preserved bottles	tiles	015 N	e E 3	8021		_					A = Air
No. Field ID / Point of Collection	Sample Depth	Date	Time	Matrix bc	# of bottles	NaOH/Zn Acetate	HNO3 H2SO4	NaOH NaHSO4		TPH 80	Chloride	BTEX 8	Hold					T	Field Comments
1 Pt. 4b	6-8"	3/2/2015	3:00	s	-	_		_	-	×						-			
2 OS-1b	0-6"	3/2/2015	3:05	s	-					×	×	×				-			
3 OS-2b	0-6"	3/2/2015	3:10	s	-	_				×	×	×				-			
4					-											-			
5					-			-		+	T		-			-			
6					+		+	-	-	+	1		+	1		+			T
					+		+	-	1	+			-			- 0 -	2	IR II	IR ID:R-8
8															enip	CE:(0-6: -0.2°C)	.2°C	-	
10												IJ	E		11.10	(G-23: +0.2°C)	+0.2	°C)	
11															Corre	Corrected Temp: 2	Terr	S C idi	
12 Turnaround Time / Business Asses							-	-		F			-	F		-	Ľ		
			] [				- L				Ì								
Same Day TAT			Leve	Level II Std QC			Lev	Level IV (Full Data Pkg	I Data P		Iraw data)		ilo	ilowry@trcsolutions.com	solution	s.com		Z	zconder@trcsolutions.com
Next Day EMERGENCY			Leve	Level III Std QC+ Forms	C+ Forms		TR	TRRP Level IV	N				The last	rhaskell@concho.com	oncho.	moc			
2 Day EMERGENCY X Contract TAT			Lev	Level 3 (CLP Forms)	'orms)	_	us	UST / RG -411	4				Kb	kblackburn@trcsolutions.com	@trcso	lutions.c	mo		
3 Day EMERGENCY			TRR	TRRP Checklist	st								dn	dneel2@concho.com	oncho.c	om			
TAT Starts Day received by Lab, if received by 5:00 pm	00 pm	DOCUMENTED	BEI OW FAC	H TIME SA		ANGE POS	RECOIDA		NCCOLIE				FE	FED-EX / UPS: Tracking #	PS: Tra	oking #			
Relinquished by Sampler:	Date Time:	121 P	Received By:	BY: He	2	K	Reli	Relinquished By:	By:			Date Time:	ime:		Received By:	ed By:			
Ralinquished by:	Date Time:		Received By:	By:	1	8	Reli	Relinquished By:	By:			Date Time:	_	1:0	Received By:	ed By:			
Relinquished by:	Date Time:		Received By: 5	By:	4		Cus	Custody Seal #	*		Pres	w pave	de a	olicable	ľ	Onlee		Cooler Temp.	Thermo. Corr. Factor
worker, vorce: signature or rus occument and reinquissment or samples constitutes a valid purchase order from client company to Xenco, its affiates and adocontractors. It assigns standard and Vosses or expenses incurred with e Client if such loses are due to incrimetances haved the condition of Xenco A minimum entering standard and to contractors. It assigns standard with e Client is assigns standard with e Client is such oses are due to incrimetances haved the condition of Xenco A minimum entering standard and to contractors. It assigns standard with e Client is assigns standard with e Client in the condition of Xenco A minimum entering and Xenco A minimum entering and Xenco A minimum entering an	stitutes a valid p	urchase order h	Makes and the second														ŀ		



# **XENCO Laboratories**



Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc	Acceptable Temperature Ra	nae: 0 - 6 deaC
Date/ Time Received: 03/06/2018 11:00:00 AM	Air and Metal samples Acce	ptable Range: Ambient
Work Order #: 578297	Temperature Measuring dev	ice used: R8
Sample Recei	pt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5	
#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?	No	TPH received in bulk jars
#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#:

Date: 03/06/2018

Checklist completed by: Connie Hernandez Checklist reviewed by: Kelsey Brooks

Date: 03/07/2018

# **Analytical Report 581745**

for TRC Solutions, Inc

Project Manager: Joel Lowry Blu Jay Fed #001H Battery

#### 13-APR-18

Collected By: Client



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

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), 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 (T104704400-18-14) 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) Xenco-Atlanta (LELAP Lab ID #04176)



13-APR-18

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

Reference: XENCO Report No(s): **581745 Blu Jay Fed #001H Battery** Project Address: Eddy 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) 581745. 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. 581745 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,

Huns hoah

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

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



Sample Id OS-1C Pt-4C Sample Cross Reference 581745

#### TRC Solutions, Inc, Midland, TX

Blu Jay Fed #001H Battery

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	04-04-18 09:00		581745-001
S	04-04-18 09:10		581745-002

Page 3 of 13



#### CASE NARRATIVE

Client Name: TRC Solutions, Inc Project Name: Blu Jay Fed #001H Battery

Project ID: Work Order Number(s): 581745 Report Date: 13-APR-18 Date Received: 04/06/2018

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3046275 DRO-ORO By SW8015B Surrogate Tricosane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7642346-1-BKS,7642346-1-BSD.



Project Id:Contact:Joel LowryProject Location:Eddy Co. NM

### Certificate of Analysis Summary 581745

TRC Solutions, Inc, Midland, TX Project Name: Blu Jay Fed #001H Battery

Date Received in Lab:Fri Apr-06-18 04:40 pmReport Date:13-APR-18Project Manager:Kelsey Brooks

	Lab Id:	581745-0	01	581745-0	12			
					52			
Analysis Requested	Field Id:	OS-1C		Pt-4C				
Analysis Kequesieu	Depth:							
	Matrix:	SOIL		SOIL				
	Sampled:	Apr-04-18 (	09:00	Apr-04-18 0	9:10			
DRO-ORO By SW8015B	Extracted:	Apr-10-18	11:35	Apr-10-18 1	1:35	1		
	Analyzed:	Apr-10-18	19:16	Apr-10-18 1	9:51			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Diesel Range Organics (DRO)		<24.9	24.9	<25.1	25.1			
Oil Range Hydrocarbons (ORO)		<24.9	24.9	<25.1	25.1			
TPH GRO by EPA 8015 Mod.	Extracted:	Apr-09-18	12:00	Apr-09-18 1	2:00			
	Analyzed:	Apr-11-18	02:07	Apr-11-18 0	2:33			
	Units/RL:	mg/kg	RL	mg/kg	RL			
TPH-GRO		<3.68	3.68	<3.86	3.86			

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

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Kelsey Brooks Project Manager

Final 1.000



# **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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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


### Form 2 - Surrogate Recoveries Project Name: Blu Jay Fed #001H Battery

Flags

Flags

Flags

Flags

Flags

### Work Orders : 581745, **Project ID:** Lab Batch #: 3046275 Matrix: Soil Sample: 581745-001 / SMP Batch: 1 mg/kg Units: Date Analyzed: 04/10/18 19:16 SURROGATE RECOVERY STUDY True Amount Control DRO-ORO By SW8015B Found Amount Recovery Limits [A] [B] %R %R [D] Analytes Tricosane 65-144 11.8 9.94 119 n-Triacontane 8.27 9.94 83 46-152 Lab Batch #: 3046275 Sample: 581745-002 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 04/10/18 19:51 SURROGATE RECOVERY STUDY Amount True Control **DRO-ORO By SW8015B** Found Limits Amount Recovery [A] [B] %R %R [**D**] Analytes Tricosane 10.0 65-144 11.6 116 n-Triacontane 10.0 10.1 101 46-152 Lab Batch #: 3046330 Sample: 581745-001 / SMP Batch: 1 Matrix: Soil Units: mg/kg Date Analyzed: 04/11/18 02:07 SURROGATE RECOVERY STUDY Amount True Control TPH GRO by EPA 8015 Mod. Found Limits Amount Recovery [A] [**B**] %R %R [D] Analytes 4-Bromofluorobenzene 0.101 0.100 101 76-123 a.a.a-Trifluorotoluene 1.58 1.84 86 69-120 Lab Batch #: 3046330 Sample: 581745-002 / SMP Batch: Matrix: Soil 1 Units: Date Analyzed: 04/11/18 02:33 mg/kg SURROGATE RECOVERY STUDY Amount True Control TPH GRO by EPA 8015 Mod. Found Amount Recovery Limits [**B**] %R %R [A] [D] Analytes 4-Bromofluorobenzene 0.100 0.101 101 76-123 a,a,a-Trifluorotoluene 1.79 1.93 93 69-120 Lab Batch #: 3046275 Sample: 7642346-1-BLK / BLK Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 04/10/18 13:24 SURROGATE RECOVERY STUDY Amount True Control **DRO-ORO By SW8015B** Found Amount Recovery Limits [A] [B] %R %R [D] Analytes Tricosane 10.5 10.0 105 65-144 n-Triacontane 12.8 10.0 128 46-152

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



### Form 2 - Surrogate Recoveries Project Name: Blu Jay Fed #001H Battery

### Work Orders : 581745, **Project ID:** Lab Batch #: 3046330 Matrix: Solid Sample: 7642259-1-BLK / BLK Batch: 1 mg/kg Units: Date Analyzed: 04/10/18 21:10 SURROGATE RECOVERY STUDY True Amount Control TPH GRO by EPA 8015 Mod. Recovery Found Amount Limits Flags [A] [B] %R %R [D] Analytes 4-Bromofluorobenzene 0.0933 76-123 0.100 93 a.a.a-Trifluorotoluene 2.24 2.00 112 69-120 Lab Batch #: 3046275 Sample: 7642346-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 04/10/18 14:00 SURROGATE RECOVERY STUDY Amount True Control **DRO-ORO By SW8015B** Found Limits Amount Flags Recovery [A] [B] %R %R [**D**] Analytes Tricosane 10.0 167 65-144 \*\* 16.7 n-Triacontane 10.0 11.6 116 46-152 Lab Batch #: 3046330 Sample: 7642259-1-BKS / BKS Batch: 1 Matrix: Solid Units: Date Analyzed: 04/10/18 19:22 mg/kg SURROGATE RECOVERY STUDY Amount True Control TPH GRO by EPA 8015 Mod. Limits Found Amount Recovery Flags [A] [**B**] %R %R [D] Analytes 4-Bromofluorobenzene 0.0971 0.100 97 76-123 a.a.a-Trifluorotoluene 1.98 2.00 99 69-120 Lab Batch #: 3046275 Sample: 7642346-1-BSD / BSD Batch: Matrix: Solid 1 Units: mg/kg Date Analyzed: 04/10/18 14:35 SURROGATE RECOVERY STUDY Amount True Control DRO-ORO By SW8015B Found Amount Recovery Limits Flags [**B**] %R %R [A] [D] Analytes Tricosane \*\* 15.7 10.0 157 65-144 n-Triacontane 10.0 11.8 118 46-152 Lab Batch #: 3046330 Sample: 7642259-1-BSD / BSD Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 04/10/18 19:49 SURROGATE RECOVERY STUDY Amount True Control TPH GRO by EPA 8015 Mod. Found Amount Recovery Limits Flags [A] [B] %R %R [D] Analytes 4-Bromofluorobenzene 0.0995 0.100 100 76-123 a,a,a-Trifluorotoluene 1.57 2.00 79 69-120

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

### Project Name: Blu Jay Fed #001H Battery

	rders : 58174 #: 3046275	5, <b>Sample:</b> 581742-001 S / MS									
Units:	mg/kg	Date Analyzed: 04/10/18 15:45	SURROGATE RECOVERY STUDY								
	DRO-C	DRO By SW8015B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
Tricosane			12.6	10.1	125	65-144					
n-Triaconta	ane		7.71	10.1	76	46-152					
Lab Batch	#: 3046330	Sample: 581742-001 S / MS	B Batcl	h: 1 Matrix	: Soil						
U <b>nits:</b>	mg/kg	Date Analyzed: 04/10/18 22:57	SU	RROGATE R	ECOVERY	STUDY					
	TPH GRO	D by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4 December	iorobenzene	Analytes	0.104	0.100		76 100					
a.a.a-Triflu			0.104	0.100	104	76-123					
,	#: 3046275	General 591742 001 SD / N	1.60	1.98 h: 1 Matrix	81	69-120					
		Sample: 581742-001 SD / M									
Units:	mg/kg	Date Analyzed: 04/10/18 16:21	SURROGATE RECOVERY STUDY								
	DRO-C	DRO By SW8015B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes	[A]	[D]	[D]	70K					
Tricosane			12.3	10.0	123	65-144					
n-Triaconta	ane		8.97	10.0	90	46-152					
Lab Batch	#: 3046330	Sample: 581742-001 SD / N	ISD Bate	h: 1 Matrix	: Soil	1					
Units:	mg/kg	Date Analyzed: 04/10/18 23:25	SU	RROGATE R	ECOVERY	STUDY					
	TPH GRO	) by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
4-Bromofly	ıorobenzene		0.105	0.100	105	76-123					
a,a,a-Triflu			1.43	1.91	75	69-120					

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



### **BS / BSD Recoveries**



### Project Name: Blu Jay Fed #001H Battery

Work Order #: 581745							Pro	ject ID:			
Analyst: PGM	D	ate Prepar	red: 04/10/201	18			Date A	nalyzed: (	04/10/2018		
Lab Batch ID: 3046275 Sample: 7642346-	1-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Diesel Range Organics (DRO)	<25.0	100	119	119	100	114	114	4	63-139	20	
Analyst: MIT	D	ate Prepar	red: 04/09/201	18			Date A	nalyzed: (	04/10/2018		
Lab Batch ID: 3046330 Sample: 7642259-	46330         Sample: 7642259-1-BKS         Batch #: 1         Matrix: Solid										
Units: mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
TPH GRO by EPA 8015 Mod. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<4.00	20.0	19.2	96	20.0	20.7	104	8	35-129	20	

Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



### Form 3 - MS / MSD Recoveries

### **Project Name: Blu Jay Fed #001H Battery**

Work Order # :	581745						Project II	):				
Lab Batch ID: 3046275		QC- Sample ID:	581742	-001 S	Ba	tch #:	1 Matrix	<b>x:</b> Soil				
Date Analyzed:	04/10/2018	Date Prepared:	04/10/2	018	An	alyst: F	PGM					
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
D	RO-ORO By SW8015B	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Diesel Range Or	rganics (DRO)	<25.1	101	86.4	86	100	85.9	86	1	63-139	20	
Lab Batch ID:	3046330	<b>QC- Sample ID:</b> 581742-001 S <b>Batch #:</b> 1 <b>Matrix:</b> Soil										
Date Analyzed:	04/10/2018	Date Prepared:04/09/2018Analyst:MIT										
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
ТРН	GRO by EPA 8015 Mod.	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
TPH-GRO		<3.95	19.8	15.6	79	19.1	14.9	78	5	35-129	20	

Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

	U 7	1990	(00
	ABORATORIES	Setting the Standard since 1990	Stafford, Texas (281-240-4200)
(	X	Standar	xas (281
		ting the	fford, Te.
	)	Sett	Staf

581745

# CHAIN OF CUSTODY

Stafford, Texas (281-240-4200) Dallas Texas (214-902-0300)	San Antonio, Texas (210-509-3334) Midland, Texas (432-704-5251)	0-509-3334) 4-5251)	Pho	Phoenix, Arizona (480-355-0900)	581745
		www.xenco.com		Xenco Job#	
Client / Reporting Information		Project Information	-	Analytical Information	Matrix Codes
Company Name / Branch: TRC Environmental Corporation	Project Name/Number:				
Company Address:	Project Location:	2			S = Soil/Solid
2057 Commerce Drive Mildiand, TX 79703	Eddy Co, NM				GW =Ground Water
Email: Phome No: Phome No: 12/10/00/00/00/00/00/00/00/00/00/00/00/00/	Involce To: COG Operating, LLC	C/O Becky Haskell			P = Product SW = Surface water
Project Contact:					SL = Sludge OW =Ocean/Sea Wate
Joel Lowry Samplers's Name Becky Griffin	Involce:				WI = Wipe 0 = Oil
	Collection		Number of preserved bottles		WW= Waste Water A = Air
No. Field ID / Point of Collection					
Sample Sample Depth		Time Matrix # of bottles	LbH 80 юие чеон чеон чэнгоч чэон члоз члоз члоз	5 3 X3T5 3 X3T5	
2 Pt4C	4/4/2018 4/4/2018		2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	++	Field Comments
3 4 4			×		
ω					
۲ ا ۵					
6 0 <sup>1</sup>					
Turnaround Time ( Business days)					
			ormation	Notes:	
S Day TAT		Level II Std QC	Level IV (Fuli Data Pkg /raw data)	ilowry@trcsolutions.com	ш
Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Level IV	<u>maskell@concho.com</u>	
2 Day EMERGENCY X Contract TAT		Level 3 (CLP Forms)	Ust/RG 411	zconder@trcsolution.com	E
3 Day EMERGENCY		TRRP Checklist			
TAT Starts Day received by Lab, if received by 5:00 pm				FED-EX / UPS: Tracking #	**
SAMPLE CUS	SAMPLE CUSTODY MUST BE DOCUMENTED	BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	ON, INCLUDING COURIER DELIVERY	_	
44		Received By: 1	Relinquished By:	Date Time: Received By:	
Reinduished by: U Bate Time:		Received By: 3	Relinquished By: 4	Date Time: Received By:	
S S S S S S S S S S S S S S S S S S S	IS NILO T	Respired By:	Custody Seal # Pr	Proserved where applicable On Jce	Dobler Temp.
www.www.e.commerce.org.commerce and relinquishment of samples constitutes a valid purchase order from field of	Res of the second secon	farms and cor	ditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any	id shall not assume any responsibility for any k	Sees or expenses incurred by the Client H such free

Final 1.000



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

Client: TRC Solutions, Inc	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 04/06/2018 04:40:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 581745	Temperature Measuring device used : IR-3
Sample Recei	pt Checklist Comments
#1 *Temperature of cooler(s)?	4.5
#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#:

Date: 04/06/2018

Checklist completed by: Brenda Ward Brenda Ward Checklist reviewed by: Marghorah Kelsey Brooks

Date: 04/11/2018



**Client:** COG Operating, LLC **Project Name:** Blue Jay Federal #001H Battery **Prepared by:** TRC Environmental Corp. **Location:** Lea County, NM









**Client:** COG Operating, LLC **Project Name:** Blue Jay Federal #001H Battery **Prepared by:** TRC Environmental Corp. **Location:** Lea County, NM





Client: COG Operating, Project Name: Blue Jay	LLC y Federal #001H Battery	<b>Prepared by:</b> TRC Environmental Corp. <b>Location:</b> Lea County, NM
Photograph No. 7 Description: View of the release site after remediation activities.		
Direction: North		
Photograph No. 8 Description: View of the release site after remediation activities.		
Direction: Northeast		

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.

1220 S. St. Fran	icis Dr., Santa Fe	, NM 87505		Sa	inta Fe	, NM 875	05					
			Rele	ase Notific	ation	and Co	orrective A	ction				
						<b>OPERA</b>	<b>FOR</b>		🛛 Initia	al Report		Final Report
Name of Co			GOperati			Contact:			ert McNe			
Address:				lland TX 79701		Telephone N			-683-744	3		
Facility Na	me: Blue Jay	Federal #(	)01H	····· · <u>·</u>	]	Facility Typ	e: Tank B	attery				
Surface Ow	mer:	Federal		Mineral C	wner:				API No	. 30-0	)25-42	338
				LOCA	TION	N OF REI	LEASE					
Unit Letter	Section 7	Fownship	Range	Feet from the	North/	South Line	Feet from the	East/W	/est Line		Coun	ity
0	18	20S	35E	190		South	2310	E	last		Lea	1
			Latitu	ide 32.5664367	7366954	4 Longitu	le -103.495571	226436				
						-						
The CD - L				NAT	URE	OF REL		r	1/1 5			
Type of Rele	ase:	Oil (Fi	re)			Volume of	10 bbls		Volume R	ecovered: 9 bl	ble	
Source of Re	elease:	011(11				Date and H	lour of Occurrent	ce:	Date and	Hour of Dis		r:
		Flare	•			Januar	y 25, 2017 7:00 s			nuary 25, 2		
Was Immedi	ate Notice Giv					If YES, To						
				No 🗌 Not Re	equired					Tucker BLN	M	
By Whom? Rebecca Haskell Was a Watercourse Reached?						Date and Hour: January 25, 2017 Time per this email           If YES, Volume Impacting the Watercourse.						
was a water	course Keache		Yes 🛛	No		IT YES, VO	nume impacting	the wate	rcourse.			
									2.11 -	m Eab	15	2017
							y Olivia Y	u al 、	5.14 p	п, гер	15,	2017
Describe Cau	use of Problem	and Reme	dial Action	n Taken.*								
The release v	was caused by	fluid going	through th	he flare causing a	fire. The	e fire quickly	extinguished itse	elf due to	the limited	l amount of	fluid t	hat escaped
the flare.	ea Affected and	l Cleanun A	ction Tak	'en *								
Deservertue		a creating r	tenon ran									
				area. A vacuum								
		ossible impa	act from th	e release and we	will pre	sent a remedi	ation work plan t	o the NM	10CD for	approval pri	or to a	ny significant
remediation	ify that the infi	ormation gi	ven ahove	is true and comp	lete to th	te hest of my	knowledge and i	Inderstan	d that nurs	uant to NM		ules and
regulations a	all operators an	e required to	o report an	id/or file certain r	elease n	otifications a	nd perform corre	ctive acti	ons for rele	eases which	may e	ndanger
				e of a C-141 repo								
				investigate and r tance of a C-141								
	, or local laws			dance of a C-141	героп и	oes not renev	e the operator of	responsi	bility for C	omphance v	vith an	y other
	Rola	allas	1000				OIL CON	SERV	ATION	DIVISIO	<u>DN</u>	
Signature: /	ableca	Fruen	<u>un</u>							9-1		
Printed Nam	le:	Rebecca I	Haskell			Approved by Environmental Specialist:						
						Approved by			•	l	•	
Title:		Senior HS	E Coordii	nator		Approval Da	2/15/201	/ E	Expiration	Date:		
E-mail Addr		rhackell/a	concho.co	000	1	Conditions o	Approval					1
	633.	indsken(d	concho.ct					a di ua	_	Attached	1 🗸	
Date: Januar		Phone:	432-683	-7443		see a	ttached dire	ective				
Attach Add	itional Sheets	If Necess	агу									
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						L		7046	54982	_ pO\	<u> </u>	4655733