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April 22, 2019

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

**Re: Remediation Summary and Deferral Request**  
**COG: Stratojet 31 State Com #006H**  
**API No. N/A**  
**GPS: Latitude 32.523582 Longitude -103.494174**  
**UL "O", Sec. 31, T20S, R35E**  
**Lea County, NM**  
**NMOCD Ref. No. 1RP-5223**

TRC Environmental Corporation (TRC), on behalf of Plains Pipeline, LP, has prepared this Remediation Summary and Deferral Request for the Release Site known as the **Stratojet 31 State Com #006H**. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release:	Crude Oil	Volume of Release: 20 bbls	
		Volume Recovered: 15 bbls	
Source of Release:	LACT Unit	Date of Release: 9/25/18	Date of Discovery: 9/25/18
Was Immediate Notice Given?	Yes	If, YES, to Whom? NMOC District I	
Was a Watercourse Reached?	No	If YES, Volume Impacting the Watercourse: NA	
Surface Owner:	Private	Mineral Owner: State	
Describe Cause of Problem and Remedial Action Taken:			
A third party left a valve open.			

Topographical and Aerial Maps are provided as Attachments #1 and #2. General Site Photographs are provided as Attachment #8. A Copy of the Initial Release Notification and Corrective Action (NMOCD Form C-141) is provided as Attachment #9.

## REGULATORY FRAMEWORK

Surface impacts from unauthorized releases of crude oil, gases, produced water, condensate or other oil field waste which occur during normal oilfield operations are generally regulated by the New Mexico Oil Conservation Division (NMOCD) in accordance with 19.15.29 of the New Mexico Administrative Code (NMAC). 19.15.29 NMAC establishes reporting, site assessment, remediation and closure procedures based on the type and volume of the release and site characterizations, including proximity to sensitive receptors and depth to groundwater, which may be used to determine a Total Ranking Score as follows:

Site Characteristics		
Approximate Depth to Groundwater	<b>~50 ft - 75 ft</b>	
Within 300 ft. of any continuously flowing or significant watercourse?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within 200 ft. of any lakebed, sinkhole, or playa lake?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within 300 ft. of an occupied permanent residence, school, hospital, or institution?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within 500 ft. of a spring or private, domestic fresh water well?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within 1,000 ft. of any fresh water well?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within the incorporated municipal boundaries or within a municipal well field?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within 300 ft. of a wetland?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within an unstable area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Within a 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the average depth to groundwater within a 1 Mile radius of the Release Site and identify any registered water wells within a 1/2 Mile of the Release Site. If none were identified, the approximate depth to groundwater was extrapolated from a Depth to Groundwater Map utilized by the NMOCD. Depth to groundwater information is provided as Attachment #4.

Based on the approximate depth to groundwater and site characteristics, the NMOCD Closure Criteria are as follows:

Table I			Closure
Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
51 ft - 100 ft	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

## INITIAL SITE ASSESSMENT

On **October 05, 2018**, an initial site assessment was conducted at the Site. During the initial site assessment, **fourteen (14) soil samples** were collected from **seven (7) locations** (HA-1 through HA-7) within the inferred release margins in an effort to determine the vertical extent of soil impact. In addition, **four (4) soil samples** were collected from outside the inferred release margins in an effort to determine the horizontal extent of soil impact. The collected soil samples were submitted to an NMOCD-approved laboratory for analysis of BTEX, TPH and chloride concentrations. Figure 3A depicts the locations of soil samples collected the initial site assessment. A table summarizing laboratory analytical results from soil samples collected during the initial site assessment is provided below:

Concentrations of BTEX, TPH and/or Chloride in Soil											
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/kg)	Chloride (mg/kg)
HA-1 @ 6"	10/5/2018	6"	Excavated	19.8	558	5,850	27,900	33,750	4,710	38,460	-
HA-1 @ 2'	10/5/2018	2'	In-Situ	<0.050	0.409	<10.0	150	150	55.1	205	2,720
HA-2 @ 6"	10/5/2018	6"	Excavated	9.14	314	3,950	21,300	25,250	3,570	28,820	-
HA-2 @ 4'	10/5/2018	4'	In-Situ	2.08	100	286	1,760	2,046	282	2,328	112
HA-3 @ 6"	10/5/2018	6"	Excavated	18.1	417	4,390	25,000	29,390	4,790	34,180	-
HA-3 @ 2'	10/5/2018	2'	In-Situ	<0.050	<0.300	<10.0	26.3	26.3	14.3	40.6	1,280
HA-4 @ 6"	10/5/2018	6"	Excavated	2.47	81.4	579	4,010	4,589	616	5,205	-
HA-4 @ 2'	10/5/2018	2'	Excavated	<0.050	0.458	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
HA-5 @ 6"	10/5/2018	6"	Excavated	4.91	206	1,590	7,260	8,850	978	9,828	-
HA-5 @ 3'	10/5/2018	3'	Excavated	<0.050	2.39	<10.0	70.4	70.4	20.1	90.5	16.0
HA-6 @ 6"	10/5/2018	6"	Excavated	3.03	112	768	6,460	7,228	995	8,223	-
HA-6 @ 4'	10/5/2018	4'	In-Situ	<0.050	1.86	53.6	650	703.6	109	812.6	96.0
HA-7 @ 6"	10/5/2018	6"	Excavated	2.51	122	1,050	6,930	7,980	1,020	9,000	-
HA-7 @ 2'	10/5/2018	2'	In-Situ	<0.050	0.546	<10.0	54	54	17.4	71.6	256
N	10/5/2018	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	-
E	10/5/2018	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	-
S	10/5/2018	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	-
W	10/5/2018	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	-
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

Field Data, if applicable, is provided as Attachment #5. Laboratory analytical reports are provided as Attachment #6.

## REMEDATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, Plains Pipeline, LP, proposed the following remediation activities designed to advance the Release Site toward an NMOCD approved closure:

- Utilizing mechanical equipment, excavate impacted soil within the release margins in the area characterized by sample points HA-2 and HA-6 to a depth of approximately four (4) ft. bgs and the area characterized by sample point HA-7 to a depth of approximately two (2) ft. bgs, or until laboratory analytical results from confirmation soil samples indicated BTEX, TPH and chloride concentrations are below the applicable NMOCD Closure Criteria.
- Utilizing non-mechanical methods, excavate impacted soil within the release margins in the area characterized by sample points HA-1, HA-3, and HA-4 to a depth of approximately two (2) ft. bgs and the area characterized by sample point HA-5 to a depth of approximately three (3) ft. bgs, or until laboratory analytical results from confirmation soil samples indicated BTEX, TPH and chloride concentrations are below the applicable NMOCD Closure Criteria.
- Advance the sidewalls of the excavation until laboratory analytical results for excavation confirmation soil samples indicated that BTEX, TPH and chloride concentrations are below the applicable NMOCD Closure Criteria.
- Excavated soil will be temporarily stockpiled on-site, atop a polyethylene liner, pending transportation under manifest to a NMOCD-approved disposal facility.
- After receiving laboratory analytical results indicating confirmation soil samples are below the applicable NMOCD-Closure criteria excavated areas will be backfilled with locally sourced, non-impacted "like" material, at or near original relative positions. The affected area will be contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable.

## SAMPLING PLAN

After completion of excavation activities, representative five-point excavation confirmation soil samples will be collected from the excavation sidewalls, representing an area no greater than 200 square feet. A minimum of six (6) representative five-point composite excavation confirmation soil sample will be collected from the base of the excavated area representing every 200 square feet. Additional "discrete" confirmation soil samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary.



## SUMMARY OF FIELD ACTIVITIES

Impacted soil within the inferred release margins was excavated and temporarily stockpiled on-site, atop an impermeable polyethelene liner, pending final disposition. The floor and sidewalls of the excavation were advanced until visual and olfactory evidence suggested BTEX and/or TPH concentrations were below the NMOCD Closure Criteria. Upon excavating impacted soil from within the inferred release margins, twelve (12) confirmation soil samples were collected from the floor and sidewalls of the excavated area representing. The collected soil samples were submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. After receiving laboratory analytical data, samples exhibiting BTEX, TPH and/or chloride concentrations above applicable NMOCD Closure Criteria were advanced until visual and olfactory evidence suggested concentrations were below NMOCD Closure Criteria and/or until facility limitations and safety concerns required excavation activities in certain areas to cease. After receiving laboratory analytical results exhibiting BTEX, TPH and/or chloride concentrations below NMOCD Closure Criteria, in areas not affected by facility restrictions and safety concerns, the impacted soil was transported under manifest to a NMOCD-approved facility.

On November 15, 2018 a TRC representative revisited the Site in an effort to obtain delineation in the areas of the excavation where remediation activities could not be completed (FL-2 and FL-3), due to facility restrictions and safety concerns. Using non-mechanical methods, sample point FL-2 was advanced vertically until a layer of resistance was encounter at approximately eight (8) feet (ft.) below ground surface (bgs). Sample point FL-3 was advanced vertically until visual and olfactory evidence suggested BTEX, TPH and/or chloride concentrations were below applicable NMOCD Closure Criteria. The collected samples were submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. A table summarizing laboratory analytical results from confirmation soil samples is provided below:

On December 12, 2018, representatives from Plains Pipeline, LP (Plains) and TRC Companies (TRC) met with a representative for the NMOCD, District 1 at the NMOCD office in Hobbs, NM. TRC and Plains representatives presented information showing that remediation could not be completed at the Site in the areas represented by FL-2, FL-3, and Wall-3 without major site deconstruction due to facility limitations and safety concerns. After reviewing the provided information, it was of the opinion of the NMOCD District 1 representative that a deferral requested should be prepared and submitted for this Release Site. The representative also stated that they would speak with the Bureau Chief about deferring delineation of the Site in the area represented by sample point FL-2 on the same basis as the deferral for remediation. Email correspondence summarizing the meeting is provide as Attachment #10.

After receiving direction from the NMOCD District 1 representative the excavated area was backfilled with locally sourced, non-impacted "like" material. Figure 3B depict the locations of confirmation soil samples and additional delineation samples, collected on November 2, 2018 and November 15, 2018 respectively.

Concentrations of BTEX, TPH and/or Chloride in Soil											
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	EXT DRO C <sub>28</sub> -C <sub>35</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/kg)	Chloride (mg/kg)
FL-1 @ 2'	11/2/2018	2'	In-Situ	<0.050	<0.300	<10.0	19.9	19.9	<10.0	19.9	64.0
Wall-1 @ 1'	11/2/2018	1'	In-Situ	<0.050	<0.300	<10.0	48.2	48.2	<10.0	48.2	400
FL-2 @ 4'	11/2/2018	4'	In-Situ	16.5	298	1,180	5,940	7,750	843	8,593	48.0
F-2 @ 5'	11/15/2018	5'	In-Situ	66.1	836	4,850	10,300	15,150	1,450	16,600	32.0
F-2 @ 6'	11/15/2018	6'	In-Situ	52.9	613	5,320	11,000	16,320	1,590	17,910	32.0
F-2 @ 7'	11/15/2018	7'	In-Situ	66.6	727	4,400	9,270	13,670	1,610	15,280	<16.0
F-2 @ 8'	11/15/2018	8'	In-Situ	25.1	395	2,900	6,260	9,160	1,040	10,200	16.0
Wall-2 @ 2'	11/2/2018	2'	In-Situ	<0.050	0.328	<10.0	213	213	46.9	259.9	448.0
FL-3 @ 2'	11/2/2018	2'	In-Situ	<0.100	15.3	312	2,570	2,882	420	3,302	80.0
F-3 @ 3'	11/15/2018	3'	In-Situ	0.638	19.6	101	583	684	97.4	781.4	32.0
F-3 @ 4'	11/15/2018	4'	In-Situ	<0.050	0.598	<10.0	74.7	74.7	11.8	86.5	32.0
Wall-3 @ 1'	11/2/2018	1'	In-Situ	<0.050	<0.300	<10.0	308	308	74.9	382.9	608
FL-4 @ 3'	11/2/2018	3'	In-Situ	<0.050	1.25	11.3	328	339	54.0	393.3	16.0
Wall-4 @ 1.5'	11/2/2018	1.5'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FL-5 @ 4'	11/2/2018	4'	In-Situ	<0.050	2.43	30.7	519	549.7	72.9	622.6	16.0
Wall-5 @ 2'	11/2/2018	2'	In-Situ	<0.050	<0.300	11.7	229	310.7	49.1	359.8	128
FL-6 @ 2'	11/2/2018	2'	In-Situ	<0.050	<0.300	<10.0	24.7	24.7	<10.0	24.7	32.0
Wall-6 @ 1'	11/2/2018	1'	In-Situ	<0.050	<0.300	<10.0	15.6	15.6	<10.0	15.6	32.0
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

A Photographic Log is provided as Attachment #8

## DEFERRAL REQUEST

The Release occurred and was contained within the area characterized by the production pad. Based on laboratory analytical results from soil samples collected during the Remediation Activities, soil impacted above NMOCD Closure Criteria within the release margins, not effected by facility restraints, have been excavated and disposed of at an NMOCD approved disposal facility. Plains Pipeline, LP maintains that areas where remediation and delineation activities could not be completed were located beneath or adjacent to the LACT Unit and/or below ground pipelines and utilities, which could result in potentially hazardous conditions and property damage. Plains Pipeline, LP requests remediation, restoration, and reclamation in these areas be deferred until the equipment is removed during operations and/or time of abandonment, whichever comes first.

## RESTORATION, RECLAMATION AND RE-VEGETATION

Areas affected by the Release and the associated areas where remediation activities were feasible based on the location of active equipment and pipelines was restored to the condition which existed prior to the Release, to the maximum extent practical. Final remediation and reclamation in the areas affected by the Release, where remediation activities could not be completed, will be conducted in accordance with 19.15.29.12 and 19.15.29.13 NMAC, when the Site is no longer being utilized for oil and gas operations. Excavated areas were backfilled with locally sourced, non-impacted "like" material.

The Stratojet 31 State Com #006H Release Site is located on an area characterized by a production pad and final restoration, reclamation and re-vegetation will take place at time of abandonment.

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

Respectfully,

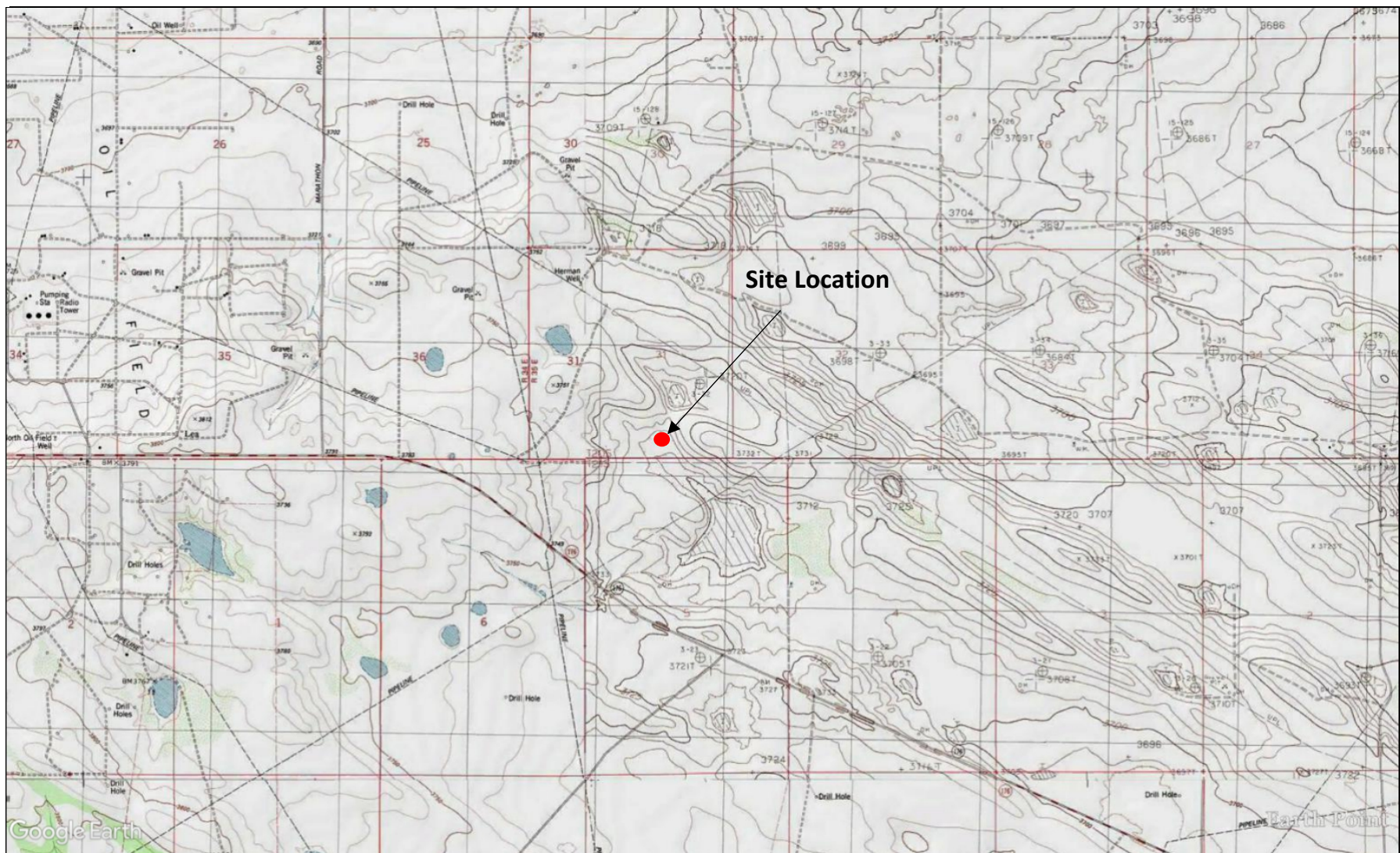


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(432) 238-3003

<b>Attachments:</b>	Attachment #1-	Figure 1 - Topographical Map
	Attachment #2-	Figure 2 - Aerial Map
	Attachment #3A-	Figure 3A - Site & Confirmation Sample Location Map (Initial)
	Attachment #3B-	Figure 3B - Site & Confirmation Sample Location Map (Confirmation)
	Attachment #4-	Depth to Groundwater Information
	Attachment #5-	Field Data
	Attachment #6-	Laboratory Analytical Reports
	Attachment #7-	Soil Profile
	Attachment #8-	General Site Photographs
	Attachment #9-	Release Notification and Corrective Action (FORM C-141)
	Attachment #10-	Email Correspondence of NMOCD District 1 Meeting



**LEGEND:**



### Figure 1

Topographical Map  
Plains Pipeline, LP  
COG: Stratojet 31 State Com #006H  
Lea County, NM

Drafted by: BC | Checked by: JL

Draft: October 03, 2018

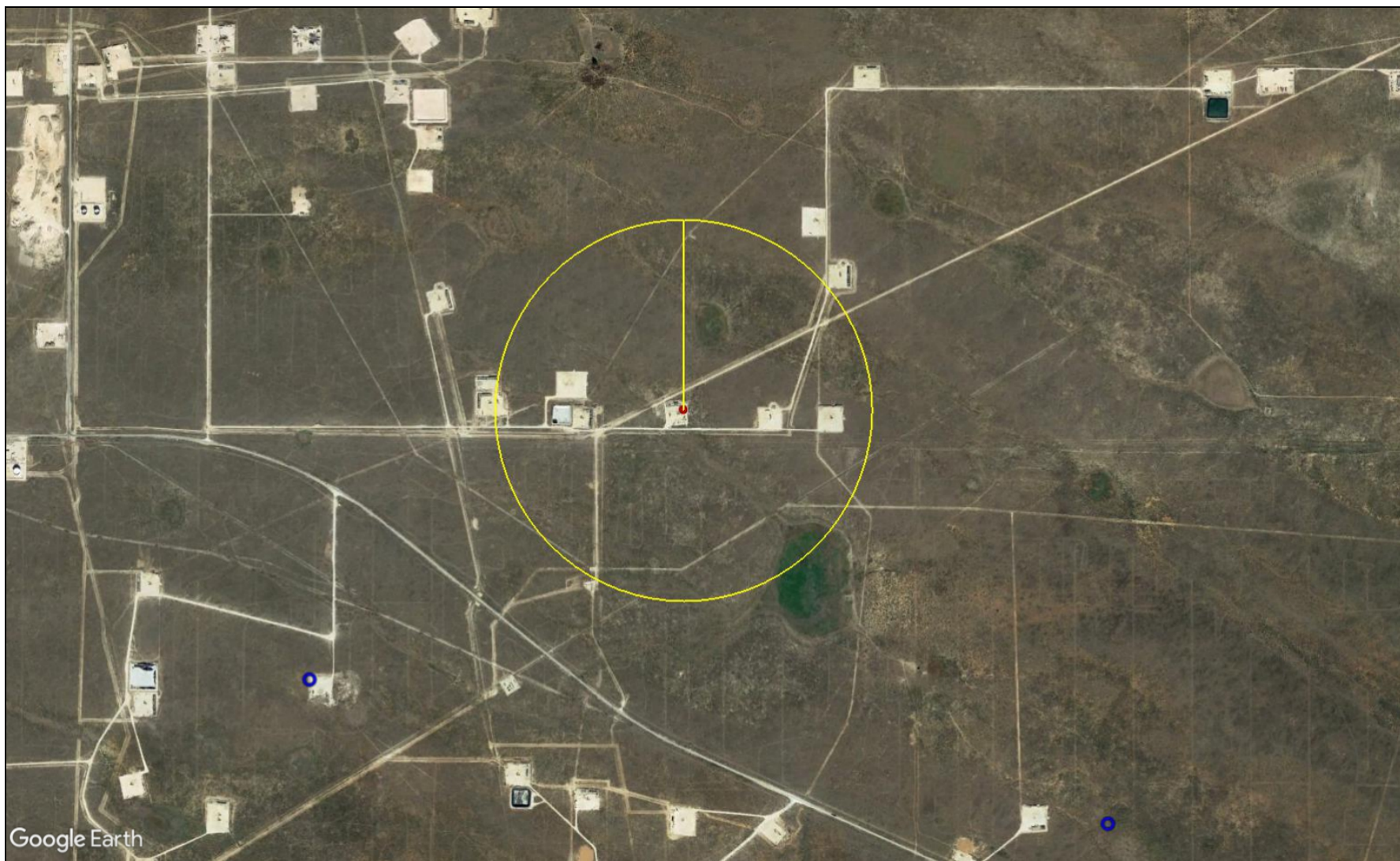
GPS: 32.523582 -103.494174

UL "O", Sec. 31, T20S, R35E

TRC Proj. No: 316817







**LEGEND:**

- Site Location
- Fresh Water Well
- ~ 100-Year Floodplain
- High/Critical Karst
- Non-Industrial Building
- Municipal Well Field
- Subsurface Mine
- 1/2 Mile Radius

**Figure 2**

Aerial Map  
Plains Pipeline, LP  
COG: Stratojet 31 State Com #006H  
Lea County, NM

Drafted by: BC | Checked by: JL

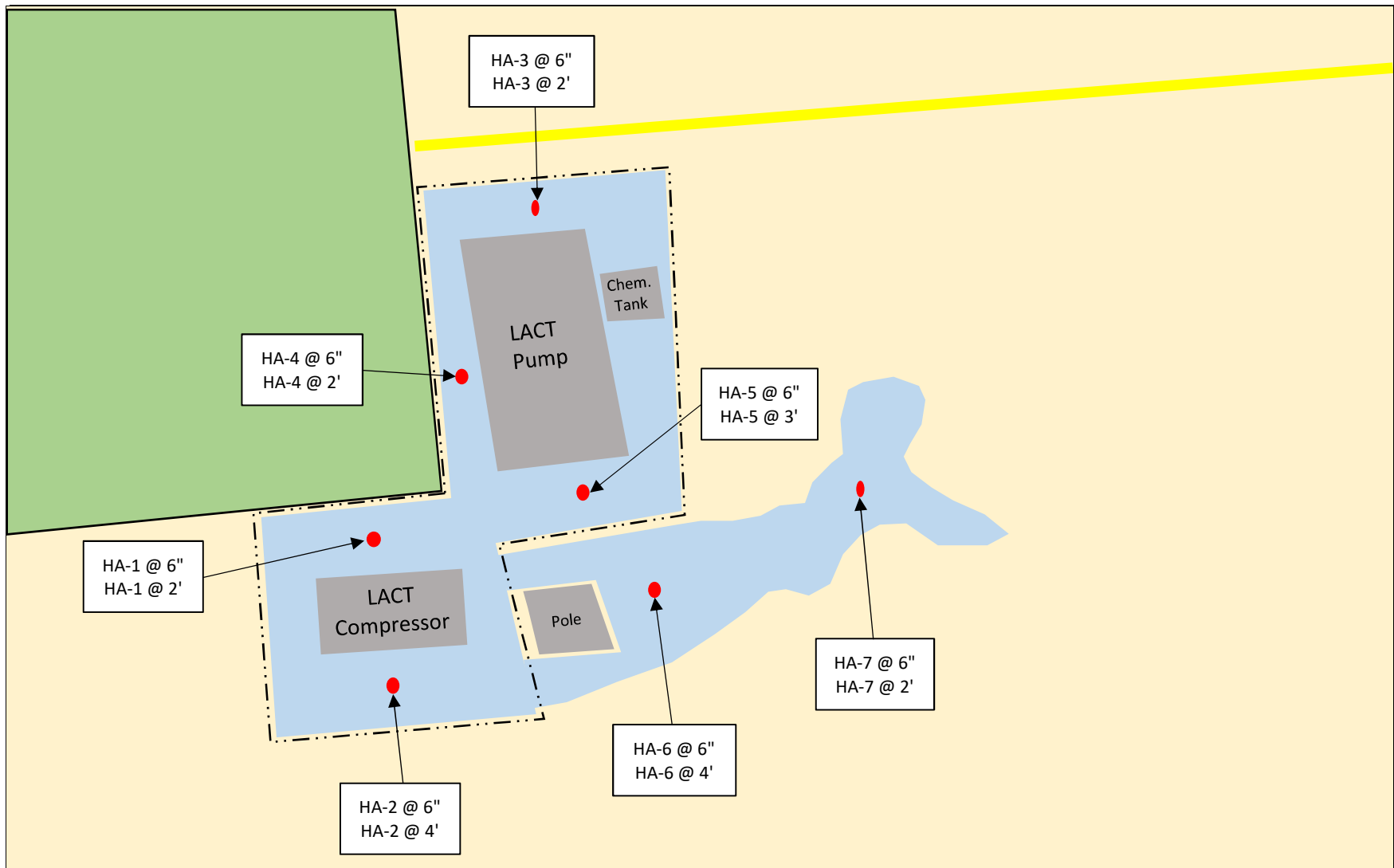
Draft: October 03, 2018

GPS: 32.523582 -103.494174

UL "O", Sec. 31, T20S, R35E

TRC Proj. No: 316817





**LEGEND:**

<span style="display: inline-block; width: 15px; height: 10px; background-color: lightblue; border: 1px solid black;"></span>	Inferred Release Margins
<span style="display: inline-block; width: 10px; height: 10px; background-color: red; border-radius: 50%;"></span>	Sample Point Location
<span style="display: inline-block; width: 20px; border-top: 2px dashed black;"></span>	LACT Facility
<span style="display: inline-block; width: 20px; height: 10px; background-color: gray; border: 1px solid black;"></span>	LACT Equipment
<span style="display: inline-block; width: 20px; height: 10px; background-color: green; border: 1px solid black;"></span>	Tank Battery Facility
<span style="display: inline-block; width: 20px; height: 5px; background-color: yellow; border: 1px solid black;"></span>	Surface Pipeline

**Figure 3A**  
**Site & Sample Location Map**  
 (Initial)  
 Plains Pipeline, LP  
 COG: Stratojet 31 State Com #006H  
 Lea County, NM

Drafted by: BC | Checked by: CS

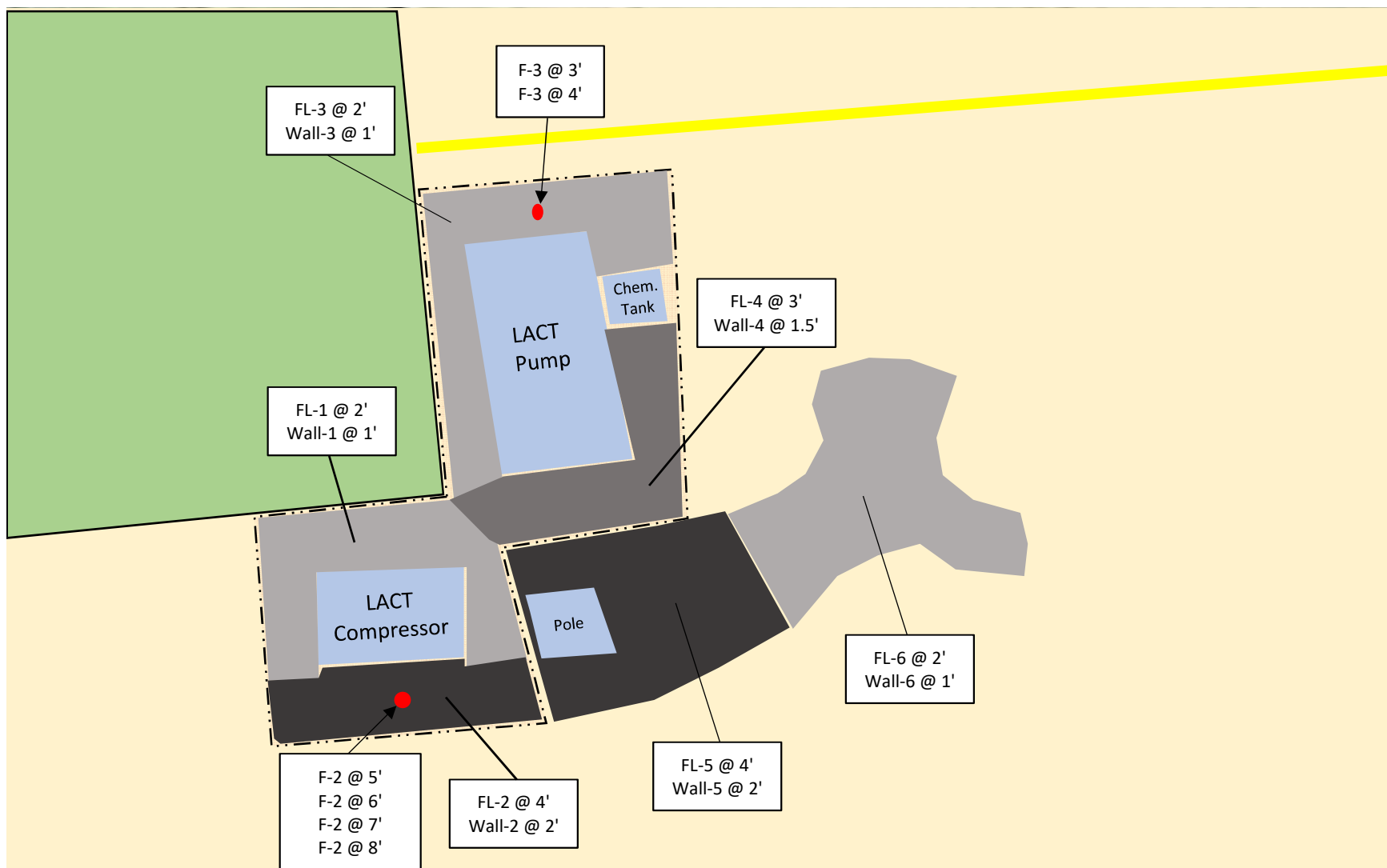
Draft: April 02, 2019

GPS: 32.523582 -103.494174









UL "O", Sec. 31, T20S, R35E

TRC Proj. No: 316817





#### LEGEND:

	Tank Battery Facility		LACT Facility
	Excavated Area @ 2'		LACT Equipment
	Excavated Area @ 3'		Surface Pipeline
	Excavated Area @ 4'		Sample Point

**Figure 3B**  
**Site & Sample Location Map**  
**(Confirmation)**  
 Plains Pipeline, LP  
 COG: Stratojet 31 State Com #006H  
 Lea County, NM

Drafted by: BC | Checked by: CS

Draft: April 02, 2019

GPS: 32.523582 -103.494174

UL "O", Sec. 31, T20S, R35E

TRC Proj. No: 316817





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

**UTMNAD83 Radius Search (in meters):**

Easting (X): 641426

Northing (Y): 3599472.54

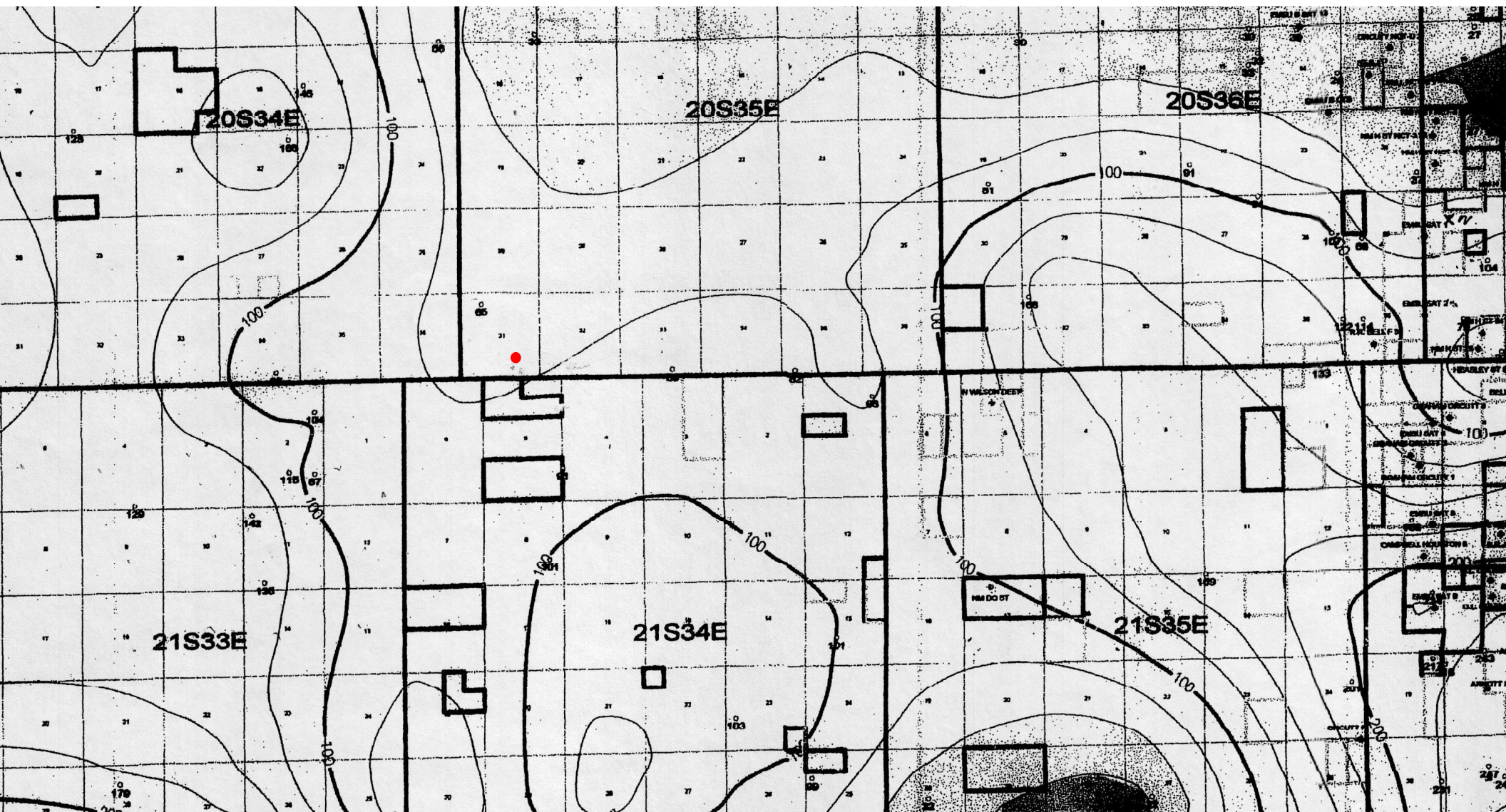
Radius: 1610

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

10/3/18 10:45 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER







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

---

October 16, 2018

JOEL LOWRY

PLAINS ALL AMERICAN PIPELINE

505 NORTH BIG SPRINGS ST STE. 600

MIDLAND, TX 79701

RE: STRATOJET 31 #2H

Enclosed are the results of analyses for samples received by the laboratory on 10/05/18 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 JOEL LOWRY  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701  
 Fax To:

 Received: 10/05/2018  
 Reported: 10/16/2018  
 Project Name: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

 Sampling Date: 10/05/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: HA-1 @ 6" (H802843-01)**

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>19.8</b>	1.00	10/10/2018	ND	2.06	103	2.00	3.30	
<b>Toluene*</b>	<b>171</b>	1.00	10/10/2018	ND	1.89	94.7	2.00	3.11	
<b>Ethylbenzene*</b>	<b>119</b>	1.00	10/10/2018	ND	1.84	92.0	2.00	4.90	
<b>Total Xylenes*</b>	<b>249</b>	3.00	10/10/2018	ND	5.49	91.5	6.00	5.18	
<b>Total BTEX</b>	<b>558</b>	6.00	10/10/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 121 % 69.8-142

TPH 8015M	mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	5850	50.0	10/10/2018	ND	203	102	200	0.0719	
DRO >C10-C28*	27900	50.0	10/10/2018	ND	198	99.1	200	0.625	
EXT DRO >C28-C36	4710	50.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 369 % 41-142

Surrogate: 1-Chlorooctadecane 904 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-1 @ 2' (H802843-02)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/08/2018	ND	2.12	106	2.00	0.321	
Toluene*	0.120	0.050	10/08/2018	ND	1.97	98.7	2.00	0.155	
Ethylbenzene*	0.082	0.050	10/08/2018	ND	1.96	98.2	2.00	0.276	
Total Xylenes*	0.207	0.150	10/08/2018	ND	5.89	98.2	6.00	0.482	
Total BTEX	0.409	0.300	10/08/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2720	16.0	10/10/2018	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	203	102	200	0.0719	
DRO >C10-C28*	150	10.0	10/10/2018	ND	198	99.1	200	0.625	
EXT DRO >C28-C36	55.1	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 90.2 % 41-142

Surrogate: 1-Chlorooctadecane 94.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-2 @ 6" (H802843-03)**

BTEx 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>9.14</b>	2.00	10/08/2018	ND	2.12	106	2.00	0.321	
<b>Toluene*</b>	<b>92.3</b>	2.00	10/08/2018	ND	1.97	98.7	2.00	0.155	
<b>Ethylbenzene*</b>	<b>66.9</b>	2.00	10/08/2018	ND	1.96	98.2	2.00	0.276	
<b>Total Xylenes*</b>	<b>146</b>	6.00	10/08/2018	ND	5.89	98.2	6.00	0.482	
<b>Total BTEX</b>	<b>314</b>	12.0	10/08/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	3950	50.0	10/10/2018	ND	203	102	200	0.0719	
DRO >C10-C28*	21300	50.0	10/10/2018	ND	198	99.1	200	0.625	
EXT DRO >C28-C36	3570	50.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 284 % 41-142

Surrogate: 1-Chlorooctadecane 904 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-2 @ 4' (H802843-04)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.08	1.00	10/08/2018	ND	2.12	106	2.00	0.321	
Toluene*	29.4	1.00	10/08/2018	ND	1.97	98.7	2.00	0.155	
Ethylbenzene*	21.4	1.00	10/08/2018	ND	1.96	98.2	2.00	0.276	
Total Xylenes*	47.3	3.00	10/08/2018	ND	5.89	98.2	6.00	0.482	
Total BTEX	100	6.00	10/08/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	10/10/2018	ND	448	112	400	3.51	
TPH 8015M	mg/kg		Analyzed By: MS						S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>286</b>	10.0	10/08/2018	ND	169	84.7	200	0.970	
<b>DRO &gt;C10-C28*</b>	<b>1760</b>	10.0	10/08/2018	ND	172	85.8	200	2.75	QM-07
<b>EXT DRO &gt;C28-C36</b>	<b>282</b>	10.0	10/08/2018	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 157 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-3 @ 6" (H802843-05)**

BTEx 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>18.1</b>	1.00	10/12/2018	ND	2.12	106	2.00	0.321	
<b>Toluene*</b>	<b>148</b>	1.00	10/12/2018	ND	1.97	98.7	2.00	0.155	
<b>Ethylbenzene*</b>	<b>86.0</b>	1.00	10/12/2018	ND	1.96	98.2	2.00	0.276	
<b>Total Xylenes*</b>	<b>165</b>	3.00	10/12/2018	ND	5.89	98.2	6.00	0.482	
<b>Total BTEX</b>	<b>417</b>	6.00	10/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

TPH 8015M	mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	4390	50.0	10/08/2018	ND	169	84.7	200	0.970	
DRO >C10-C28*	25000	50.0	10/08/2018	ND	172	85.8	200	2.75	
EXT DRO >C28-C36	4790	50.0	10/08/2018	ND					

Surrogate: 1-Chlorooctane 309 % 41-142

Surrogate: 1-Chlorooctadecane 1240 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 JOEL LOWRY  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701  
 Fax To:

 Received: 10/05/2018  
 Reported: 10/16/2018  
 Project Name: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

 Sampling Date: 10/05/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: HA-3 @ 2' (H802843-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/09/2018	ND	1.88	94.1	2.00	0.659	
Toluene*	0.117	0.050	10/09/2018	ND	1.84	92.2	2.00	0.559	
Ethylbenzene*	<0.050	0.050	10/09/2018	ND	1.87	93.7	2.00	0.508	
Total Xylenes*	<0.150	0.150	10/09/2018	ND	5.48	91.3	6.00	0.449	
Total BTEx	<0.300	0.300	10/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1280	16.0	10/10/2018	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/08/2018	ND	169	84.7	200	0.970	
DRO >C10-C28*	26.3	10.0	10/08/2018	ND	172	85.8	200	2.75	
EXT DRO >C28-C36	14.3	10.0	10/08/2018	ND					

Surrogate: 1-Chlorooctane 86.5 % 41-142

Surrogate: 1-Chlorooctadecane 86.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 JOEL LOWRY  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701  
 Fax To:

 Received: 10/05/2018  
 Reported: 10/16/2018  
 Project Name: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

 Sampling Date: 10/05/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: HA-4 @ 6" (H802843-07)**

BTEx 8021B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	2.47	0.200	10/09/2018	ND	1.88	94.1	2.00	0.659		
Toluene*	23.1	0.200	10/09/2018	ND	1.84	92.2	2.00	0.559		
Ethylbenzene*	18.1	0.200	10/09/2018	ND	1.87	93.7	2.00	0.508		
Total Xylenes*	37.7	0.600	10/09/2018	ND	5.48	91.3	6.00	0.449		
Total BTEX	81.4	1.20	10/09/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 150 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	579	10.0	10/08/2018	ND	169	84.7	200	0.970	
DRO >C10-C28*	4010	10.0	10/08/2018	ND	172	85.8	200	2.75	
EXT DRO >C28-C36	616	10.0	10/08/2018	ND					

Surrogate: 1-Chlorooctane 137 % 41-142

Surrogate: 1-Chlorooctadecane 140 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-4 @ 2' (H802843-08)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/09/2018	ND	1.88	94.1	2.00	0.659	
Toluene*	0.133	0.050	10/09/2018	ND	1.84	92.2	2.00	0.559	
Ethylbenzene*	0.094	0.050	10/09/2018	ND	1.87	93.7	2.00	0.508	
Total Xylenes*	0.230	0.150	10/09/2018	ND	5.48	91.3	6.00	0.449	
Total BTX	0.458	0.300	10/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/10/2018	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	<10.0	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 87.3 % 41-142

Surrogate: 1-Chlorooctadecane 79.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-5 @ 6" (H802843-09)**

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.91</b>	0.500	10/10/2018	ND	1.88	94.1	2.00	0.659	
<b>Toluene*</b>	<b>50.8</b>	0.500	10/10/2018	ND	1.84	92.2	2.00	0.559	
<b>Ethylbenzene*</b>	<b>47.7</b>	0.500	10/10/2018	ND	1.87	93.7	2.00	0.508	
<b>Total Xylenes*</b>	<b>103</b>	1.50	10/10/2018	ND	5.48	91.3	6.00	0.449	
<b>Total BTX</b>	<b>206</b>	3.00	10/10/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 149 % 69.8-142

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>1590</b>	50.0	10/10/2018	ND	173	86.3	200	17.6	
<b>DRO &gt;C10-C28*</b>	<b>7260</b>	50.0	10/10/2018	ND	197	98.5	200	11.9	
<b>EXT DRO &gt;C28-C36</b>	<b>978</b>	50.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 201 % 41-142

Surrogate: 1-Chlorooctadecane 186 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-5 @ 3' (H802843-10)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/09/2018	ND	1.88	94.1	2.00	0.659	
Toluene*	0.190	0.050	10/09/2018	ND	1.84	92.2	2.00	0.559	
Ethylbenzene*	0.279	0.050	10/09/2018	ND	1.87	93.7	2.00	0.508	
Total Xylenes*	1.92	0.150	10/09/2018	ND	5.48	91.3	6.00	0.449	
Total BTX	2.39	0.300	10/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/10/2018	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	70.4	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	20.1	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 85.5 % 41-142

Surrogate: 1-Chlorooctadecane 81.6 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-6 @ 6" (H802843-11)**

BTEx 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>3.03</b>	0.200	10/09/2018	ND	1.88	94.1	2.00	0.659	
<b>Toluene*</b>	<b>31.4</b>	0.200	10/09/2018	ND	1.84	92.2	2.00	0.559	
<b>Ethylbenzene*</b>	<b>24.6</b>	0.200	10/09/2018	ND	1.87	93.7	2.00	0.508	
<b>Total Xylenes*</b>	<b>52.7</b>	0.600	10/09/2018	ND	5.48	91.3	6.00	0.449	
<b>Total BTEX</b>	<b>112</b>	1.20	10/09/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 167 % 69.8-142

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>768</b>	50.0	10/10/2018	ND	173	86.3	200	17.6	
<b>DRO &gt;C10-C28*</b>	<b>6460</b>	50.0	10/10/2018	ND	197	98.5	200	11.9	
<b>EXT DRO &gt;C28-C36</b>	<b>995</b>	50.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 154 % 41-142

Surrogate: 1-Chlorooctadecane 164 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-6 @ 4' (H802843-12)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89	
Toluene*	0.283	0.050	10/11/2018	ND	2.06	103	2.00	3.17	
Ethylbenzene*	0.430	0.050	10/11/2018	ND	2.07	103	2.00	2.33	
Total Xylenes*	1.15	0.150	10/11/2018	ND	6.13	102	6.00	2.42	
Total BTEX	1.86	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	10/10/2018	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	53.6	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	650	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	109	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 91.2 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 JOEL LOWRY  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701  
 Fax To:

 Received: 10/05/2018  
 Reported: 10/16/2018  
 Project Name: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

 Sampling Date: 10/05/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: HA-7 @ 6" (H802843-13)**

BTEx 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>2.51</b>	0.200	10/11/2018	ND	2.19	109	2.00	2.89	
<b>Toluene*</b>	<b>32.4</b>	0.200	10/11/2018	ND	2.06	103	2.00	3.17	
<b>Ethylbenzene*</b>	<b>26.1</b>	0.200	10/11/2018	ND	2.07	103	2.00	2.33	
<b>Total Xylenes*</b>	<b>60.5</b>	0.600	10/11/2018	ND	6.13	102	6.00	2.42	
<b>Total BTEX</b>	<b>122</b>	1.20	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 69.8-142

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1050	50.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	6930	50.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	1020	50.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 173 % 41-142

Surrogate: 1-Chlorooctadecane 159 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: HA-7 @ 2' (H802843-14)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89	
Toluene*	0.118	0.050	10/11/2018	ND	2.06	103	2.00	3.17	
Ethylbenzene*	0.109	0.050	10/11/2018	ND	2.07	103	2.00	2.33	
Total Xylenes*	0.320	0.150	10/11/2018	ND	6.13	102	6.00	2.42	
Total BTX	0.546	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	10/10/2018	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	54.2	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	17.4	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 80.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: N (H802843-15)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89		
Toluene*	<0.050	0.050	10/11/2018	ND	2.06	103	2.00	3.17		
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.07	103	2.00	2.33		
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.13	102	6.00	2.42		
Total BTEX	<0.300	0.300	10/11/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	<10.0	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 81.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: E (H802843-16)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89	
Toluene*	<0.050	0.050	10/11/2018	ND	2.06	103	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.07	103	2.00	2.33	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.13	102	6.00	2.42	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 89.6 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	<10.0	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 89.3 % 41-142

Surrogate: 1-Chlorooctadecane 84.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S (H802843-17)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89	
Toluene*	<0.050	0.050	10/11/2018	ND	2.06	103	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.07	103	2.00	2.33	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.13	102	6.00	2.42	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	<10.0	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 86.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
JOEL LOWRY  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701  
Fax To:

Received: 10/05/2018  
Reported: 10/16/2018  
Project Name: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Location: LEA CO NM

Sampling Date: 10/05/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: W (H802843-18)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.19	109	2.00	2.89	
Toluene*	<0.050	0.050	10/11/2018	ND	2.06	103	2.00	3.17	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.07	103	2.00	2.33	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.13	102	6.00	2.42	
Total BTX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 69.8-142

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/10/2018	ND	173	86.3	200	17.6	
DRO >C10-C28*	<10.0	10.0	10/10/2018	ND	197	98.5	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	10/10/2018	ND					

Surrogate: 1-Chlorooctane 84.0 % 41-142

Surrogate: 1-Chlorooctadecane 79.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager







# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: TRC Solutions		P.O. #:		BILL TO		ANALYSIS REQUEST									
Project Manager: Joel Lowry		Company: Plains													
Address: 10 Desta Drive Suite 150E		Attn: Amber Groves													
City: Midland		Address:													
State: TX Zip: 79705															
Phone #: 432-466-4450															
Fax #:															
Project #:		City:													
Project Name: Stratjet 31 # 2H		State:													
Project Location:		Zip:													
Sample Name: Beck		Phone #:													
FOR LAB USE ONLY		Fax #:													
Lab I.D.		Sample I.D.		FOR LAB USE ONLY											
H8028413		H8028413		FOR LAB USE ONLY											
11		HA-6 @ 6"		FOR LAB USE ONLY											
12		HA-6 @ 4"		FOR LAB USE ONLY											
13		HA-7 @ 6"		FOR LAB USE ONLY											
14		HA-7 @ 2'		FOR LAB USE ONLY											
15		N		FOR LAB USE ONLY											
16		5F		FOR LAB USE ONLY											
17		5		FOR LAB USE ONLY											
18		6V		FOR LAB USE ONLY											
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92		6		FOR LAB USE ONLY											



October 18, 2018

JOEL LOWRY

PLAINS ALL AMERICAN PIPELINE

505 NORTH BIG SPRINGS ST STE. 600

MIDLAND, TX 79701

RE: STRATOJET 31 #2H

Enclosed are the results of analyses for samples received by the laboratory on 10/05/18 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701

Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:

Reported:  
18-Oct-18 14:47

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
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WC	H802840-01	Soil	05-Oct-18 09:00	05-Oct-18 14:50
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701

Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:

Reported:  
18-Oct-18 14:47

### WC H802840-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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#### Cardinal Laboratories

#### Inorganic Compounds

<b>Chloride</b>	<b>656</b>		16.0	mg/kg	4	8101010	AC	10-Oct-18	4500-Cl-B	
Ignitability	>140		50.0	°F	1	8082817	AC	10-Oct-18	ASTM D 93-80	
Paint Filter Test	FAILED			N/A	1	8100901	AC	09-Oct-18	9095	A-01
<b>pH*</b>	<b>7.98</b>		0.100	pH Units	1	8100809	AC	08-Oct-18	9045	
Reactive Cyanide	<0.100		0.100	mg/kg	1	8101001	AC	11-Oct-18	9010	
<b>Reactive Sulfide</b>	<b>0.0400</b>		0.0100	mg/kg	1	8101001	AC	11-Oct-18	9030	QR-03

#### Radionuclides

#### SUB-RS

<b>Radium-226</b>	<b>0.44 ± 0.02</b>			pCi/gram	1	8061301	CK	15-Oct-18	GammaRay HPGE	
<b>Radium-228</b>	<b>0.20 ± 0.01</b>			pCi/gram	1	8061301	CK	15-Oct-18	GammaRay HPGE	
<b>Total Radium</b>	<b>0.64 ± 0.02</b>			pCi/gram	1	8061301	CK	15-Oct-18	GammaRay HPGE	

#### TCLP Volatile Organic Compounds by GCMS

<b>Benzene*</b>	<b>0.0557</b>		0.0500	mg/L	100	8100905	ms	09-Oct-18	1311/8260B	
Surrogate: Dibromofluoromethane			100 %	92.9-119		8100905	ms	09-Oct-18	1311/8260B	
Surrogate: Toluene-d8			102 %	86-108		8100905	ms	09-Oct-18	1311/8260B	
Surrogate: 4-Bromofluorobenzene			103 %	81.7-121		8100905	ms	09-Oct-18	1311/8260B	

#### Green Analytical Laboratories

#### TCLP Metals by ICP (1311)

Arsenic	<0.500		0.500	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	
<b>Barium</b>	<b>1.22</b>		0.250	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	
Cadmium	<0.250		0.250	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701

 Project: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Manager: JOEL LOWRY  
 Fax To:

 Reported:  
 18-Oct-18 14:47

**WC**  
**H802840-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Green Analytical Laboratories**
**TCLP Metals by ICP (1311)**

Chromium	<0.250		0.250	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	
Lead	<0.500		0.500	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	
Selenium	<0.500		0.500	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	
Silver	<0.250		0.250	mg/L	5	B810120	AES	15-Oct-18	EPA200.7/13 11	

**TCLP Mercury by CVAA**

Mercury	<0.0002		0.0002	mg/L	1	B810122	AES	15-Oct-18	EPA245.1	
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701

Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:

Reported:  
18-Oct-18 14:47

### Inorganic Compounds - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 8082817 - General Prep - Wet Chem

##### LCS (8082817-BS1)

Prepared & Analyzed: 28-Aug-18

Ignitability	80.0		°F	80.0		100	97.5-105			
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##### Duplicate (8082817-DUP1)

Source: H802400-01

Prepared & Analyzed: 29-Aug-18

Ignitability	>140	50.0	°F		ND				20	
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#### Batch 8100809 - General Prep - Wet Chem

##### LCS (8100809-BS1)

Prepared & Analyzed: 08-Oct-18

pH	7.08		pH Units	7.00		101	90-110			
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##### Duplicate (8100809-DUP1)

Source: H802840-01

Prepared & Analyzed: 08-Oct-18

pH	8.12	0.100	pH Units		7.98			1.74	20	
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#### Batch 8101001 - General Prep - Wet Chem

##### Blank (8101001-BLK1)

Prepared & Analyzed: 11-Oct-18

Reactive Cyanide	ND	0.100	mg/kg							
Reactive Sulfide	ND	0.0100	mg/kg							

##### Duplicate (8101001-DUP1)

Source: H802840-01

Prepared & Analyzed: 11-Oct-18

Reactive Cyanide	ND	0.100	mg/kg		ND				20	
Reactive Sulfide	0.0700	0.0100	mg/kg		0.0400			54.5	20	QR-03

#### Batch 8101010 - General Prep - Wet Chem

##### Blank (8101010-BLK1)

Prepared & Analyzed: 10-Oct-18

Chloride	ND	16.0	mg/kg							
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 PLAINS ALL AMERICAN PIPELINE  
 505 NORTH BIG SPRINGS ST STE. 600  
 MIDLAND TX, 79701

 Project: STRATOJET 31 #2H  
 Project Number: NONE GIVEN  
 Project Manager: JOEL LOWRY  
 Fax To:

 Reported:  
 18-Oct-18 14:47

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8101010 - General Prep - Wet Chem**
**LCS (8101010-BS1)**

Prepared &amp; Analyzed: 10-Oct-18

Chloride	448	16.0	mg/kg	400	112	80-120
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**LCS Dup (8101010-BSD1)**

Prepared &amp; Analyzed: 10-Oct-18

Chloride	464	16.0	mg/kg	400	116	80-120	3.51	20
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701

Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:

Reported:  
18-Oct-18 14:47

### TCLP Volatile Organic Compounds by GCMS - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 8100905 - Volatiles

##### Blank (8100905-BLK1)

Prepared & Analyzed: 09-Oct-18

Benzene	ND	0.000500	mg/L							
Surrogate: Dibromofluoromethane	0.00972		mg/L	0.0100		97.2	92.9-119			
Surrogate: Toluene-d8	0.00994		mg/L	0.0100		99.4	86-108			
Surrogate: 4-Bromofluorobenzene	0.00984		mg/L	0.0100		98.4	81.7-121			

##### LCS (8100905-BS1)

Prepared & Analyzed: 09-Oct-18

Benzene	0.0194	0.000500	mg/L	0.0200		97.2	80.5-129			
Surrogate: Dibromofluoromethane	0.00994		mg/L	0.0100		99.4	92.9-119			
Surrogate: Toluene-d8	0.00993		mg/L	0.0100		99.3	86-108			
Surrogate: 4-Bromofluorobenzene	0.0103		mg/L	0.0100		103	81.7-121			

##### LCS Dup (8100905-BSD1)

Prepared & Analyzed: 09-Oct-18

Benzene	0.0198	0.000500	mg/L	0.0200		99.2	80.5-129	1.99	6.66	
Surrogate: Dibromofluoromethane	0.0102		mg/L	0.0100		102	92.9-119			
Surrogate: Toluene-d8	0.0100		mg/L	0.0100		100	86-108			
Surrogate: 4-Bromofluorobenzene	0.0101		mg/L	0.0100		101	81.7-121			

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701

Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:

Reported:  
18-Oct-18 14:47

### TCLP Metals by ICP (1311) - Quality Control

### Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B810120 - EPA 1311

##### Blank (B810120-BLK1)

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Arsenic	ND	0.500	mg/L
Selenium	ND	0.500	mg/L
Silver	ND	0.250	mg/L
Barium	ND	0.250	mg/L
Chromium	ND	0.250	mg/L
Lead	ND	0.500	mg/L
Cadmium	ND	0.250	mg/L

##### LCS (B810120-BS1)

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Lead	10.2	0.500	mg/L	10.0	102	85-115
Chromium	10.3	0.250	mg/L	10.0	103	85-115
Silver	0.553	0.250	mg/L	0.500	111	85-115
Cadmium	10.2	0.250	mg/L	10.0	102	85-115
Selenium	40.4	0.500	mg/L	40.0	101	85-115
Barium	10.2	0.250	mg/L	10.0	102	85-115
Arsenic	21.4	0.500	mg/L	20.0	107	85-115

##### LCS Dup (B810120-BSD1)

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Arsenic	21.5	0.500	mg/L	20.0	108	85-115	0.346	20
Selenium	40.7	0.500	mg/L	40.0	102	85-115	0.783	20
Barium	10.3	0.250	mg/L	10.0	103	85-115	1.02	20
Cadmium	10.2	0.250	mg/L	10.0	102	85-115	0.896	20
Chromium	10.5	0.250	mg/L	10.0	105	85-115	1.13	20
Lead	10.3	0.500	mg/L	10.0	103	85-115	0.836	20
Silver	0.555	0.250	mg/L	0.500	111	85-115	0.453	20

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**PLAINS ALL AMERICAN PIPELINE  
505 NORTH BIG SPRINGS ST STE. 600  
MIDLAND TX, 79701Project: STRATOJET 31 #2H  
Project Number: NONE GIVEN  
Project Manager: JOEL LOWRY  
Fax To:Reported:  
18-Oct-18 14:47**TCLP Mercury by CVAA - Quality Control**  
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B810122 - EPA 245.1/7470****Blank (B810122-BLK1)**

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Mercury	ND	0.0002	mg/L
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**LCS (B810122-BS1)**

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Mercury	0.0051	0.0002	mg/L	0.00500	102	85-115
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**LCS Dup (B810122-BSD1)**

Prepared: 12-Oct-18 Analyzed: 15-Oct-18

Mercury	0.0053	0.0002	mg/L	0.00500	105	85-115	2.99	20
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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

Z-01d	FAILED
Z-01c	0.64 ± 0.02
Z-01b	0.44 ± 0.02
Z-01a	0.20 ± 0.01
Z-01	>140
SUB-RS	Analysis subcontracted to Radiation Safety Engineering, Inc.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
A-01	Sample is dry soil with no visible liquid.
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

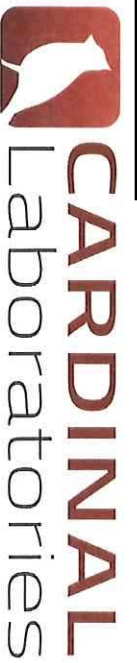
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: TRC Solutions

Project Manager: Joel Lowry

Address: 10 Desta Drive Suite 150E

City: Midland State: TX Zip: 79705

Phone #: 432-466-4450 Fax #:

Project #:

Project Name: Staloyet 31 #2H

Project Location:

Sampler Name: *Wally Kyle Schaidt*

FOR LAB USE ONLY

Lab I.D. Sample I.D.

*A802840*

*WC*

(G)RAB OR (C)OMP.

*3*

GROUNDWATER

WASTEWATER

☒ SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

☒ ICE / COOL

OTHER :

DATE

*10-5-18*

TIME

*4:00 PM*

*RCI*

*X*

*TCLIP Benzene*

*X*

*TCLIP Metals*

*X*

*Norm*

*X*

*CI-*

*X*

*Paint Filter*

*X*

**BILL TO**

**ANALYSIS REQUEST**

P.O. #:

Company: *Plains*

Attn: *Arber Groves*

Address:

City:

State: Zip:

Phone #:

Fax #:

PRESERV. SAMPLING

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Relinquished By:

Date: *10-5-18*

Received By:

Relinquished By:

Date: *10-5-18*

Received By:

Time: *4:00*

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

*1.6'*

*#47*

Sample Condition  
Cool ☐ Intact ☐  
Yes ☐ No ☐

CHECKED BY:  
(Initials)  
*go.*

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

REMARKS:

*Joel@trcsolutions.com*  
*220ndor@trcsolutions.com*  
*6ccop@trcsolutions.com*



November 13, 2018

ZACH CONDER

TRC

10 DESTA DR. SUITE 150 E

MIDLAND, TX 79705

RE: STRATOJET 31 STATE COM 6H

Enclosed are the results of analyses for samples received by the laboratory on 11/02/18 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:Reported:  
13-Nov-18 11:47

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL - 1 @ 2'	H803148-01	Soil	02-Nov-18 09:00	02-Nov-18 15:00
WALL - 1 @ 1'	H803148-02	Soil	02-Nov-18 09:10	02-Nov-18 15:00
FL - 2 @ 4'	H803148-03	Soil	02-Nov-18 09:20	02-Nov-18 15:00
WALL - 2 @ 2'	H803148-04	Soil	02-Nov-18 09:30	02-Nov-18 15:00
FL - 3 @ 2'	H803148-05	Soil	02-Nov-18 09:40	02-Nov-18 15:00
WALL - 3 @ 1'	H803148-06	Soil	02-Nov-18 09:50	02-Nov-18 15:00
FL - 4 @ 3'	H803148-07	Soil	02-Nov-18 10:00	02-Nov-18 15:00
WALL - 4 @ 1.5'	H803148-08	Soil	02-Nov-18 10:10	02-Nov-18 15:00
FL - 5 @ 4'	H803148-09	Soil	02-Nov-18 10:20	02-Nov-18 15:00
WALL - 5 @ 2'	H803148-10	Soil	02-Nov-18 10:30	02-Nov-18 15:00
FL - 6 @ 2'	H803148-11	Soil	02-Nov-18 10:40	02-Nov-18 15:00
WALL - 6 @ 1'	H803148-12	Soil	02-Nov-18 10:50	02-Nov-18 15:00

Project name changed from Cabra Nino to Stratojet 31 State Com 6H as per Brian Cooper via email 11/13/18. This is a revised report reflecting those changes replacing the original report sent on 11/08/18.

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

**FL - 1 @ 2'**  
**H803148-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	64.0		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	19.9		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 82.0 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 84.8 % 37.6-147 8110503 MS 05-Nov-18 8015B

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 1 @ 1'

### H803148-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	400		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	48.2		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 82.4 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 84.4 % 37.6-147 8110503 MS 05-Nov-18 8015B

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

**FL - 2 @ 4'**  
**H803148-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

#### Inorganic Compounds

Chloride	48.0		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	16.5		1.00	mg/kg	1000	8110702	MS	07-Nov-18	8021B	
Toluene*	105		1.00	mg/kg	1000	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	55.1		1.00	mg/kg	1000	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	121		3.00	mg/kg	1000	8110702	MS	07-Nov-18	8021B	
Total BTEX	298		6.00	mg/kg	1000	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 120 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

**S-06**

GRO C6-C10*	1810		50.0	mg/kg	5	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	5940		50.0	mg/kg	5	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	843		50.0	mg/kg	5	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 168 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 272 % 37.6-147 8110503 MS 05-Nov-18 8015B

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 2 @ 2'

### H803148-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	448		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	0.109		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	0.219		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	0.328		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			113 %	69.8-142		8110702	MS	07-Nov-18	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	213		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	46.9		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane			90.5 %	41-142		8110503	MS	05-Nov-18	8015B	
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Surrogate: 1-Chlorooctadecane			101 %	37.6-147		8110503	MS	05-Nov-18	8015B	
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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

**FL - 3 @ 2'**  
**H803148-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

**Inorganic Compounds**

<b>Chloride</b>	<b>80.0</b>		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

**S-04**

Benzene*	<0.100		0.100	mg/kg	100	8110702	MS	08-Nov-18	8021B	
<b>Toluene*</b>	<b>0.588</b>		0.100	mg/kg	100	8110702	MS	08-Nov-18	8021B	
Ethylbenzene*	<0.100		0.100	mg/kg	100	8110702	MS	08-Nov-18	8021B	
<b>Total Xylenes*</b>	<b>14.7</b>		0.300	mg/kg	100	8110702	MS	08-Nov-18	8021B	
<b>Total BTEX</b>	<b>15.3</b>		0.600	mg/kg	100	8110702	MS	08-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			152 %	69.8-142		8110702	MS	08-Nov-18	8021B	
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**Petroleum Hydrocarbons by GC FID**

**S-04**

<b>GRO C6-C10*</b>	<b>312</b>		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
<b>DRO &gt;C10-C28*</b>	<b>2570</b>		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>420</b>		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane			110 %	41-142		8110503	MS	05-Nov-18	8015B	
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Surrogate: 1-Chlorooctadecane			164 %	37.6-147		8110503	MS	05-Nov-18	8015B	
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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 3 @ 1'

### H803148-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	608		16.0	mg/kg	4	8110712	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	308		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	74.9		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 76.8 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 91.7 % 37.6-147 8110503 MS 05-Nov-18 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

**FL - 4 @ 3'**  
**H803148-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**

#### Inorganic Compounds

Chloride	16.0		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	0.107		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	1.15		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	1.25		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 133 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	11.3		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	328		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	54.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 85.9 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 101 % 37.6-147 8110503 MS 05-Nov-18 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 4 @ 1.5'

### H803148-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 83.6 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 84.9 % 37.6-147 8110503 MS 05-Nov-18 8015B

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### FL - 5 @ 4' H803148-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	16.0		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

S-04

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	0.124		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	2.30		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	2.43		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			172 %		69.8-142	8110702	MS	07-Nov-18	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	30.7		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	519		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	72.9		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane			89.5 %		41-142	8110503	MS	05-Nov-18	8015B	
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Surrogate: 1-Chlorooctadecane			105 %		37.6-147	8110503	MS	05-Nov-18	8015B	
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 5 @ 2' H803148-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	128		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
<b>Total Xylenes*</b>	<b>0.194</b>		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.8-142 8110702 MS 07-Nov-18 8021B

#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	11.7		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
DRO >C10-C28*	299		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	
EXT DRO >C28-C36	49.1		10.0	mg/kg	1	8110503	MS	05-Nov-18	8015B	

Surrogate: 1-Chlorooctane 90.0 % 41-142 8110503 MS 05-Nov-18 8015B

Surrogate: 1-Chlorooctadecane 102 % 37.6-147 8110503 MS 05-Nov-18 8015B

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### FL - 6 @ 2' H803148-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			103 %	69.8-142		8110702	MS	07-Nov-18	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	
DRO >C10-C28*	24.7		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	

Surrogate: 1-Chlorooctane			85.0 %	41-142		8110607	MS	06-Nov-18	8015B	
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Surrogate: 1-Chlorooctadecane			86.7 %	37.6-147		8110607	MS	06-Nov-18	8015B	
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### WALL - 6 @ 1'

### H803148-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	8110512	AC	07-Nov-18	4500-Cl-B	
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#### Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8110702	MS	07-Nov-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8110702	MS	07-Nov-18	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	69.8-142		8110702	MS	07-Nov-18	8021B	
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#### Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	
DRO >C10-C28*	15.6		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8110607	MS	06-Nov-18	8015B	

Surrogate: 1-Chlorooctane			92.6 %	41-142		8110607	MS	06-Nov-18	8015B	
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Surrogate: 1-Chlorooctadecane			91.8 %	37.6-147		8110607	MS	06-Nov-18	8015B	
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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### Inorganic Compounds - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 8110512 - General Prep - Wet Chem

##### Blank (8110512-BLK1)

Prepared &amp; Analyzed: 05-Nov-18

Chloride ND 16.0 mg/kg

##### LCS (8110512-BS1)

Prepared &amp; Analyzed: 05-Nov-18

Chloride 432 16.0 mg/kg 400 108 80-120

##### LCS Dup (8110512-BSD1)

Prepared &amp; Analyzed: 05-Nov-18

Chloride 448 16.0 mg/kg 400 112 80-120 3.64 20

#### Batch 8110712 - General Prep - Wet Chem

##### Blank (8110712-BLK1)

Prepared &amp; Analyzed: 07-Nov-18

Chloride ND 16.0 mg/kg

##### LCS (8110712-BS1)

Prepared &amp; Analyzed: 07-Nov-18

Chloride 400 16.0 mg/kg 400 100 80-120

##### LCS Dup (8110712-BSD1)

Prepared &amp; Analyzed: 07-Nov-18

Chloride 416 16.0 mg/kg 400 104 80-120 3.92 20

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### Volatile Organic Compounds by EPA Method 8021 - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 8110702 - Volatiles

##### Blank (8110702-BLK1)

Prepared &amp; Analyzed: 07-Nov-18

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	69.8-142			

##### LCS (8110702-BS1)

Prepared &amp; Analyzed: 07-Nov-18

Benzene	1.81	0.050	mg/kg	2.00		90.4	74.5-124			
Toluene	1.87	0.050	mg/kg	2.00		93.5	78.8-122			
Ethylbenzene	1.84	0.050	mg/kg	2.00		92.0	78.6-122			
Total Xylenes	5.46	0.150	mg/kg	6.00		90.9	79.7-123			
Surrogate: 4-Bromofluorobenzene (PID)	0.105		mg/kg	0.100		105	69.8-142			

##### LCS Dup (8110702-BSD1)

Prepared &amp; Analyzed: 07-Nov-18

Benzene	1.85	0.050	mg/kg	2.00		92.3	74.5-124	2.06	15.2	
Toluene	1.85	0.050	mg/kg	2.00		92.4	78.8-122	1.18	15.1	
Ethylbenzene	1.81	0.050	mg/kg	2.00		90.4	78.6-122	1.73	15.4	
Total Xylenes	5.40	0.150	mg/kg	6.00		89.9	79.7-123	1.12	15.2	
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	69.8-142			

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

### Petroleum Hydrocarbons by GC FID - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 8110503 - General Prep - Organics

##### Blank (8110503-BLK1)

Prepared &amp; Analyzed: 05-Nov-18

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	44.6		mg/kg	50.0		89.3	41-142		
Surrogate: 1-Chlorooctadecane	42.3		mg/kg	50.0		84.5	37.6-147		

##### LCS (8110503-BS1)

Prepared &amp; Analyzed: 05-Nov-18

GRO C6-C10	184	10.0	mg/kg	200		92.2	76.5-133		
DRO >C10-C28	208	10.0	mg/kg	200		104	72.9-138		
Total TPH C6-C28	393	10.0	mg/kg	400		98.2	78-132		
Surrogate: 1-Chlorooctane	45.7		mg/kg	50.0		91.3	41-142		
Surrogate: 1-Chlorooctadecane	44.7		mg/kg	50.0		89.3	37.6-147		

##### LCS Dup (8110503-BSD1)

Prepared &amp; Analyzed: 05-Nov-18

GRO C6-C10	190	10.0	mg/kg	200		94.9	76.5-133	2.91	20.6
DRO >C10-C28	212	10.0	mg/kg	200		106	72.9-138	1.90	20.6
Total TPH C6-C28	402	10.0	mg/kg	400		101	78-132	2.37	18
Surrogate: 1-Chlorooctane	46.7		mg/kg	50.0		93.3	41-142		
Surrogate: 1-Chlorooctadecane	45.5		mg/kg	50.0		91.0	37.6-147		

#### Batch 8110607 - General Prep - Organics

##### Blank (8110607-BLK1)

Prepared &amp; Analyzed: 06-Nov-18

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	47.7		mg/kg	50.0		95.5	41-142		
Surrogate: 1-Chlorooctadecane	46.3		mg/kg	50.0		92.6	37.6-147		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TRC  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705

Project: STRATOJET 31 STATE COM 6H  
Project Number: NONE GIVEN  
Project Manager: ZACH CONDER  
Fax To:

Reported:  
13-Nov-18 11:47

**Petroleum Hydrocarbons by GC FID - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110607 - General Prep - Organics**
**LCS (8110607-BS1)**

Prepared &amp; Analyzed: 06-Nov-18

GRO C6-C10	188	10.0	mg/kg	200		94.2	76.5-133		
DRO >C10-C28	207	10.0	mg/kg	200		103	72.9-138		
Total TPH C6-C28	395	10.0	mg/kg	400		98.8	78-132		
Surrogate: 1-Chlorooctane	46.7		mg/kg	50.0		93.3	41-142		
Surrogate: 1-Chlorooctadecane	46.5		mg/kg	50.0		93.0	37.6-147		

**LCS Dup (8110607-BSD1)**

Prepared &amp; Analyzed: 06-Nov-18

GRO C6-C10	194	10.0	mg/kg	200		96.8	76.5-133	2.63	20.6
DRO >C10-C28	212	10.0	mg/kg	200		106	72.9-138	2.70	20.6
Total TPH C6-C28	406	10.0	mg/kg	400		101	78-132	2.66	18
Surrogate: 1-Chlorooctane	47.3		mg/kg	50.0		94.7	41-142		
Surrogate: 1-Chlorooctadecane	47.3		mg/kg	50.0		94.6	37.6-147		

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Page 20 of 21

### ANALYSIS REQUEST

### BILL TO

P.O. #:

Company: Petkins

Address: Amelgroves

City:

State:

Zip:

Phone #:

Fax #:

Company Name: TRC Solutions

Project Manager: ZACH CONDER

Address: 10 Desta Drive Suite 150E

City: Midland State: TX Zip: 79705

Phone #: 806-784-5943

Project #:

Project Name:

Project Location:

Sample Name:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H803148

FL-1 @ 2'

FL-2 @ 4'

FL-3 @ 2'

FL-4 @ 3'

FL-5 @ 4'

FL-6 @ 1 1/2'

FL-7 @ 2'

FL-8 @ 2'

FL-9 @ 2'

FL-10 @ 2'

FL-11 @ 2'

FL-12 @ 2'

FL-13 @ 2'

FL-14 @ 2'

FL-15 @ 2'

FL-16 @ 2'

FL-17 @ 2'

FL-18 @ 2'

FL-19 @ 2'

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FL-212 @ 2'

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FL-217 @ 2'

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FL-220 @ 2'

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FL-222 @ 2'

FL-223 @ 2'

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FL-226 @ 2'

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FL-230 @ 2'

FL-231 @ 2'

FL-232 @ 2'

FL-233 @ 2'

FL-234 @ 2'

FL-235 @ 2'

FL-236 @ 2'

FL-237 @ 2'

FL-238 @ 2'

FL-239 @ 2'

FL-240 @ 2'

FL-241 @ 2'





20F2

Page 21 of 21



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

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November 28, 2018

ZACH CONDER

TRC

10 DESTA DR. SUITE 150 E

MIDLAND, TX 79705

RE: STRATOJET 31 STATE COM #006H

Enclosed are the results of analyses for samples received by the laboratory on 11/15/18 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received:	11/15/2018	Sampling Date:	11/15/2018
Reported:	11/28/2018	Sampling Type:	Soil
Project Name:	STRATOJET 31 STATE COM #006H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS-LEA COUNTY, NM		

**Sample ID: F- 2 @ 5' (H803327-01)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>66.1</b>	5.00	11/20/2018	ND	1.82	91.1	2.00	1.63	QM-07
<b>Toluene*</b>	<b>329</b>	5.00	11/20/2018	ND	1.80	90.2	2.00	1.24	QM-07
<b>Ethylbenzene*</b>	<b>155</b>	5.00	11/20/2018	ND	1.81	90.6	2.00	0.430	QM-07
<b>Total Xylenes*</b>	<b>287</b>	15.0	11/20/2018	ND	5.45	90.8	6.00	0.780	QM-07
<b>Total BTEX</b>	<b>836</b>	30.0	11/20/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	11/16/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>4850</b>	50.0	11/16/2018	ND	225	112	200	13.4		
<b>DRO &gt;C10-C28*</b>	<b>10300</b>	50.0	11/16/2018	ND	239	119	200	12.0		
<b>EXT DRO &gt;C28-C36</b>	<b>1450</b>	50.0	11/16/2018	ND						

Surrogate: 1-Chlorooctane 308 % 41-142

Surrogate: 1-Chlorooctadecane 191 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received: 11/15/2018  
Reported: 11/28/2018  
Project Name: STRATOJET 31 STATE COM #006H  
Project Number: NONE GIVEN  
Project Location: PLAINS-LEA COUNTY, NM

Sampling Date: 11/15/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: F- 2 @ 6' (H803327-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	52.9	5.00	11/20/2018	ND	1.82	91.1	2.00	1.63	
Toluene*	242	5.00	11/20/2018	ND	1.80	90.2	2.00	1.24	
Ethylbenzene*	86.2	5.00	11/20/2018	ND	1.81	90.6	2.00	0.430	
Total Xylenes*	231	15.0	11/20/2018	ND	5.45	90.8	6.00	0.780	
Total BTEX	613	30.0	11/20/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/16/2018	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
				S-06					

Surrogate: 1-Chlorooctane		322 %	41-142							
Surrogate: 1-Chlorooctadecane		456 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received:	11/15/2018	Sampling Date:	11/15/2018
Reported:	11/28/2018	Sampling Type:	Soil
Project Name:	STRATOJET 31 STATE COM #006H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS-LEA COUNTY, NM		

**Sample ID: F- 2 @ 7' (H803327-03)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	66.6	1.00	11/26/2018	ND	2.01	100	2.00	2.22	
Toluene*	310	1.00	11/26/2018	ND	1.95	97.6	2.00	2.47	
Ethylbenzene*	92.9	1.00	11/26/2018	ND	1.89	94.3	2.00	3.14	
Total Xylenes*	258	3.00	11/26/2018	ND	5.68	94.7	6.00	3.48	
Total BTEX	727	6.00	11/26/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/28/2018	ND	400	100	400	0.00		

TPH 8015M	mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	4400	50.0	11/26/2018	ND	217	109	200	0.306	
DRO >C10-C28*	9270	50.0	11/26/2018	ND	223	112	200	1.28	
EXT DRO >C28-C36	1610	50.0	11/26/2018	ND					

Surrogate: 1-Chlorooctane 220 % 41-142

Surrogate: 1-Chlorooctadecane 352 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received:	11/15/2018	Sampling Date:	11/15/2018
Reported:	11/28/2018	Sampling Type:	Soil
Project Name:	STRATOJET 31 STATE COM #006H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS-LEA COUNTY, NM		

**Sample ID: F- 2 @ 8' (H803327-04)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	25.1	1.00	11/26/2018	ND	2.01	100	2.00	2.22	
Toluene*	160	1.00	11/26/2018	ND	1.95	97.6	2.00	2.47	
Ethylbenzene*	68.9	1.00	11/26/2018	ND	1.89	94.3	2.00	3.14	
Total Xylenes*	141	3.00	11/26/2018	ND	5.68	94.7	6.00	3.48	
Total BTX	395	6.00	11/26/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/28/2018	ND	400	100	400	0.00	

TPH 8015M	mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	2900	50.0	11/26/2018	ND	217	109	200	0.306	
DRO >C10-C28*	6260	50.0	11/26/2018	ND	223	112	200	1.28	
EXT DRO >C28-C36	1040	50.0	11/26/2018	ND					

Surrogate: 1-Chlorooctane 189 % 41-142

Surrogate: 1-Chlorooctadecane 300 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received: 11/15/2018  
Reported: 11/28/2018  
Project Name: STRATOJET 31 STATE COM #006H  
Project Number: NONE GIVEN  
Project Location: PLAINS-LEA COUNTY, NM

Sampling Date: 11/15/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: F- 3 @ 3' (H803327-05)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.638</b>	0.100	11/20/2018	ND	1.82	91.1	2.00	1.63	
<b>Toluene*</b>	<b>5.31</b>	0.100	11/20/2018	ND	1.80	90.2	2.00	1.24	
<b>Ethylbenzene*</b>	<b>2.09</b>	0.100	11/20/2018	ND	1.81	90.6	2.00	0.430	
<b>Total Xylenes*</b>	<b>11.6</b>	0.300	11/20/2018	ND	5.45	90.8	6.00	0.780	
<b>Total BTX</b>	<b>19.6</b>	0.600	11/20/2018	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	11/16/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>101</b>	10.0	11/16/2018	ND	225	112	200	13.4	
<b>DRO &gt;C10-C28*</b>	<b>583</b>	10.0	11/16/2018	ND	239	119	200	12.0	
<b>EXT DRO &gt;C28-C36</b>	<b>97.4</b>	10.0	11/16/2018	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TRC  
ZACH CONDER  
10 DESTA DR. SUITE 150 E  
MIDLAND TX, 79705  
Fax To:

Received:	11/15/2018	Sampling Date:	11/15/2018
Reported:	11/28/2018	Sampling Type:	Soil
Project Name:	STRATOJET 31 STATE COM #006H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS-LEA COUNTY, NM		

**Sample ID: F- 3 @ 4' (H803327-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2018	ND	1.82	91.1	2.00	1.63	
<b>Toluene*</b>	<b>0.208</b>	0.050	11/20/2018	ND	1.80	90.2	2.00	1.24	
<b>Ethylbenzene*</b>	<b>0.056</b>	0.050	11/20/2018	ND	1.81	90.6	2.00	0.430	
<b>Total Xylenes*</b>	<b>0.334</b>	0.150	11/20/2018	ND	5.45	90.8	6.00	0.780	
<b>Total BTEX</b>	<b>0.598</b>	0.300	11/20/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	11/16/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2018	ND	225	112	200	13.4	
<b>DRO &gt;C10-C28*</b>	<b>74.7</b>	10.0	11/16/2018	ND	239	119	200	12.0	
<b>EXT DRO &gt;C28-C36</b>	<b>11.8</b>	10.0	11/16/2018	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: TRC Solutions

Project Manager: ~~TRC~~ Zach Conrad

Address: 10 Desta Drive Suite 150E

City: Midland State: TX Zip: 79705

Phone #: 432-~~466-1100~~ 234-3084 Fax #:

Project #: Project Owner: PLAINS

Project Name: STRATONET 315T Com #006H

Project Location: LEA Co, NM

Sampler Name:

FOR LAB USE ONLY

### BILL TO

P.O. #:

Company: PLAINS

Attn: Amber Groves

Address:

City:

State: Zip:

Phone #:

Fax #:

### ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	TPH	BTEX	CL-	HOLD	ANALYSIS REQUEST			
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :							ACID/BASE:	ICE / COOL	OTHER :	PRESERV
H803327	F-205'	G1	1																
	F-204'	G1	1																
	F-207'	G1	1																
	F-208'	G1	1																
	F-303'	G1	1																
	F-304'	G1	1																
	F-305'	G1	1																
	F-306'	G1	1																

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Relinquished By:

Date: 11-15-18

Received By:

Relinquished By: [Signature]

Date: 11-25

Received By: [Signature]

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

0.40 #99

Sample Condition  
Cool ☐ Intact ☐  
Yes ☐ No ☐

CHECKED BY:  
(Initials)

REMARKS:

2 CO INSIDER @ TRC SOLUTIONS.COM  
B COOPER @ TRC SOLUTIONS.COM  
B BARRIF @ TRC SOLUTIONS.COM  
A L GROVES @ PALF.COM

\*Added 11/26/18 by Zach



Site Name:      Stratojet State Com #006H

Date:      11/15/2018

### Soil Profile

<i>Description</i>		<i>ft. bgs</i>
		0
		1
Caliche		2
		3
Brown Sand		4
		5
		6
		7
		8
		9
		10
		11
		12
		13
		14
		15
		16



**Photo 1** - View of affected area prior to remediation activities, facing West.



**Photo 2**- View of affected areaprior to remediation activities, facing West.





**Photo 3** - View of affected area prior to remediation activities, facing Southeast.



**Photo 4** - View of affected area prior to remediation activities, facing North.



**Photo 5** - View of affected area after excavation activities, facing East.



**Photo 6** - View of affected area after excavation activities, facing East.





**Photo 7** - View of affected area after excavation activities, facing North.



**Photo 8** - View of affected area after excavation activities, facing North.





**Photo 9** - View of affected area after backfill activities, facing North.



**Photo 10** - View of affected area after backfill activities, facing North.





**Photo 11** - View of affected area after backfill activities, facing West.



**Photo 12** - View of affected area after backfill activities, facing West.



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

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

Incident ID	nCH1828463241
District RP	1RP-5223
Facility ID	fCH1828462751
Application ID	pCH1828463804

## Release Notification

### Responsible Party

Responsible Party Plains Pipeline, L.P.	OGRID 713291
Contact Name Amber Groves	Contact Telephone 575-200-5517
Contact email algroves@paalp.com	Incident # NCH1828463241 COG STRATOJET 31 STATE COM @ FCH1828462751vvvv
Contact mailing address 1911 Connie Road, Carlsbad NM 88220	

### Location of Release Source

Latitude 32.523582

Longitude -103.494174

(NAD 83 in decimal degrees to 5 decimal places)

Site Name COG Stratojet 31 State Com #006H	Site Type LACT Unit
Date Release Discovered 9/25/2018	API# (if applicable)

Unit Letter	Section	Township	Range	County
O	31	20S	35E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: S&S-Patrick Sims)

State Minerals

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 20 bbls	Volume Recovered (bbls) 15 bbls
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Valve left open by a second party.

State of New Mexico  
Oil Conservation Division

Incident ID	nCH1828463241
District RP	1RP-5223
Facility ID	fCH1828462751
Application ID	pCH1828463804

Was this a major release as defined by 19.15.29.7(A) NMAC?

☐ Yes ☒ No

If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?  
Notification was given to Olivia Yu at NMOCD by phone on 9/26/2018 at 8:01 am.

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Amber Groves

Title: Remediation Coordinator

Signature: Amber Groves

Date: 10/31/2018

email: algroves@paalp.com

Telephone: 575-200-5517

**OCD Only**

**RECEIVED**

Received by: **By CHernandez at 5:19 pm, Oct 11, 2018**

## Amber L Groves

---

**From:** James L Papstein  
**Sent:** Tuesday, October 02, 2018 7:06 AM  
**To:** Amber L Groves; Michael S Hicks  
**Cc:** Camille J Bryant  
**Subject:** RE: COG Stratojet 31 State Com #002H

20 barrels released, 15 barrels recovered for disposal, 5 barrels lost.

Length	Width	Depth		Volume Barrels
15	8	11	0.0154	20.328

James (Jim) Papstein  
Plains All American  
432-209-2770

---

## Cooper, Brian

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**From:** Conder, Zachary  
**Sent:** Wednesday, December 19, 2018 3:28 PM  
**To:** Hernandez, Christina, EMNRD  
**Cc:** Amber L Groves (ALGroves@paalp.com)  
**Subject:** 1RP-5223 & 1RP-5157 -December 12th Meeting Summary

Ms. Hernandez,

To summarize our meeting on December 12, 2018, TRC is requesting the deferral of remediation activities at the Plains Pipeline, LP release site known as the Stratojet 31 State Com #006H. The deferral request is based upon avoiding a major site deconstruction in order to complete delineation and remediation. We discussed the issues with the sites equipment within the current excavation and safety concerns of continuing the excavation beyond the current depth. Ms. Hernandez also said she would speak with Mr. Griswold about deferring delineation at the site on the same basis as the deferral for remediation. We also discussed the lone chloride exceedance at Wall-3 with a concentration of 608 mg/kg and requesting this concentration be allowed as a variance to the closure criteria. In addition, we also discussed the work plan submitted for 1RP-5157, Young Deep Koch Historical. A verbal approval to commence remediation was given after discussing the site.

Respectfully,

**Zachary Conder**  
Operations Manager



2771 State Highway 214, Denver City, TX 79323  
| C: 432 234 5084

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