

State of New Mexico  
Oil Conservation Division

Incident ID	nOY1811336341
District RP	1RP-5024
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Amber Groves Title: Remediation Coordinator  
 Signature: [Signature] Date: 1/21/2020  
 email: algroves@pacrp.com Telephone: 505-200-5517

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Bradford Billings Date: 07/29/2021  
 Printed Name: Bradford Billings Title: Envi.Spec.A





## **REMEDATION SUMMARY AND RISK-BASED SITE CLOSURE REQUEST**

**MOORE SWEET HISTORICAL  
UNIT LETTERS A & H, SECTION 13, TOWNSHIP 11 SOUTH, RANGE 32 EAST, NMPM  
N 33.369369° W 103.66272°  
LEA COUNTY, NEW MEXICO  
1RP-5024  
SRS #: Moore Sweet Historical**

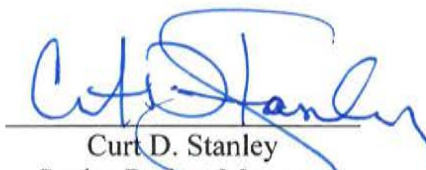
Prepared for:

**Plains Marketing, L.P.**  
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Prepared by:

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January 2020

  
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## 1.0 INTRODUCTION AND BACKGROUND

On behalf of Plains Marketing, L.P. (Plains), TRC Environmental Corporation (TRC) has prepared this *Remediation Summary and Risk-Based Closure Request* for the historical crude oil Release Site known as Moore Sweet Historical (SRS: Moore Sweet Historical). The Release Site is located approximately three (3) miles east of Caprock in Lea County, New Mexico in Unit Letters "A & H", Section 13, Township 11 South, Range 32 East, NMPM. The Release Site GPS coordinates are N 33.369369° W 103.66272°. The Release Site is located on property leased by Plains from The State of New Mexico and administered by the New Mexico State Land Office (NMSLO). A copy of New Mexico Oil Conservation Division (NMOCD) Release Notification and Corrective Action (Form C-141) is provided with this *Remediation Summary and Risk-Based Closure Request*. A topographic location map and aerial map are provided as Figure 1 and Figure 2, respectively. Photographic documentation is provided as Appendix B.

**On April 11, 2018**, evidence of historical hydrocarbon impact was discovered during the decommissioning and reclamation of the former storage and pump station, the date and circumstance of the release are unknown. Following the discovery of the historical impact, an initial Release Notification and Corrective Action (Form C-141) was filed with the NMOCD and NMSLO.

Following the discovery of the historical hydrocarbon impact, numerous test trenches were utilized to delineate the vertical and horizontal extent of the impact. Following the completion of vertical and horizontal delineation activities, an "Initial Investigation Summary and Proposed Remediation Workplan" (Remediation Workplan) was prepared.

**On August 20, 2018**, the Remediation Workplan was submitted, via email to the New Mexico Oil Conservation Division (NMOCD) and the NMSLO. Please reference the "Initial Investigation Summary and Proposed Remediation Workplan" for details. NMOCD and NMSLO email correspondence is provided as Appendix A.

**On September 4, 2018**, representatives of the NMOCD, Plains, and TRC met at the NMOCD District 1 Office in Hobbs, New Mexico. Following discussion of the proposed remediation activities, the NMOCD Representative approved the proposed Remediation Workplan.

**On September 5, 2018**, a representative of the NMSLO concurred, via email with the NMOCD workplan approval.

**On September 6, 2018**, the NMOCD reconsidered and denied the Plains request for the emplacement of a 20-mil polyurethane liner at four (4) feet below ground surface (bgs) in the areas represented by TT-1 and WTT-1. The NMOCD based the liner decision reversal on the reported depth of fifty (50) feet to groundwater. The NMOCD email indicated "Emplacement of a liner with 4 ft. removal will not be appropriate for this location" and further stated "In other words, at least 12 ft. of soil will need to be removed from the areas represented by TT-1 and WTT-1".



**On October 23, 2018**, TRC, on behalf of Plains Marketing, requested a “Alternative Sampling Plan” from the NMOCD. The proposed alternative sampling plan proposed the collection of discrete soil samples, utilizing mechanical equipment from the sidewalls of the excavated area in each cardinal direction and the base of the excavated area for depths greater than eight (8) feet bgs. In areas of the excavation less than eight (8) feet composite soil samples would be collected for each six hundred (600) square feet of surface area.

**On November 4, 2018**, the NMOCD approved the proposed “Alternative Sampling Plan”, on the condition discrete soil samples would be collected in “discolored areas.”

**On September 18, 2019**, TRC, on behalf of Plains prepared a “Variance Request”. In the Variance Request, Plains requested NMOCD and NMSLO approval to install a twenty (20) millimeter (mil) polyurethane liner at approximately fifteen (15) feet bgs. This request was based on the safety concerns, the depth of impact, and the inherent dangers of excavating in hard limestone with a hammer hoe.

**On September 20, 2019**, the NMOCD (Santa Fe Office) approved the installation of the polyurethane liner at approximately fifteen (15) feet bgs, the NMOCD approval was conditional and required all horizontal (sidewall) soil samples exhibit BTEX, TPH and chloride concentrations less than the NMOCD regulatory guidelines. On November 14, 2019, the NMSLO concurred with the NMOCD approval.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) indicated the average depth to groundwater in Section 13, Township 11 South, Range 32 East to be sixty-three (63) feet bgs. There are no surface-water features located within a 1,000-foot radius of the site.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) suggests one (1) water well (NMOSE Well No. L 06273) was installed in 1968, approximately eight hundred fifty (850) feet northwest of the Release Site; the current status of the water well is unknown. A pedestrian survey of the area did not yield any evidence of the water well.

On January 17, 2018, NMOSE Well No. L-6588, formerly located on-site, was plugged by a licensed driller; information for NMOSE Well No. L-6588 was unavailable on the groundwater database maintained by the NMOSE. The plugging record submitted by the driller to the NMOSE indicated the static water level was fifty (50) feet bgs, but the static water level measurement was not witnessed by Plains personnel. Depth to Groundwater information is provided as Appendix C.

Based on the depth to groundwater at the Moore Sweet Historical Release Site, the *NMOCD Closure Criteria for Soils Impacted by a Release* are the most stringent closure criteria listed. The Bureau of Land Management (BLM) publicly available *Karst Potential Map* indicates the Moore Sweet Historical Release Site is located in a “low karst” area. The BLM Karst Potential Map is provided as Figure 3. Based on the NMOCD Closure Criteria for Soils Impacted by a Release, the Closure Criteria for the Moore Sweet Historical Release Site are as follows:

- Benzene - 10 mg/kg



- Benzene, Toluene, ethylbenzene, and total xylenes (BTEX) - 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – 100 mg/kg
- Chloride – 600 mg/kg

## 2.0 SUMMARY OF EXCAVATION ACTIVITIES

**In October 2018**, utilizing a track hoe and hammer hoe when required, excavation activities commenced at the Historical Moore Sweet Release Site, excavated soil was initially stockpiled on-site pending transportation to an NMOCD approved Landfill. An Excavation and Sample Location Map is provided as Figure 4. An Excavation and Sample Location Map with photographic aerial underlay is provided as Figure 5. A Summary of Concentrations of Benzene, BTEX, TPH and Chloride is provided as Table 1 and field notes are provided in Appendix D. Laboratory Analytical Reports are provided as Appendix E. A copy of the NMOCD *Request for Approval to Accept Solid Waste* NMOCD Form C-138 is provided as Appendix F.

**On October 8, 2018**, one (1) soil sample (NTT 1A @ 8') was collected from the north sidewall of the excavation and submitted to the laboratory for total petroleum hydrocarbon (TPH) analysis. The analytical results indicated the soil sample exhibited a total petroleum hydrocarbon concentration of 42.7 mg/kg.

**On November 9, 2018**, two (2) excavation floor soil samples (TT1 @ 14' and STT @ 12') were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated soil samples TT1 @ 14' and STT @ 12' exhibited TPH concentrations of 2,081.4 mg/kg and 2,791.9 mg/kg, respectively. The analytical results of chloride analysis indicated soil samples TT1 @ 14' and STT @ 12' exhibited chloride concentrations of 128 mg/kg and 80.0 mg/kg, respectively. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT1 @ 14' and STT @ 12'.

In addition, twelve (12) sidewall soil samples (ETT Comp 1 @ 5', ETT Comp 2 @ 5', ETT-NW @ 2.5', WTT Comp 2 @ 4', WTT Comp 1 @ 4', WTT-SW @ 2', WTT-WW @ 2', WTT-NW @ 2', STT-EW @ 6', STT-NW @ 6', STT-SW @ 6', and STT-WW @ 6') were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated TPH concentrations ranged from 15.2 mg/kg for soil sample ETT Comp 2 @ 5' to 4,153.8 mg/kg for soil sample STT-WW @ 6'. The analytical results indicated concentrations of chloride were less than the NMOCD regulatory guideline of 600 mg/kg for all soil samples. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples ETT Comp 1 @ 5', ETT-NW @ 2.5', WTT-SW @ 2', WTT-NW @ 2', STT-EW @ 6', STT-NW @ 6', STT-SW @ 6', and STT-WW @ 6'.

**On November 9, 2018**, one (1) excavation floor soil sample (TT2 @ 2') was collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated soil sample TT2 @ 2' exhibited a TPH concentration of 519 mg/kg. The analytical results of chloride analysis indicated soil sample TT2 @ 2' exhibited a chloride concentration of 176 mg/kg. Based on the analytical results, additional excavation was warranted in the area represented by soil sample TT2 @ 2'.



In addition, four (4) sidewall soil samples (TT2-WW @ 1', TT2-NW @ 1', TT2-EW @ 1', and TT2-SW @ 1') were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated TPH concentrations ranged from 89.2 mg/kg for soil sample TT2-SW @ 1' to 396 mg/kg for soil sample TT2-WW @ 1'. The analytical results indicated concentrations of chloride were less than the NMOCD regulatory guideline of 600 mg/kg for all soil samples. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT2-WW @ 1', TT2-NW @ 1', and TT2-EW @ 1'.

**On November 9, 2018**, one (1) composite excavation floor soil sample (TT3 Comp @ 3') was collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated soil sample TT3 Comp @ 3' exhibited a TPH concentration less than the laboratory RL. The analytical results of chloride analysis indicated soil sample TT3 Comp @ 3' exhibited a chloride concentration of 16.0 mg/kg. Based on the analytical results, additional excavation was not warranted in the area represented by soil sample TT3 Comp @ 3'.

In addition, four (4) sidewall soil samples (TT3-NW @ 1.5', TT3-SW @ 1.5', TT3-WW @ 1.5', and TT3-EW @ 1.5') were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated TPH concentrations ranged from less than the laboratory RL for soil samples TT3-SW @ 1.5' and TT3-WW @ 1.5' to 38.0 mg/kg for soil sample TT3-NW @ 1.5'. The analytical results indicated concentrations of chloride were less than the NMOCD regulatory guideline of 600 mg/kg for all soil samples. Based on the analytical results, no additional excavation was warranted the TT 3 area and the excavation was backfilled with non-impacted locally sourced "like" material.

**On November 13, 2018**, one (1) excavation floor soil sample (ETT Comp 3 @ 6') was collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated soil sample ETT Comp 3 @ 6' exhibited a TPH concentration of less than the laboratory RL. The analytical results of chloride analysis indicated soil sample ETT Comp 3 @ 6' exhibited a chloride concentration of 320 mg/kg. Based on the analytical results, no additional excavation was warranted in the area represented by soil sample ETT Comp 3 @ 6'.

In addition, three (3) sidewall soil samples (ETT-SW @ 2.5', ETT-SW-2 @ 6", and ETT-EW @ 2.5') were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results indicated TPH concentrations ranged from less than the laboratory RL for soil sample ETT-EW @ 2.5' to 15.6 mg/kg for soil sample ETT-SW-2 @ 6". The analytical results indicated concentrations of chloride were less than the NMOCD regulatory guideline of 600 mg/kg for all soil samples, with the exception of soil sample ETT-SW-2 @ 6". Based on the analytical results, additional excavation was warranted in the areas represented by soil sample ETT-SW-2 @ 6".

**On December 12-13, 2018**, using a track hoe, an investigation trench (TT-1) was advanced from the floor of the existing excavation at approximately fourteen (14) feet bgs. During the advancement of the investigation trench sixteen (16) soil samples (TT-1 @ 15', TT-1 @ 16', TT-1 @ 17', TT-1 @ 18', TT-1 @ 19', TT-1 @ 20', TT-1 @ 21', TT-1 @ 22', TT-1 @ 23', TT-1 @ 24', TT-1 @ 25', TT-1 @ 26', TT-1 @ 27', TT-1 @ 28', TT-1 @ 29', and TT-1 @ 30') were collected and submitted to the laboratory for BTEX, TPH and chloride analysis. The



analytical results indicated benzene concentrations ranged from less than the laboratory RL for soil samples TT-1 @ 15', TT-1 @ 16', TT-1 @ 17', TT-1 @ 20', TT-1 @ 21', TT-1 @ 22', TT-1 @ 23', TT-1 @ 24', TT-1 @ 25', TT-1 @ 29', and TT-1 @ 30' to 0.113 mg/kg for TT-1 @ 27'. Based on the analytical results, all soil samples exhibited benzene concentrations less than the NMOCD regulatory guideline of 10 mg/kg. The analytical results indicated BTEX concentrations ranged from less than the laboratory RL for soil sample TT-1 @ 25' to 4.6999 mg/kg for TT-1 @ 25'. Based on the analytical results, all soil samples exhibited benzene concentrations less than the NMOCD regulatory guideline of 50 mg/kg. The analytical results indicated TPH concentrations ranged from 92.2 mg/kg for soil sample TT-1 @ 30' to 3,025 mg/kg for TT-1 @ 17'. Based on the analytical results, all soil samples exhibited TPH concentrations greater than the NMOCD regulatory guideline of 100 mg/kg, with the exception of soil sample TT-1 @ 30' (92.2 mg/kg), which provided vertical delineation of impact at the Site. Chloride analysis was conducted on soil samples TT-1 @ 15' through TT-1 @ 20, and based the analytical results, soil samples TT-1 @ 15' through TT-1 @ 20 exhibited chloride concentrations less than the NMOCD regulatory guideline.

**On April 3, 2019**, one (1) excavation sidewall soil sample (ETT-NW-B @ 2.5') was collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL in the submitted soil sample. Based on the analytical results, the soil sample exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentration was 31.0 mg/kg and exhibited TPH less than the NMOCD regulatory guideline. Chloride analysis indicated the soil sample exhibited a chloride concentration of 641 mg/kg. The analytical results indicated the chloride concentration was greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the area represented by soil sample ETT-NW-B @ 2.5'.

**On April 3, 2019**, four (4) excavation floor soil samples (TT2-Comp 1 @ 3', TT2-Comp 2 @ 3', TT2-Comp 3 @ 3', and TT2-Comp 4 @ 3') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL all submitted soil samples. Based on the analytical results, all soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from 40.2 mg/kg for soil sample TT2-Comp 1 @ 3' to 184 mg/kg for TT2-Comp 2 @ 3'. Based on the analytical results, soil samples TT2-Comp 2 @ 3' and TT2-Comp 4 @ 3' exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride analysis indicated soil samples TT2-Comp 1 @ 3', TT2-Comp 2 @ 3', TT2-Comp 3 @ 3', and TT2-Comp 4 @ 3' exhibited chloride concentrations less than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT2-Comp 2 @ 3' and TT2-Comp 4 @ 3'.

**On April 3, 2019**, three (3) excavation sidewall soil samples (TT2-WW @ 1.5', TT2-NW @ 1.5', and TT2-EW @ 1.5',) were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL all submitted soil samples. Based on the analytical results, all soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory



guideline. The analytical results indicated TPH concentrations ranged from 38.5 mg/kg for soil sample TT2-WW @ 1.5' to 106 mg/kg for soil sample TT2-EW @ 1.5'. Based on the analytical results, soil samples TT2-NW @ 1.5' and TT2-EW @ 1.5' exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride analysis indicated all soil samples exhibited chloride concentrations less than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT2-NW @ 1.5' and TT2-EW @ 1.5'.

**On April 4, 2019**, two (2) excavation sidewall soil samples (WTT-NW-B @ 2' and WTT-SW-B @ 2') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL all submitted soil samples. Based on the analytical results, all soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from 76.3 mg/kg for soil sample WTT-SW-B @ 2' to 86.5 mg/kg for soil sample WTT-NW-B @ 2'. Based on the analytical results, soil samples WTT-NW-B @ 2' and WTT-SW-B @ 2' exhibited TPH concentrations less than the NMOCD regulatory guideline. Chloride analysis indicated all soil samples exhibited chloride concentrations less than the NMOCD regulatory guideline. Based on the analytical results, no additional excavation was warranted in the areas represented by soil samples WTT-NW-B @ 2' and WTT-SW-B @ 2'.

**On April 16, 2019**, four (4) excavation sidewall soil samples (STT-EW-B @ 6', STT-NW-B @ 6', STT-SW-B @ 6', and STT-WW-B @ 6') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene concentrations were less than the laboratory RL all submitted soil samples. Based on the analytical results, all soil samples exhibited benzene concentrations less than the NMOCD regulatory guideline. The analytical results indicated BTEX concentrations ranged from 0.3198 mg/kg for soil sample STT-SW-B @ 6' to 32.13 mg/kg for soil sample STT-EW-B @ 6'. Based on the analytical results, all soil samples exhibited BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from 79.58 mg/kg for soil sample SST-SW-B @ 6' to 7,137 mg/kg for soil sample STT-WW-B @ 6'. Based on the analytical results, soil samples STT-EW-B @ 6', STT-NW-B @ 6', and STT-WW-B @ 6' exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride analysis indicated all soil samples exhibited chloride concentrations less than the NMOCD regulatory guideline, with the exception of soil sample STT-EW-B @ 6', which exhibited a chloride concentration of 1,770 mg/kg. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples STT-EW-B @ 6', STT-NW-B @ 6', and STT-WW-B @ 6'.

**On April 17, 2019**, two (2) excavation floor soil samples (ETT-Comp 1 @ 6' and ETT-Comp 4 @ 5') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene, and BTEX concentrations were less than the laboratory RL in the submitted soil samples. Based on the analytical results, the soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentrations ranged from 29.3 mg/kg for soil sample ETT-Comp 1 @ 6' to 291 mg/kg for soil sample ETT-Comp 4 @ 5'. Based on the analytical results, soil sample ETT-



Comp 4' @ 6' exhibited a TPH concentration greater than the NMOCD regulatory guideline. Chloride analysis indicated soil samples ETT-Comp 1 @ 6' and ETT-Comp 4 @ 5' exhibited chloride concentrations of 615 mg/kg and 724 mg/kg, respectively. Chloride analysis indicated a soil samples exhibited ETT-Comp 1 @ 6' and ETT-Comp 4 @ 5' chloride concentrations greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples ETT-Comp 1 @ 6' and ETT-Comp 4 @ 5'.

**On April 17, 2019**, one (1) excavation sidewall soil sample (ETT-NW-C @ 2.5') was collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated the benzene, and BTEX concentration was less than the laboratory RL in the submitted soil sample. Based on the analytical results, the soil sample exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentration was 359 mg/kg and based on the analytical results the soil sample exhibited a TPH concentration greater than the NMOCD regulatory guideline. Chloride analysis indicated the soil sample exhibited a chloride concentration of 197 mg/kg. Chloride analysis indicated the soil sample exhibited a chloride concentration greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil sample ETT-NW-C @ 2.5'.

**On April 17, 2019**, one (1) excavation sidewall soil sample (WTT-NW-C @ 2.5') was collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated the benzene, BTEX, and TPH concentrations were less than the laboratory RL in the submitted soil sample. Based on the analytical results, the soil sample exhibited benzene, BTEX, and TPH concentrations less than the NMOCD regulatory guideline. Chloride analysis indicated the soil sample exhibited a chloride concentration of 197 mg/kg. Chloride analysis indicated the soil sample exhibited a chloride concentration of 965 mg/kg, which is greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the area represented by soil sample WTT-NW-C @ 2.5'.

**On April 17, 2019**, two (2) excavation floor soil samples (TT2 Comp 2 @ 4' and TT2 Comp 4 @ 4') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene, and BTEX concentrations were less than the laboratory RL in the submitted soil samples. Based on the analytical results, the soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from 275 mg/kg for soil sample TT2 Comp 4 @ 4' to 399 mg/kg for soil sample TT2 Comp 2 @ 4'. Based on the analytical results, soil samples TT2 Comp 2 @ 4' and TT2 Comp 4 @ 4' exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride analysis indicated soil samples TT2 Comp 2 @ 4' and TT2 Comp 4 @ 4' exhibited chloride concentrations of 35.1 mg/kg and 30.8 mg/kg, respectively. Chloride analysis indicated soil samples TT2 Comp 2 @ 4' and TT2 Comp 4 @ 4' exhibited concentrations less than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT2 Comp 2 @ 4' and TT2 Comp 4 @ 4'.



**On April 17, 2019**, two (2) excavation sidewall soil samples (TT2-NW-B @ 1.5' and TT2-EW-B @ 1.5') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene, and BTEX concentrations were less than the laboratory RL in the submitted soil samples. Based on the analytical results, the soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from less than the laboratory RL for soil sample TT2-EW-B @ 1.5' to 41.3 mg/kg for soil sample TT2-NW-B @ 1.5'. Based on the analytical results, soil samples TT2-NW-B @ 1.5' and TT2-EW-B @ 1.5' exhibited TPH concentrations less than the NMOCD regulatory guideline. Chloride analysis indicated soil samples TT2-NW-B @ 1.5' and TT2-EW-B @ 1.5' exhibited chloride concentrations of 136 mg/kg and 51.4 mg/kg, respectively. Chloride analysis indicated soil samples TT2-NW-B @ 1.5' and TT2-EW-B @ 1.5' exhibited concentrations less than the NMOCD regulatory guideline. Based on the analytical results, no additional excavation was warranted in the areas represented by soil samples TT2-NW-B @ 1.5' and TT2-EW-B @ 1.5'.

**On August 14, 2019**, one (1) excavation sidewall soil sample (ETT-NW-D @ 2.5') was collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated the benzene, and BTEX concentration was less than the laboratory RL in the submitted soil sample. Based on the analytical results, the soil sample exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentration was 160 mg/kg and based on the analytical results the soil sample exhibited a TPH concentration greater than the NMOCD regulatory guideline. Chloride analysis indicated the soil sample exhibited a chloride concentration of 861 mg/kg. Chloride analysis indicated the soil sample exhibited a chloride concentration greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil sample ETT-NW-D @ 2.5'.

**On August 14, 2019**, one (1) excavation sidewall soil sample (WTT-NW-D @ 2.5') was collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated the benzene, and BTEX concentration was less than the laboratory RL in the submitted soil sample. Based on the analytical results, the soil sample exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentration was 459 mg/kg and based on the analytical results the soil sample exhibited a TPH concentration greater than the NMOCD regulatory guideline. Chloride analysis indicated the soil sample exhibited a chloride concentration of 130 mg/kg. Chloride analysis indicated the soil sample exhibited a chloride concentration greater than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil sample WTT-NW-D @ 2.5'.

**On August 14, 2019**, two (2) excavation floor soil samples (TT2 Comp 2 @ 5' and TT2 Comp 4 @ 5') were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene, and BTEX concentrations were less than the laboratory RL in the submitted soil samples. Based on the analytical results, the soil samples exhibited benzene and BTEX concentrations less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations ranged from 1,178 mg/kg for soil sample TT2 Comp 2 @ 5' to 2,276 mg/kg for soil sample TT2 Comp 4 @ 5'. Based on the analytical results, soil samples TT2



Comp 2 @ 5' and TT2 Comp 4 @ 5' exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride analysis indicated soil samples TT2 Comp 2 @ 5' and TT2 Comp 4 @ 5' exhibited chloride concentrations of 53.3 mg/kg and 24.5 mg/kg, respectively. Chloride analysis indicated soil samples TT2 Comp 2 @ 5' and TT2 Comp 4 @ 5' exhibited concentrations less than the NMOCD regulatory guideline. Based on the analytical results, additional excavation was warranted in the areas represented by soil samples TT2 Comp 2 @ 5' and TT2 Comp 4 @ 5'.

**On August 26, 2019**, excavation activities continued and focused on the stabilization of the existing excavation, which included the benching of the existing excavation sidewalls. Please note, the area associated with trenches TT-1, WTT, ETT, SST, and NTT will be collectively referred to as the "Main Excavation" from this point forward. During the stabilization activities, numerous areas of concern sampled and identified during prior excavation activities were removed. Following the stabilization of the Main Excavation, the Main Excavation was sampled, and the analytical results were evaluated.

In addition, excavation activities continued and focused on the stabilization of the existing excavation associated with the TT-2 Trench area, which will be referred to as the "TT-2 Excavation" from this point forward. During the stabilization activities, numerous areas of concern sampled and identified during the previous excavation activities were removed. Following the stabilization of the TT2 Excavation, the TT2 Excavation was sampled, and the analytical results were evaluated.

**On September 24, 2019**, twenty-nine (29) excavation floor and sidewall soil samples (MN-S1C #1, MW-S1C, MW-F1C #1 @ 5', MW-F1C #2 @ 5', MSW-S1C, MSW-F1C @ 5', MS-S1C, MS-F1C @ 5', ME-S1C, ME-F1C #1 @ 4', ME-F1C #2 @ 4', MN-S1C #2, MNW-S2, MNW-F2 @ 10', MW-S2, MW-F2 @ 10', MSW-S2, MSW-F2 @ 10', MS-S2, MS-F2 @ 10', ME-S2, MW-F2 @ 10', MN-S2, MN-F2 @ 19', MS3 #1, MS3 #2, and MS# #3) were collected from the Main Excavation and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL in each of the twenty-nine (29) submitted soil samples. Based on the analytical results, benzene and BTEX concentrations were less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentrations were less than the laboratory RL, with the exception of soil samples MSW-F1C @ 5' (186 mg/kg), ME-S1C (46.6 mg/kg), MNW-S2 (87.0 mg/kg), MNW-F2 @ 10' (27.2 mg/kg), MW-S2 (61.1 mg/kg), and MS-F2 @ 10' (769 mg/kg), respectively. Based on the analytical results, the areas represented by soil samples MSW-F1C @ 5' (186 mg/kg) and MS-F2 @ 10' (769 mg/kg) exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride concentrations ranged from 9.26 mg/kg for soil sample MNW-F2 @ 10' to 4,050 mg/kg for soil sample ME-F1C #2 @ 4'. Based on the analytical results, the areas represented by soil samples MW-S1C (695 mg/kg), ME-S1C (2,100 mg/kg), ME-F1C #1 @ 4' (603 mg/kg), ME-F1C #2 @ 4' (4,050 mg/kg), ME-S2 (1,030 mg/kg), and MS3 #3 (962 mg/kg) exhibited chloride concentrations greater than the NMOCD regulatory guideline.



Based on the analytical results, additional excavation was warranted in the areas represented by soil samples MW-S1C, MSW-F1C @ 5', ME-S1C, ME-F1C #1 @ 4', ME-F1C #2 @ 4', MS-F2 @ 10', ME-S2, MN-S2, and MS# #3.

**On September 24, 2019**, nine (9) Main Excavation Ramp floor and sidewall soil samples (M Ramp ES2, M Ramp E FL @ 10', M Ramp ES3, M Ramp WS3, M Ramp WS2, M Ramp W FL @ 10', M Ramp Floor #1 Comp, M Ramp Floor #2 Comp, M Ramp Floor #3 Comp) were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL in each of the nine (9) submitted soil samples. Based on the analytical results, benzene and BTEX concentrations were less than the NMOCD regulatory guideline. The analytical results indicated the TPH concentrations were less than the laboratory RL, with the exception of soil samples M Ramp WS2, M Ramp Floor #1 Comp, M Ramp Floor #2 Comp, and M Ramp Floor #3 Comp which exhibited TPH concentrations of 136 mg/kg, 108 mg/kg, 179 mg/kg, and 117 mg/kg, respectively. Based on the analytical results, the areas represented by soil samples M Ramp WS2 (136 mg/kg), M Ramp Floor #1 Comp (108 mg/kg), M Ramp Floor #2 Comp (179 mg/kg), and M Ramp Floor #3 Comp (117 mg/kg) exhibited TPH concentrations greater than the NMOCD regulatory guideline. Chloride concentrations ranged from 9.69 mg/kg for soil sample M Ramp WS2 to 741 mg/kg for soil sample M Ramp ES3. Based on the analytical results, the areas represented by soil sample M Ramp ES3 (741 mg/kg) exhibited chloride concentrations greater than the NMOCD regulatory guideline.

Based on the analytical results, additional excavation was warranted in the areas represented by soil samples M Ramp ES3, M Ramp Floor #1 Comp, M Ramp Floor #2 Comp, and M Ramp Floor #3 Comp.

**On September 24, 2019**, five (5) Main Excavation soil samples (Sample #1 @ 17' through Sample #5 @ 17') were collected at the juncture of Main Excavation floor and sidewall and submitted to the laboratory for BTEX, TPH, and chloride analysis. The soil samples were collected to ensure the horizontal delineation of the impacted excavation floor was achieved. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL in each of the five (5) submitted soil samples. Based on the analytical results, benzene and BTEX concentrations were less than the NMOCD regulatory guideline. The analytical results indicated TPH concentrations were less than the laboratory RL and NMOCD regulatory guideline. Chloride concentrations ranged from 46.4 mg/kg for Sample #2 @ 17' to 801 mg/kg for Sample #5 @ 17'. Based on the analytical results, the areas represented by soil Sample #5 @ 17' exhibited chloride concentrations greater than the NMOCD regulatory guideline.

Based on the analytical results, additional excavation was warranted in the area represented by Sample #5 @ 17'

**On September 27, 2019**, sixteen (16) TT2 Excavation soil samples (TT-2 NS1C, TT-2 NF1 @ 5', TT-2 WS1C, TT-2 WF1 @ 5', TT-2 SS1-3C, TT-2 NS2, TT-2 NF2 @ 10', TT-2 WS2, TT-2 WF2 @ 10', TT-2 NS3, TT-2 WS3, TT-2 ES1-3C, TT-2 Floor @ 15', TT-2 Ramp WSW, TT-2 ESW, TT-2 Ramp Floor Comp) were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The analytical results indicated benzene, BTEX, and TPH concentrations



were less than the laboratory RL in each of the sixteen (16) submitted soil samples. Based on the analytical results, benzene, BTEX, and TPH concentrations were less than the NMOCD regulatory guideline. Chloride concentrations ranged from 20.4 mg/kg for soil sample TT-2 WF1 @ 5' to 545 mg/kg for soil sample TT-2 Ramp ESW. Based on the analytical results, all sixteen (16) soil samples exhibited chloride concentrations less than the NMOCD regulatory guideline. Based on the analytical results, the TT-2 Excavation was backfilled with non-impacted, locally sourced "like" material.

**On October 17-21, 2019**, nine (9) confirmation excavation floor and sidewall soil samples (MW-S1C-A, MSW-F1C @ 7', MS-F2 @ 13', MS-S1C-A, ME-F1C #1 @ 7', MS-F1C #2 @ 7', ME-S2-A, MN-S2-A, and MS #3A) were collected from the Main Excavation and submitted to the laboratory for TPH or chloride analysis. The analytical results indicated TPH concentrations for soil samples MSW-F1C @ 7' and MS-F2 @ 13' were 83.6 mg/kg and 550 mg/kg, respectively. Based on the analytical results, the area represented by soil sample MS-FW @ 13' (550 mg/kg) exhibited a TPH concentration greater than the NMOCD regulatory guideline. The analytical results indicated chloride concentrations for soil samples MW-S1C-A, MS-S1C-A, ME-F1C #1 @ 7', MS-F1C #2 @ 7', ME-S2-A, MN-S2-A, and MS #3A ranged from 72.2 mg/kg for soil sample MW-F1C #1 @ 7' to 439 mg/kg for soil sample ME-S1C-A. Based on the analytical results, the above stated confirmation soil samples exhibited a chloride concentration less than the NMOCD regulatory guideline.

Based on the analytical results, additional excavation was warranted in the area represented by soil sample MS-F2 @ 13'.

**On October 21, 2019**, one (1) Main Excavation confirmation soil sample (Sample #5A @ 17') was collected at the juncture of Main Excavation floor and sidewall and submitted to the laboratory for chloride analysis. The soil sample was collected to ensure the horizontal delineation of the impacted excavation floor was achieved. The analytical results indicated the chloride concentration for Sample #5A @ 17' was 13.9 mg/kg. Based on the analytical results, the area represented by soil Sample #5A @ 17' exhibited chloride concentrations less than the NMOCD regulatory guideline.

**On October 22, 2019**, five (5) Main Excavation Ramp floor and sidewall confirmation soil samples (M Ramp ES3-A, M Ramp WS3-A, M Ramp Floor #1A Comp, M Ramp Floor #2A Comp, and M Ramp Floor #3A Comp) were collected and submitted to the laboratory for TPH or chloride analysis. The analytical results indicated TPH concentrations for soil samples M Ramp WS3-A, M Ramp Floor #1A Comp, M Ramp Floor #2A Comp, and M Ramp Floor #3A Comp ranged from less than the laboratory RL for soil samples M Ramp WS3-A, M Ramp Floor #1A Comp, and M Ramp Floor #3A to 115 mg/kg for soil sample M Ramp Floor #2A Comp. Based on the analytical results, the area represented by soil sample M Ramp Floor #2A Comp exhibited a TPH concentration greater than the NMOCD regulatory guideline. The analytical results indicated the chloride concentration for soil sample M Ramp ES3-A was 21.8 mg/kg. Based on the analytical results, the area represented by soil sample M Ramp ES3-A exhibited a chloride concentration less than the NMOCD regulatory guideline.



Based on the analytical results, additional excavation was warranted in the area represented by soil sample M Ramp Floor #2A Comp.

**On October 23, 2019**, two (2) composite stockpile soil samples (South Stockpile and North Stockpile) were collected and submitted to the laboratory for BTEX, TPH, and chloride analysis. The stockpile contained approximately six-hundred (600) cubic yards (cy) of overburden removed from the Main Excavation. The analytical results indicated benzene and BTEX concentrations were less than the laboratory RL for each soil sample. The analytical results indicated TPH concentrations for South Stockpile and North Stockpile were 74.6 mg/kg and 50.9 mg/kg, respectively. The analytical results indicated chloride concentrations for South Stockpile and North Stockpile were 209 mg/kg and 164 mg/kg, respectively. Based on the analytical results the stockpiled soil was utilized as backfill material.

**On November 7, 2019**, one (1) Main Excavation floor confirmation soil sample (MS-F2 @ 14') and one (1) Main Excavation Ramp floor soil sample (M Ramp Floor #2B Comp) were collected and submitted to the laboratory for TPH analysis. The analytical results indicated TPH concentrations for soil samples MS-F2 @ 14' and M Ramp Floor #2B Comp were 38.3 mg/kg and less than the laboratory RL, respectively. Based on the analytical results, the area represented by soil sample MS-F2 @ 14' and M Ramp Floor #2B Comp exhibited a TPH concentration less than the NMOCD regulatory guideline.

**On November 19, 2019**, based on the analytical results and with NMOCD and NMSLO approved twenty (20) mil polyliner installed on the floor of the Main Excavation at approximately fifteen (15) feet bgs. As approved by the NMOCD and NMSLO, a six (6) inch layer of pad sand was placed above and below the liner to protect the liner during backfilling activities. Approximately six (6) inches of pad sand was placed above and below the line to protect the integrity of the liner during backfilling activities.

Following the emplacement of the liner and upper layer of pad sand, backfilling activities commenced. Locally purchased non-impacted "like" material was transported to the Site. Backfilled was compacted in eighteen (18) inch lifts to minimize future slumping. The top four (4) feet of backfill material consisted of topsoil which should enhance revegetation efforts at the Site.

Approximately 8,869 cubic yards of impacted soil was transported under manifest to the Gandy Marley disposal facility located west of Caprock, New Mexico. Copies of the Gandy Marley Disposal Manifests will be available upon request.

### **3.0 QA/QC PROCEDURES**

#### **3.1 Soil Sampling**

Soil samples were obtained utilizing single-use, disposable, latex gloves and clean sampling tools. The soil sample was placed in a disposable Ziploc sample bag. The bag was labeled. A portion of the soil sample was then placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container was filled to capacity to limit the



amount of headspace present. Each container was labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler was sealed for shipment to the laboratory. Proper chain-of-custody documentation was maintained throughout the sampling process.

Soil samples were delivered to Cardinal Laboratories in Hobbs, New Mexico, Xenco Laboratories in Midland, Texas and Permian Basin Environmental Laboratory (Permian Lab) Midland, Texas for BTEX, TPH and chlorides analyses using the method described below.

- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO
- BTEX concentrations in accordance with EPA Method SW-846 8021b
- Chlorides concentrations in accordance with EPA Method E 300.

### **3.2 Decontamination of Equipment**

Soil sampling tools such as small hand shovels were washed with Liqui-Nox<sup>®</sup> detergent and rinsed with distilled water between the collection of soil samples.

### **3.3 Laboratory Protocol**

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form.

## **4.0 SITE REVEGETATION**

Following backfilling activities, the Moore Sweet Historical Site was contoured reminiscent of the surrounding area.

As required by the NMOCD and NMSLO, the Moore Sweet Historical Release Site will be revegetated as follows:

The Moore Sweet Historical Release Site consists of a Kimbrough-Lea complex soil with 0-3 percent slopes. Vegetation includes short grass and mid-grass communities with less than 5% of woody shrubs and a limited variety of forbs. The dominant grasses are blue grama, sideoats grama, buffalograss, plains bristleggrass and tobosa. Less dominate grasses include black grama, sand dropseed and threeawn. Forbs include gaura, croton, clover, globewillow, ragweed, and wooly plantain.

The preferred time for warm season species is 3-6 weeks after the last killing frost in the spring.

The seeds will be broadcast, and the area raked or dragged to cover the seed. When broadcasting the seed, the pounds per acre will be doubled.

Total pounds of pure live seed per acre are based on seed being weed free. If one species is not available, all other species available will be increased proportionately and at least four (4) species of the recommended grasses will be used, including one (1) forb. No less than eight (8) pounds per acre will be applied. The appropriate application will be reviewed prior to reclamation reseeding.



The NMSLO recommended seed mixture is as follows:

Common Name and Preferred Variety	Scientific Name	Pounds of Pure Live Seed Per Acre
<i>Annual Quick-cover Grass</i>		
Oats	<i>Avena sativa</i>	0.50
Sterile Triticale	<i>Triticum aestivum X Secale cereale 'Quickguard'</i>	0.50
<i>Cool Season Grass</i>		
Western Wheatgrass	<i>Agropyron smithii</i>	2.50
<i>Warm-Season Grass</i>		
Blue Grama	<i>Boutela gracilis</i>	2.0
Little Bluestem	<i>Schizachyrium scoparium</i>	1.0
Black Grama	<i>Bouteloua eriopoda</i>	0.50
Buffalograss	<i>Bouteloua dactyloides</i>	0.50
Indiangrass	<i>Sorghastrum nutans</i>	0.50
Sideoats Grama	<i>Bouteloua curtipendula</i> var. <i>Vaughn</i>	2.00
<i>Wildflowers/ Forbs</i>		
White prairie clover	<i>Dalea candida</i>	0.10
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	0.10
Chia Sage	<i>Salvia columbariae</i>	0.10
Annual buckwheat	<i>Eriogonum annuum</i>	0.10

Noxious weeds growing in the seeded area will be minimized through mechanical or chemical treatment.

## 5.0 SITE CLOSURE REQUEST

Based on the analytical results of confirmation soil samples obtained from the floor and sidewalls of the excavation, TRC recommends Plains provide the NMOCD and NMSLO a copy of this Site Closure Request and request the NMOCD and NMSLO grant soil closure status to the Moore Sweet Historical Release Site.

## 6.0 LIMITATIONS

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

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



recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

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



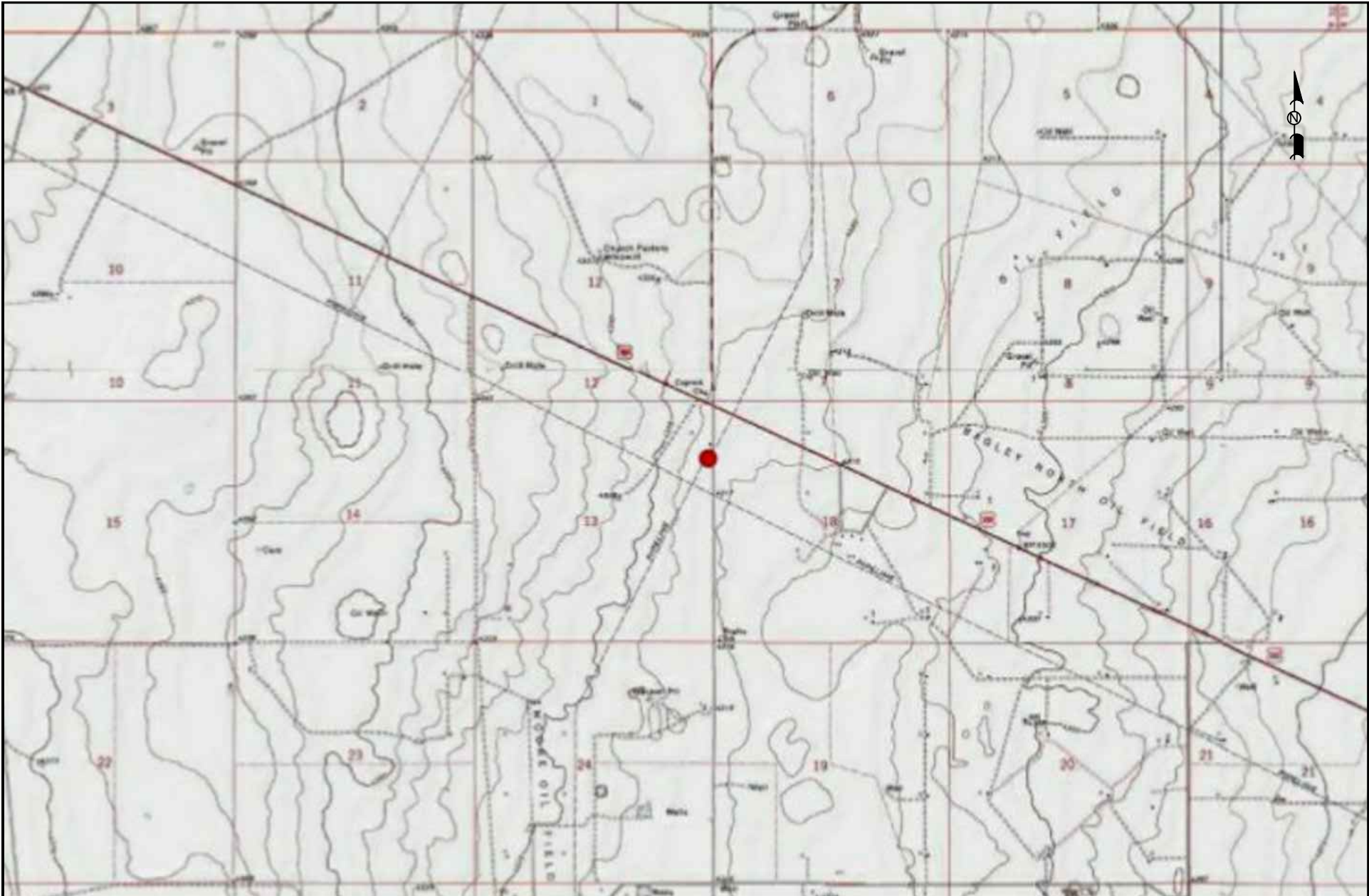
## 7.0 DISTRIBUTION

- Copy 1: New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division, District 1  
1625 French Drive  
Hobbs, NM 88240
- Copy 2: Ryan Mann  
Hobbs Field Office  
New Mexico State Land Office  
914 N. Linam Street  
Hobbs, NM 88240
- Copy 3: Amber Groves  
Plains Marketing, LP  
10 Desta Drive, Suite 550E  
Midland, Texas 79705  
algroves@paalp.com
- Copy 4: TRC Environmental Corporation  
10 Desta Drive, Suite 150E  
Midland, Texas 79705  
cdstanley@trccompanies.com



## Figures





LEGEND:

● Site Location

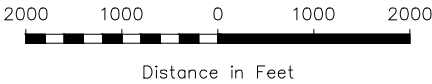


Figure 1

Topographic Map

Plains Marketing, L.P.  
Moore Sweet Historical  
Lea County, NM

Scale: 1" = 2000'

CAD By: CS

Checked By: CS

Draft: January 20, 2020

Lat. N 33.369369° Long. W 103.66272°

ULT A & H, Sec 13, T11S R32E







Google Earth

LEGEND:

- Site Location
- 1/2 Mile Radius

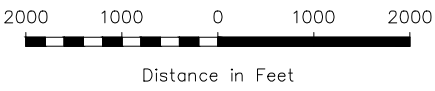


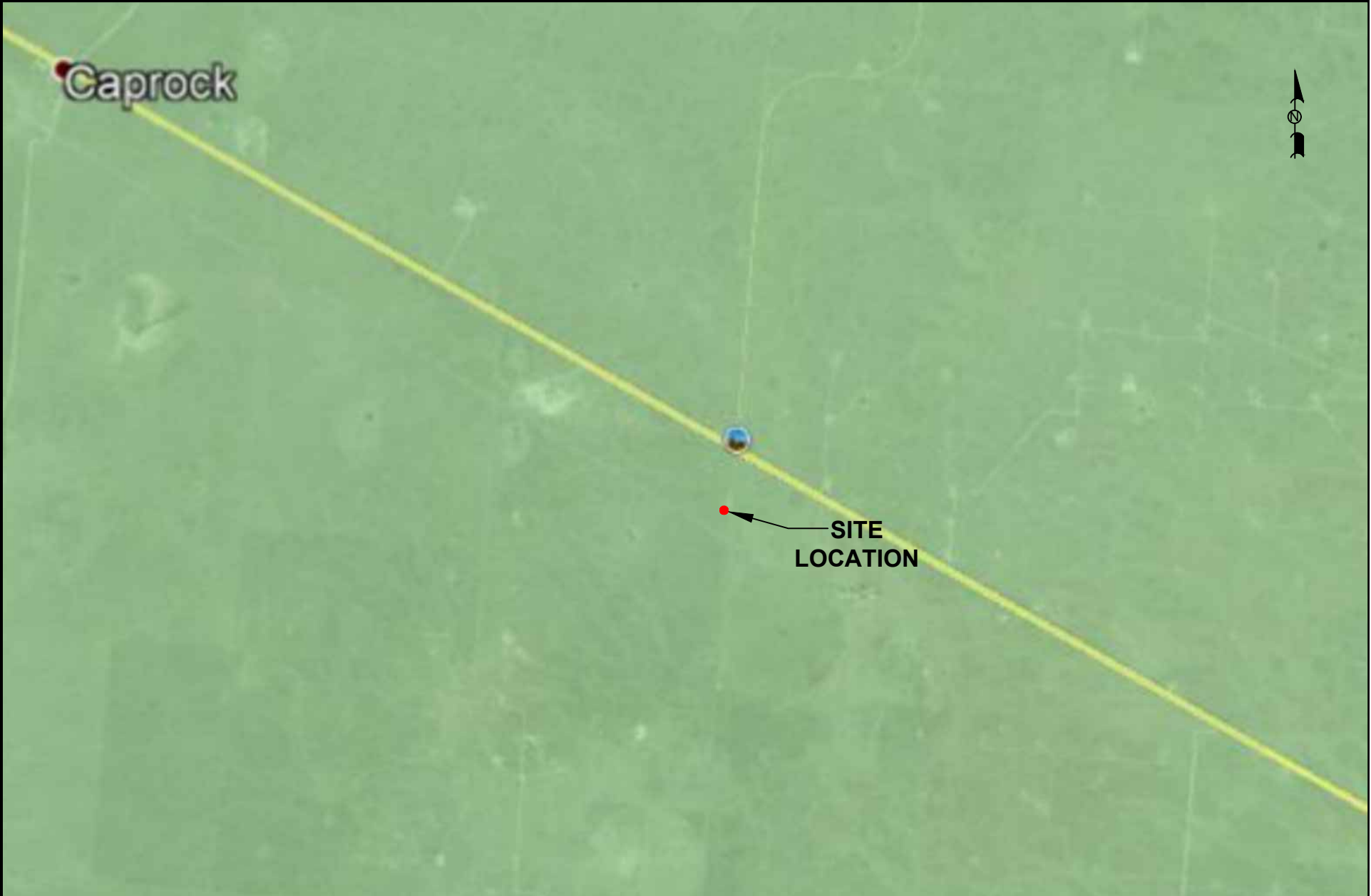
Figure 2  
Aerial Map  
Plains Marketing, L.P.  
Moore Sweet Historical  
Lea County, NM

Scale: 1" = 2000'
CAD By: CS
Checked By: CS
Draft: January 20, 2020
Lat. N 33.369369° Long. W 103.66272°
ULT A & H, Sec 13, T11S R32E



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Midland, Texas 79703  
432.520.7720





LEGEND:

- Low Karst Potential
- Medium Karst Potential
- Critical Karst Potential

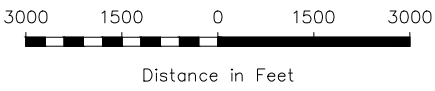


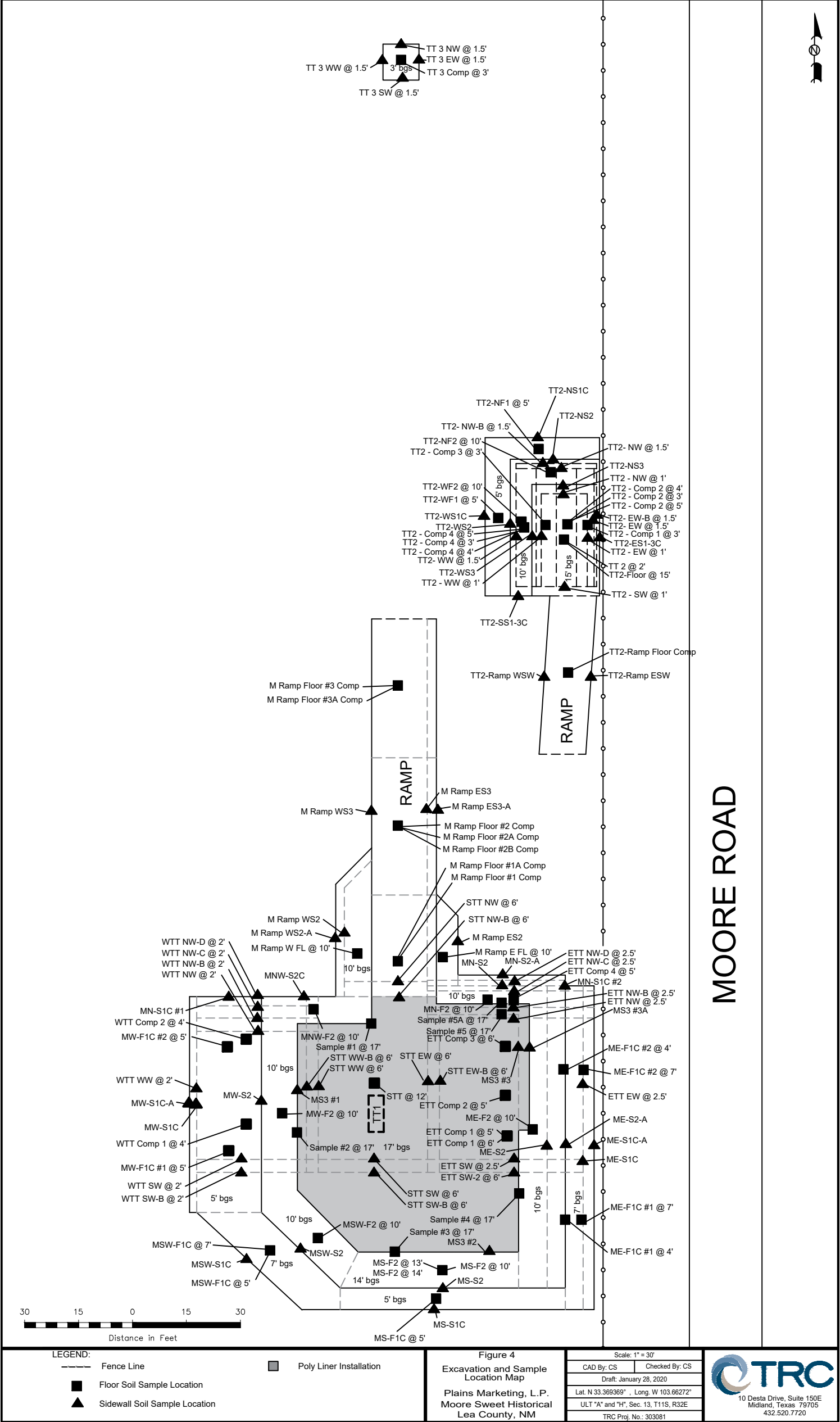
Figure 3  
Karst Potential Map  
Plains Marketing, L.P.  
Moore Sweet Historical  
Lea County, NM

Scale: 1" = 3000'
CAD By: CS
Checked By: CS
Draft: January 20, 2020
Lat. N 33.369369° Long. W 103.66272°
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Table



**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL**  
**MOORE SWEET HISTORICAL**  
**PLAINS MARKETING, L.P.**  
**LEA COUNTY, NM**  
**SRS# Moore Sweet Historical**

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:					Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M					CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	GRO+DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
NTT 1A @ 8'	10/9/2018	8'	Excavated	-	-	-	-	-	<10.0	42.7	42.7	<10.0	42.7	-
TT 1 @ 14'	11/9/2018	14'	Excavated	-	-	-	-	-	69.4	1,770	1,839	242	<b>2,081.4</b>	128
ETT Comp 1 @ 5'	11/9/2018	5'	Excavated	-	-	-	-	-	<10.0	185	185	32.1	<b>217.1</b>	512
ETT Comp 2 @ 5'	11/9/2018	5'	Excavated	-	-	-	-	-	<10.0	15.2	15.2	<10.0	15.2	464
ETT - NW @ 2.5'	11/9/2018	2.5'	Excavated	-	-	-	-	-	<10.0	118	118	19.8	<b>137.8</b>	496
W TT Comp 2 @ 4'	11/9/2018	4'	Excavated	-	-	-	-	-	<10.0	32.7	33	11.6	44.3	48.0
W TT Comp 1 @ 4'	11/9/2018	4'	Excavated	-	-	-	-	-	<10.0	33.9	34	12.3	46.2	416
W TT - SW @ 2'	11/9/2018	2'	Excavated	-	-	-	-	-	<10.0	149	149	77.0	<b>226.0</b>	48.0
W TT - WW @ 2'	11/9/2018	2'	Excavated	-	-	-	-	-	<10.0	33.0	33	28.7	61.7	560
W TT - NW @ 2'	11/9/2018	2'	Excavated	-	-	-	-	-	<10.0	106	106	70.4	<b>176.4</b>	80.0
S TT @ 12'	11/9/2018	12'	Excavated	-	-	-	-	-	53.9	2,410	2,463.9	328	<b>2,791.9</b>	80.0
S TT - EW @ 6'	11/9/2018	6'	Excavated	-	-	-	-	-	32.0	2,110	2,142.0	323	<b>2,465.0</b>	384
S TT - NW @ 6'	11/9/2018	6'	Excavated	-	-	-	-	-	101	2,950	3,051	373	<b>3,424</b>	320
S TT - SW @ 6'	11/9/2018	6'	Excavated	-	-	-	-	-	31.8	1,050	1,081.8	161	<b>1,242.8</b>	192
S TT - WW @ 6'	11/9/2018	6'	Excavated	-	-	-	-	-	85.8	3,520	3,605.8	548	<b>4,153.8</b>	576
TT 2 @ 2'	11/9/2018	2'	Excavated	-	-	-	-	-	<10.0	348	348	171	<b>519</b>	176
TT 2 - WW @ 1'	11/9/2018	1'	Excavated	-	-	-	-	-	<10.0	249	249	147	<b>396</b>	320
TT 2 - NW @ 1'	11/9/2018	1'	Excavated	-	-	-	-	-	<10.0	70.8	71	34.6	<b>105.4</b>	208
TT 2 - EW @ 1'	11/9/2018	1'	Excavated	-	-	-	-	-	<10.0	249	249	108	<b>357</b>	16.0
TT 2 - SW @ 1'	11/9/2018	1'	Excavated	-	-	-	-	-	<10.0	49.7	50	39.5	89.2	208
TT 3 Comp @ 3'	11/9/2018	3'	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
TT 3 - NW @ 1.5'	11/9/2018	1.5'	In-Situ	-	-	-	-	-	<10.0	25.9	25.9	12.1	38.0	<16.0
TT 3 - SW @ 1.5'	11/9/2018	1.5'	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
TT 3 - WW @ 1.5'	11/9/2018	1.5'	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
TT 3 - EW @ 1.5'	11/9/2018	1.5'	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	13.8	13.8	<16.0
ETT Comp 3 @ 6'	11/13/2018	6'	Excavated	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	320
ETT - SW @ 2.5'	11/13/2018	2.5'	Excavated	-	-	-	-	-	<10.0	13.2	13.2	<10.0	13.2	160
ETT - SW-2 @ 6"	11/13/2018	6"	Excavated	-	-	-	-	-	<10.0	15.6	15.6	<10.0	15.6	<b>672</b>
ETT EW @ 2.5'	11/13/2018	2.5'	Excavated	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	304
TT-1 @ 15'	12/12/2018	15'	Excavated	<0.0964	0.934	<0.501	1.69	2.624	490	1,820	2,310	143	<b>2,453</b>	23.0
TT-1 @ 16"	12/12/2018	16"	Excavated	<0.0962	0.983	<0.500	1.89	2.873	533	1,660	2,193	118	<b>2,311</b>	180
TT-1 @ 17'	12/12/2018	17'	Excavated	<0.200	1.27	<0.200	<0.399	1.27	725	2,150	2,875	150	<b>3,025</b>	34.6



**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL**  
**MOORE SWEET HISTORICAL**  
**PLAINS MARKETING, L.P.**  
**LEA COUNTY, NM**  
**SRS# Moore Sweet Historical**

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:					Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M					E300 CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	GRO+DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
TT-1 @ 18'	12/12/2018	18'	Risk	0.0849	0.0509	0.412	2.502	3.0498	501	1,270	1,771	114	<b>1,885</b>	460
TT-1 @ 19'	12/12/2018	19'	Risk	0.0379	1.97	0.306	2.386	4.6999	565	1,510	2,075	125	<b>2,200</b>	70.4
TT-1 @ 20'	12/12/2018	20'	Risk	<0.000385	0.00483	0.0169	0.1044	0.12613	448	1,230	1,678	97.6	<b>1,775.6</b>	57.4
TT-1 @ 21'	12/12/2018	21'	Risk	<0.0200	0.740	0.213	2.44	3.393	454	1,200	1,654	102	<b>1,756</b>	-
TT-1 @ 22'	12/12/2018	22'	Risk	<0.00998	0.610	0.164	1.735	2.509	554	1,470	2,024	132	<b>2,156</b>	-
TT-1 @ 23'	12/12/2018	23'	Risk	<0.00996	<0.00996	<0.00996	0.0837	0.0837	52.9	492	544.9	46.8	<b>591.7</b>	-
TT-1 @ 24'	12/12/2018	24'	Risk	<0.00202	<0.00202	0.00211	0.0265	0.02861	78.1	561	639.1	50.9	<b>690.0</b>	-
TT-1 @ 25'	12/12/2018	25'	Risk	<0.00200	<0.00200	<0.00200	<0.00400	<0.00400	<15.0	117	117	<15.0	<b>117</b>	-
TT-1 @ 26'	2/13/2019	26'	Risk	0.111	0.0855	<0.0199	0.152	0.3485	35.8	209	245	<15.0	<b>244.8</b>	-
TT-1 @ 27'	2/13/2019	27'	Risk	0.113	0.656	0.134	2.14	3.043	280	879	1,159	58.7	<b>1,217.7</b>	-
TT-1 @ 28'	2/13/2019	28'	Risk	0.106	<0.00946	0.0269	0.1067	0.2396	31.0	176	207.0	<13.6	<b>207.0</b>	-
TT-1 @ 29'	2/13/2019	29'	Risk	<0.00202	0.0320	0.00387	0.04936	0.08523	55.1	286	341.1	24.5	<b>365.6</b>	-
TT-1 @ 30'	2/13/2019	30'	Risk	<0.000383	0.00395	<0.000563	0.00477	0.00872	<15.0	92.2	92.2	<15.0	92.2	-
ETT - NW - B @ 2.5'	4/3/2019	2.5'	Excavated	<0.0198	<0.0198	<0.0198	<0.0395	<0.0395	<3.95	31.0	31.0	<25.1	31.0	<b>641</b>
TT2 - Comp 1 @ 3'	4/3/2019	3'	Excavated	<0.0193	<0.0193	<0.0193	<0.0387	<0.0387	<3.87	40.2	40.2	<25.2	40.2	85.6
TT2 - Comp 2 @ 3'	4/3/2019	3'	Excavated	<0.0183	<0.0183	<0.0183	<0.0366	<0.0366	<3.66	184	184	<24.8	<b>184</b>	30.3
TT2 - Comp 3 @ 3'	4/3/2019	3'	Excavated	<0.0198	<0.0198	<0.0198	<0.0395	<0.0395	<3.95	68.3	68.3	<25.0	68.3	42.3
TT2 - Comp 4 @ 3'	4/3/2019	3'	Excavated	<0.0178	<0.0178	<0.0178	<0.0357	<0.0357	<3.57	153	153	<25.2	<b>153</b>	14.9
TT2 - WW @ 1.5'	4/3/2019	1.5'	Excavated	<0.0178	<0.0178	<0.0178	<0.0356	<0.0356	<3.56	38.5	38.5	<25.0	38.5	176
TT2 - NW @ 1.5'	4/3/2019	1.5'	Excavated	<0.0185	<0.0185	<0.0185	<0.0370	<0.0370	<3.70	104	104	<25.1	<b>104</b>	128
TT2 - EW @ 1.5'	4/3/2019	1.5'	Excavated	<0.0193	<0.0193	<0.0193	<0.0386	<0.0386	<3.86	106	106	<25.1	<b>106</b>	<9.98
WTT - NW - B @ 2'	4/4/2019	2'	Excavated	<0.0184	<0.0184	<0.0184	<0.0368	<0.0368	<3.68	86.5	86.5	<25.0	86.5	100
WTT - SW - B @ 2'	4/4/2019	2'	Excavated	<0.0196	<0.0196	<0.0196	<0.0392	<0.0392	<3.92	76.3	76.3	<24.9	76.3	159
STT-EW-B @ 6'	4/16/2019	6'	Excavated	<0.0996	3.07	4.56	24.5	32.13	526	5,470	5,996	145	<b>6,141</b>	<b>1,770</b>
STT-NW-B @ 6'	4/16/2019	6'	Excavated	<0.0400	<0.0400	<0.0400	0.364	0.364	126	1,210	1,336	28.9	<b>1,364.9</b>	48.0
STT-SW-B @ 6'	4/16/2019	6'	Excavated	<0.0200	<0.0200	0.0838	0.236	0.3198	14.2	57.2	71.4	<25.2	79.58	99.1
STT-WW-B @ 6'	4/16/2019	6'	Excavated	<0.0852	<0.0852	0.698	4.12	4.818	661	6,280	6,941	196	<b>7,137</b>	63.3
ETT-Comp 1 @ 6'	4/17/2019	6'	Excavated	<0.0179	<0.0179	<0.0179	<0.0357	<0.0357	<3.57	29.3	29.3	<24.8	29.3	<b>615</b>
ETT-Comp 4 @ 5'	4/17/2019	5'	Excavated	<0.0171	<0.0171	<0.0171	<0.0342	<0.0342	<3.42	291	291	<25.2	<b>291</b>	<b>724</b>
ETT-NW-C @ 2.5'	4/17/2019	2.5'	Excavated	<0.0171	<0.0171	<0.0171	<0.0342	<0.0342	<3.42	359	359	<250	<b>359</b>	197



**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL**  
**MOORE SWEET HISTORICAL**  
**PLAINS MARKETING, L.P.**  
**LEA COUNTY, NM**  
**SRS# Moore Sweet Historical**

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:					Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M					CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	GRO+DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
WTT-NW-C @ 2'	4/17/2019	2'	Excavated	<0.0189	<0.0189	<0.0189	<0.0378	<0.0378	<3.78	<24.8	<24.8	<24.8	<24.8	<b>965</b>
TT2 Comp 2 @ 4'	4/17/2019	4'	Excavated	<0.0170	<0.0170	<0.0170	<0.0340	<0.0340	<3.40	399	399	<37.2	<b>399</b>	35.1
TT2 - Comp 4 @ 4'	4/17/2019	4'	Excavated	<0.0185	<0.0185	<0.0185	<0.0370	<0.0370	<3.70	275	275	<126	<b>275</b>	30.8
TT2-NW-B @ 1.5'	4/17/2019	1.5'	Excavated	<0.0192	<0.0192	<0.0192	<0.0383	<0.0383	<3.83	41.3	41	<25.0	41.3	136
TT2-EW-B @ 1.5'	4/17/2019	1.5'	Excavated	<0.0172	<0.0172	<0.0172	<0.0343	<0.0343	<3.43	<25.2	<25.2	<25.2	<25.2	51.4
ETT-NW-D @ 2.5'	8/14/2019	2.5'	Excavated	<0.0178	<0.0178	<0.0178	<0.0356	<0.0356	<49.6	100	100	59.6	<b>160</b>	<b>861</b>
WTT-NW-D @ 2'	8/14/2019	2'	Excavated	<0.0197	<0.0197	<0.0197	<0.0394	<0.0394	<49.9	321	321	138	<b>459</b>	130
TT2 Comp 2 @ 5'	8/14/2019	5'	Excavated	<0.0192	<0.0192	<0.0192	<0.0384	<0.0384	<50.0	960	960	218	<b>1178</b>	53.3
TT2 - Comp 4 @ 5'	8/14/2019	5'	Excavated	<0.0177	<0.0177	<0.0177	<0.0353	<0.0353	<50.0	1900	1,900	376	<b>2276</b>	24.5
MN-S1C #1	9/24/2019	0 - 5'	In-Situ	<0.00105	<0.00105	<0.00211	<0.00211	<0.00211	<26.3	<26.3	<26.3	<26.3	<26.3	29.0
MW-S1C	9/24/2019	0 - 5'	Excavated	<0.00102	<0.00102	<0.00204	<0.00102	<0.00204	<25.5	<25.5	<25.5	<25.5	<25.5	<b>695</b>
MW-F1C #1 @ 5'	9/24/2019	5'	In-Situ	<0.00106	<0.00106	<0.00213	<0.00106	<0.00106	<26.6	<26.6	<26.6	<26.6	<26.6	59.2
MW-F1C #2 @ 5'	9/24/2019	5'	In-Situ	<0.00106	<0.00106	<0.00213	<0.00106	<0.00106	<26.6	<26.6	<26.6	<26.6	<26.6	42.6
MSW-S1C	9/24/2019	0 - 5'	In-Situ	<0.00133	<0.00133	<0.00267	<0.00133	<0.00267	<33.3	<33.3	<33.3	<33.3	<33.3	86.7
MSW-F1C @ 5'	9/24/2019	5'	Excavated	<0.00102	<0.00102	<0.00204	<0.00102	<0.00204	<25.5	186	186	<25.5	<b>186</b>	42.4
MS-S1C	9/24/2019	0 - 5'	In-Situ	<0.00103	<0.00103	<0.00206	<0.00103	<0.00206	<25.8	<25.8	<25.8	<25.8	<25.8	596
MS-F1C @ 5'	9/24/2019	5'	In-Situ	<0.00109	<0.00109	<0.00217	<0.00109	<0.00109	<27.2	<27.2	<27.2	<27.2	<27.2	124
ME-S1C	9/24/2019	0 - 4'	Excavated	<0.00105	<0.00105	<0.00211	<0.00105	<0.00105	<26.3	46.6	46.6	<26.3	46.6	<b>2100</b>
ME-F1C #1 @ 4'	9/24/2019	4'	Excavated	<0.00112	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1	<28.1	<b>603</b>
ME-F1C #2 @ 4'	9/24/2019	4'	Excavated	<0.00108	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	<26.9	<26.9	<26.9	<26.9	<b>4050</b>
MN-S1C #2	9/24/2019	0 - 4'	In-Situ	<0.00105	<0.00105	<0.00211	<0.00105	<0.00211	<26.3	<26.3	<26.3	<26.3	<26.3	197
MNW-S2	9/24/2019	0 - 10'	In-Situ	<0.00101	<0.00101	<0.00202	<0.00101	<0.00202	<25.3	87.0	87.0	<25.3	87.0	214
MNW-F2 @ 10'	9/24/2019	10'	In-Situ	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	<27.2	9.26
MW-S2	9/24/2019	5' - 10'	In-Situ	<0.00102	<0.00102	<0.00204	<0.00102	<0.00204	<25.5	61.1	61.1	<25.5	61.1	109
MW-F2 @ 10'	9/24/2019	10'	In-Situ	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	<27.2	33.7
MSW-S2	9/24/2019	5' - 10'	In-Situ	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	509
MSW-F2 @ 10'	9/24/2019	10'	In-Situ	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	<27.8	<27.8	<27.8	<27.8	353
MS-S2	9/24/2019	5' - 10'	In-Situ	<0.00108	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	<26.9	<26.9	<26.9	<26.9	348
MS-F2 @ 10'	9/24/2019	10'	Excavated	<0.00108	<0.00108	<0.00215	<0.00108	<0.00215	<26.9	620	620	149	<b>769</b>	61.3
ME-S2	9/24/2019	5' - 10'	Excavated	<0.00122	<0.00122	<0.00244	<0.00122	<0.00244	<30.5	<30.5	<30.5	<30.5	<30.5	<b>1030</b>
ME-F2 @ 10'	9/24/2019	10'	In-Situ	<0.00112	<0.00112	<0.00225	<0.00112	<0.00225	<28.1	<28.1	<28.1	<28.1	<28.1	372
MN-S2	9/24/2019	5' - 10'	Excavated	<0.00102	<0.00102	<0.00204	<0.00102	<0.00204	<25.5	<25.5	<25.5	<25.5	<25.5	<b>1080</b>



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MOORE SWEET HISTORICAL  
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SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:					Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M					E300 CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	GRO+DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
MN-F2 @ 10'	9/24/2019	10'	In-Situ	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	138
MS3 #1	9/24/2019	10' - 17'	In-Situ	<0.00101	<0.00101	<0.00202	<0.00101	<0.00202	<25.3	<25.3	<25.3	<25.3	<25.3	48.8
MS3 #2	9/24/2019	10' - 17'	In-Situ	<0.00106	<0.00106	<0.00106	<0.00213	<0.00213	<26.6	<26.6	<26.6	<26.6	<26.6	551
MS3 #3	9/24/2019	10' - 17'	Excavated	<0.00102	<0.00102	<0.00102	<0.00204	<0.00204	<25.5	<25.5	<25.5	<25.5	<25.5	962
M Ramp ES2	9/24/2019	0 - 10'	In-Situ	<0.00104	<0.00104	<0.00208	<0.00104	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	31.2
M Ramp E FL @ 10'	9/24/2019	10'	In-Situ	<0.00106	<0.00106	<0.00213	<0.00106	<0.00106	<26.6	<26.6	<26.6	<26.6	<26.6	36.3
M Ramp ES3	9/24/2019	0 - 17'	Excavated	<0.00101	<0.00101	<0.00202	<0.00101	<0.00202	<25.3	<25.3	<25.3	<25.3	<25.3	741
M Ramp WS3	9/24/2019	0 - 17'	In-Situ	<0.00101	<0.00101	<0.00202	<0.00101	<0.00202	<25.3	<25.3	<25.3	<25.3	<25.3	304
M Ramp WS2	9/24/2019	0 - 10'	Excavated	<0.00106	<0.00106	<0.00213	<0.00106	<0.00106	<26.6	136	136	<26.6	136	9.69
M Ramp W FL @ 10'	9/24/2019	10'	In-Situ	<0.00106	<0.00106	<0.00213	<0.00106	<0.00106	<26.6	<26.6	<26.6	<26.6	<26.6	34.5
M Ramp Floor #1 Comp	9/24/2019	10' - 17'	Excavated	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	108	108	<27.8	108	165
M Ramp Floor #2 Comp	9/24/2019	5' - 10'	Excavated	<0.00105	<0.00105	<0.00211	<0.00105	<0.00211	<26.3	179	179	<26.3	179	288
M Ramp Floor #3 Comp	9/24/2019	0 - 5'	Excavated	<0.00102	<0.00102	<0.00204	<0.00102	<0.00204	<25.5	117	117	<25.5	117	149
Sample #1 @ 17'	9/24/2019	17'	In-Situ	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	<27.8	<27.8	<27.8	<27.8	83.5
Sample #2 @ 17'	9/24/2019	17'	In-Situ	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	<27.2	46.4
Sample #3 @ 17'	9/24/2019	17'	In-Situ	<0.00110	<0.00110	<0.00220	<0.00110	<0.00220	<27.5	<27.5	<27.5	<27.5	<27.5	383
Sample #4 @ 17'	9/24/2019	17'	In-Situ	<0.00111	<0.00111	<0.00222	<0.00111	<0.00222	<27.8	<27.8	<27.8	<27.8	<27.8	150
Sample #5 @ 17'	9/24/2019	17'	Excavated	<0.00109	<0.00109	<0.00217	<0.00109	<0.00217	<27.2	<27.2	<27.2	<27.2	<27.2	801
TT-2 NS1C	9/27/2019	0 - 5'	In-Situ	<0.00108	<0.00108	<0.00108	<0.00215	<0.00215	<26.9	<26.9	<26.9	<26.9	<26.9	158
TT-2 NF1 @ 5'	9/27/2019	5'	In-Situ	<0.00104	<0.00104	<0.00104	<0.00208	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	47.3
TT-2 WS1C	9/27/2019	0 - 5'	In-Situ	<0.00103	<0.00103	<0.00103	<0.00206	<0.00206	<25.8	<25.8	<25.8	<25.8	<25.8	32.0
TT-2 WF1 @ 5'	9/27/2019	5'	In-Situ	<0.00108	<0.00108	<0.00108	<0.00215	<0.00215	<26.9	<26.9	<26.9	<26.9	<26.9	20.4
TT-2 SS1-3C	9/27/2019	0 - 15'	In-Situ	<0.00104	<0.00104	<0.00104	<0.00208	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	79.1
TT-2 NS2	9/27/2019	5' - 10'	In-Situ	<0.00104	<0.00104	<0.00104	<0.00208	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	175
TT-2 NF2 @ 10'	9/27/2019	10'	In-Situ	<0.00104	<0.00104	<0.00104	<0.00208	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	31.2
TT-2 WS2	9/27/2019	5' - 10'	In-Situ	<0.00104	<0.00104	<0.00104	<0.00208	<0.00208	<26.0	<26.0	<26.0	<26.0	<26.0	87.0
TT-2 WF2 @ 10'	9/27/2019	10'	In-Situ	<0.00111	<0.00111	<0.00111	<0.00222	<0.00222	<27.8	<27.8	<27.8	<27.8	<27.8	57.5
TT-2 NS3	9/27/2019	10' - 15'	In-Situ	<0.00105	<0.00105	<0.00105	<0.00211	<0.00211	<26.3	<26.3	<26.3	<26.3	<26.3	55.6
TT-2 WS3	9/27/2019	10' - 15'	In-Situ	<0.00106	<0.00106	<0.00106	<0.00213	<0.00213	<26.6	<26.6	<26.6	<26.6	<26.6	39.8
TT-2 ES1-3C	9/27/2019	0 - 15'	In-Situ	<0.00103	<0.00103	<0.00103	<0.00206	<0.00206	<25.8	<25.8	<25.8	<25.8	<25.8	81.1
TT-2 Floor @ 15'	9/27/2019	15'	In-Situ	<0.00106	<0.00106	<0.00106	<0.00213	<0.00213	<26.6	<26.6	<26.6	<26.6	<26.6	38.5
TT-2 Ramp WSW	9/27/2019	0 - 15'	In-Situ	<0.00101	<0.00101	<0.00101	<0.00202	<0.00202	<25.3	<25.3	<25.3	<25.3	<25.3	42.9
TT-2 Ramp ESW	9/27/2019	0 - 15'	In-Situ	<0.00102	<0.00102	<0.00102	<0.00204	<0.00204	<25.5	<25.5	<25.5	<25.5	<25.5	545
TT-2 Ramp Floor Comp	9/27/2019	0 - 15'	In-Situ	<0.00105	<0.00105	<0.00105	<0.00211	<0.00211	<26.3	<26.3	<26.3	<26.3	<26.3	69.7
MW-S1C-A	10/17/2019	0 - 5'	In-Situ	-	-	-	-	-	-	-	-	-	-	114



**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL**  
**MOORE SWEET HISTORICAL**  
**PLAINS MARKETING, L.P.**  
**LEA COUNTY, NM**  
**SRS# Moore Sweet Historical**

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:					Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M					CHLORIDE (mg/Kg)
									GRO (mg/Kg)	DRO (mg/Kg)	GRO+DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	
MSW-F1C @ 7'	10/17/2019	7'	In-Situ	-	-	-	-	-	-	-		-	83.6	-
MS-F2 @ 13'	10/17/2019	13'	Excavated	-	-	-	-	-	-	-		-	550	-
ME-S1C-A	10/18/2019	0 - 7'	In-Situ	-	-	-	-	-	-	-		-	-	439
ME-F1C #1 @ 7'	10/18/2019	7'	In-Situ	-	-	-	-	-	-	-		-	-	72.2
ME-F1C #2 @ 7'	10/18/2019	7'	In-Situ	-	-	-	-	-	-	-		-	-	158
ME-S2-A	10/18/2019	5' - 10'	In-Situ	-	-	-	-	-	-	-		-	-	285
MN-S2-A	10/21/2019	5' - 10'	In-Situ	-	-	-	-	-	-	-		-	-	78.1
MS3 #3A	10/21/2019	10' - 17'	In-Situ	-	-	-	-	-	-	-		-	-	75.1
Sample #5A @ 17'	10/21/2019	17'	In-Situ	-	-	-	-	-	-	-		-	-	13.9
M Ramp ES3-A	10/22/2019	0 - 17'	In-Situ	-	-	-	-	-	-	-		-	-	21.8
M Ramp WS2-A	10/22/2019	0 - 10'	In-Situ	-	-	-	-	-	-	-		-	<27.8	-
M Ramp Floor #1A Comp	10/22/2019	10' - 17'	In-Situ	-	-	-	-	-	-	-		-	<27.2	-
M Ramp Floor #2A Comp	10/22/2019	5.5' - 10.5'	Excavated	-	-	-	-	-	-	-		-	115	-
M Ramp Floor #3A Comp	10/22/2019	0 - 5'	In-Situ	-	-	-	-	-	-	-		-	<27.5	-
South Stockpile	10/23/2019	-	-	<0.00106	<0.00106	<0.00106	<0.00213	<0.00213	<26.6	74.6	74.6	<26.6	74.6	209
North Stockpile	10/23/2019	-	-	<0.00103	<0.00103	<0.00103	<0.00206	<0.00206	<25.8	50.9	50.9	<25.8	50.9	164
MS-F2 @ 14'	11/7/2019	14'	In-Situ	-	-	-	-	-	<27.5	38.3	38.3	<27.5	38.3	-
M Ramp Floor #2B Comp	11/7/2019	6' - 11'	In-Situ	-	-	-	-	-	<29.8	<29.8	<29.8	<29.8	<29.8	-
NMOC Regulatory Guideline				10	-	-	-	50	-	-		-	100	600



## Appendix A

### NMOCD and NMSLO Correspondence



**Stanley, Curtis D.**

**From:** Amber L Groves <ALGroves@paalp.com>  
**Sent:** Friday, January 31, 2020 9:59 AM  
**To:** Stanley, Curtis D.  
**Subject:** [EXTERNAL] FW: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

**From:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>  
**Sent:** Thursday, September 6, 2018 8:54 AM  
**To:** Mann, Ryan <rmann@slo.state.nm.us>; Lowry, Joel <JLowry@trcsolutions.com>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>  
**Cc:** Camille J Bryant <CJBryant@paalp.com>; Amber L Groves <ALGroves@paalp.com>  
**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan [External]

Good morning Ms. Bryant:

Pardon for the revised decision on proposed remedial activity for 1RP-5024. After a discussion yesterday afternoon with District 2 and using time-series USGS data, the determination is that if the deepest depth of impact from the water table is  $\leq 50$  ft., then the impacted soil needs to be removed. In other words, at least 12 ft. of soil will need to be removed from the areas represented by TT-1 and WTT-1. Emplacement of a liner with 4 ft. removal will not be appropriate for this location. Please ensure that there are confirmation chloride data as well.

Thank you for your continued compliance.

Olivia Yu  
 Environmental Specialist  
 NMOCD, District I  
[Olivia.yu@state.nm.us](mailto:Olivia.yu@state.nm.us)  
 575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

**From:** Mann, Ryan <rmann@slo.state.nm.us>  
**Sent:** Wednesday, September 5, 2018 3:54 PM  
**To:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Lowry, Joel <JLowry@trcsolutions.com>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>  
**Cc:** Camille J Bryant <CJBryant@paalp.com>; Amber L Groves <ALGroves@paalp.com>



**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

NMSLO approves the additional delineation and the remediation plan.

Ryan Mann  
Remediation Specialist  
Field Operation Division  
(575) 392-3697  
(505) 699-1989  
New Mexico State Land Office  
2827 N. Dal Paso Suite 117  
Hobbs, NM 88240

---

**From:** Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]

**Sent:** Tuesday, September 4, 2018 12:14 PM

**To:** Lowry, Joel <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Mr. Lowry et al.:

As per our meeting this morning, NMOCD agrees with the proposed additional delineation and remediation plan for 1RP-5024. Please remember to submit field and laboratory chloride data for the location, in conjunction with photo documentation of the remediated area. Please inform if clarification or further information is required.

Like approval from NMSLO required. NMSLO may have additional concerns or stipulations.

Thanks,  
Olivia

---

**From:** Yu, Olivia, EMNRD

**Sent:** Monday, August 27, 2018 8:04 AM

**To:** 'Lowry, Joel' <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Good morning Mr. Lowry:

Yes. Confirmed for 8 am MST, September 4, 2018.

Please note that the new C-141 form is online: <http://www.emnrd.state.nm.us/OCD/forms.html>

Thanks,  
Olivia



**From:** Lowry, Joel <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>

**Sent:** Monday, August 27, 2018 7:58 AM

**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Ms. Yu,

Might you be able to squeeze us in on the 4<sup>th</sup>. Possibly around 8:00 AM? Thanks.

Respectfully,

Joel Lowry

---

**From:** Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]

**Sent:** Friday, August 24, 2018 9:30 AM

**To:** Lowry, Joel <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Good morning Joel:

I just spoke with Amber. Pardon for missing the meeting request. Currently, the meeting availability dates are August 28 and September 4-5. Preference for morning meeting, if possible.

Thanks,  
Olivia

---

**From:** Lowry, Joel <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>

**Sent:** Monday, August 20, 2018 2:52 PM

**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Please find attached the *Initial Investigation Summary and Proposed Remediation Workplan* that has been prepared for Plains' Moore Sweet Historical environmental remediation Site. The Site is located in Unit Letters "A&H", Section 13, Township 11 South, Range 32 East in Lea County, New Mexico on land administered by the New Mexico State Land Office. The Initial C-141 indicated that historical soil impacts were discovered during the reclamation of a facility.

We are hoping that we might be able to schedule a meeting one afternoon this week or sometime early next week to discuss this project in person. Might you take a look at your schedule and check your availability? If you have any questions or need any additional information, please feel free to contact Camille Bryant or myself by phone or email.

Respectfully,



**Joel Lowry**  
Senior Project Manager



2771 Highway 214, Denver City, TX 79323  
C: 432-466-4450

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**Stanley, Curtis D.**

---

**From:** Amber L Groves <ALGroves@paalp.com>  
**Sent:** Tuesday, August 27, 2019 8:51 AM  
**To:** Stanley, Curtis D.  
**Subject:** FW: 1RP-5024 - Plains Moore Sweet Historical - Alternative Sampling Plan  
**Attachments:** ApprovedSamplingPlan1RP-5024.pdf

Here is the approval of the alternative sampling plan

---

**From:** Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>  
**Sent:** Friday, November 2, 2018 5:22 PM  
**To:** Conder, Zachary <ZConder@trcsolutions.com>  
**Cc:** Camille J Bryant <CJBryant@paalp.com>; Amber L Groves <ALGroves@paalp.com>; rmann@slo.state.nm.us  
**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Alternative Sampling Plan [External]

Dear Mr. Conder:

Please clarify if any field data is available for chlorides as previously discussed (meeting OCD Hobbs, Plains, and TRC on September 4, 2018 at the OCD Hobbs office).

NMOCD approves the alternative remediation sampling plan submitted for 1RP-5024 with the following requirement:

- For the < 8 feet BGS excavation area, if discolored areas are encountered please collect a discrete soil samples for those discolored areas specifically.

Thanks,  
 Christina Hernandez  
 EMNRD-OCD  
 Environmental Specialist  
 1625 N. French Drive  
 Hobbs, NM 88240  
 575-393-6161 x111  
[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

---

**From:** Conder, Zachary <[ZConder@trcsolutions.com](mailto:ZConder@trcsolutions.com)>  
**Sent:** Tuesday, October 23, 2018 1:38 PM  
**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>  
**Cc:** [cjbryant@paalp.com](mailto:cjbryant@paalp.com); Amber L Groves ([ALGroves@paalp.com](mailto:ALGroves@paalp.com)) <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>; [rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)  
**Subject:** [EXT] 1RP-5024 - Plains Moore Sweet Historical - Alternative Sampling Plan



Ms. Yu and Ms. Hernandez,

On behalf of Plains Marketing, LP, TRC proposes the following alternative sampling plan for the Moore Sweet Historical Release Site. TRC proposes the collection of discrete soil samples utilizing mechanical equipment from the sidewalls of the excavated area in each cardinal direction and base of the excavated areas for depths greater than 8 feet below ground surface (BGS). In areas where the excavation is less than 8 feet BGS, TRC proposes the collection of composite method soil samples from the base of the excavated areas representative of every 600 square feet and composite method sidewall soil samples in each cardinal direction. The collected soil samples will be submitted to the laboratory for analysis of TPH and Chloride concentrations. Please find attached the soil chemistry table and site sample location map for your convenience.

Respectfully,

**Zachary Conder**  
Field Operations Manager



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

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---

**From:** Lowry, Joel  
**Sent:** Tuesday, October 23, 2018 2:25 PM  
**To:** Conder, Zachary <[ZConder@trcsolutions.com](mailto:ZConder@trcsolutions.com)>  
**Subject:** FW: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

---

**From:** Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]  
**Sent:** Tuesday, September 4, 2018 1:14 PM  
**To:** Lowry, Joel <[JLowry@trcsolutions.com](mailto:JLowry@trcsolutions.com)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>  
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**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Mr. Lowry et al.:

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Like approval from NMSLO required. NMSLO may have additional concerns or stipulations.

Thanks,  
Olivia



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**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Good morning Mr. Lowry:

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Olivia

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**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

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Joel Lowry

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**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

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Thanks,  
Olivia

---

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**Sent:** Monday, August 20, 2018 2:52 PM



**To:** Yu, Olivia, EMNRD <[Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)>; Hernandez, Christina, EMNRD <[Christina.Hernandez@state.nm.us](mailto:Christina.Hernandez@state.nm.us)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>  
**Cc:** Camille J Bryant <[CJBryant@paalp.com](mailto:CJBryant@paalp.com)>; Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>  
**Subject:** 1RP-5024 - Plains Moore Sweet Historical - Initial Investigation Summary and Proposed Remediation Workplan

Please find attached the *Initial Investigation Summary and Proposed Remediation Workplan* that has been prepared for Plains' Moore Sweet Historical environmental remediation Site. The Site is located in Unit Letters "A&H", Section 13, Township 11 South, Range 32 East in Lea County, New Mexico on land administered by the New Mexico State Land Office. The Initial C-141 indicated that historical soil impacts were discovered during the reclamation of a facility.

We are hoping that we might be able to schedule a meeting one afternoon this week or sometime early next week to discuss this project in person. Might you take a look at your schedule and check your availability? If you have any questions or need any additional information, please feel free to contact Camille Bryant or myself by phone or email.

Respectfully,

**Joel Lowry**  
Senior Project Manager



2771 Highway 214, Denver City, TX 79323  
C: 432-466-4450

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**Stanley, Curtis D.**

**From:** Amber L Groves <ALGroves@paalp.com>  
**Sent:** Monday, January 20, 2020 9:52 AM  
**To:** Stanley, Curtis D.  
**Subject:** [EXTERNAL] FW: [EXT] FW: Urgent!! 1RP-5024 Plains Marketing Moore Sweet Variance Request

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

**From:** Mann, Ryan <rmann@slo.state.nm.us>  
**Sent:** Thursday, November 14, 2019 4:02 PM  
**To:** 'Billings, Bradford, EMNRD' <Bradford.Billings@state.nm.us>; Amber L Groves <ALGroves@paalp.com>  
**Subject:** RE: [EXT] FW: Urgent!! 1RP-5024 Plains Marketing Moore Sweet Variance Request [External]

Ms. Groves,

NMSLO agrees with NMOCD regarding the variance. Please inform if this plan changes.

**Ryan Mann**

*Remediation Specialist*  
*Surface Resources*  
 Office: (575)392-3697  
 Cell: (505)699-1989  
 New Mexico State Land Office  
 914 N. Linam Street  
 Hobbs, NM 88240  
[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)  
[nmstatelands.org](http://nmstatelands.org)



.....  
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---

**From:** Billings, Bradford, EMNRD [<mailto:Bradford.Billings@state.nm.us>]  
**Sent:** Friday, September 20, 2019 9:45 AM  
**To:** Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>; Mann, Ryan <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>  
**Subject:** RE: [EXT] FW: Urgent!! 1RP-5024 Plains Marketing Moore Sweet Variance Request

9/20/2019

Amber Groves – PAALP

Re: 1RP-5024

As per your request for Variance on liner usage for placement in excavation, the following:

As outlined in your request and with additional clarification as relayed to OCD, including the possibility of additional horizontal definition and soil removal for/in excavation is hereby approved. Please indicate in Closure report and additional work and data. All other aspects of Rule 29 apply.

Please be mindful of any additional needs the State Land Office may have for this location and your efforts.

Thank you for your time and patience.

Yours

Bradford Billings  
EMNRD/OCD  
Santa Fe

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

---

**From:** Amber L Groves  
**Sent:** Friday, September 20, 2019 8:34 AM  
**To:** Billings, Bradford, EMNRD ; 'Mann, Ryan'  
**Subject:** [EXT] FW: Urgent!! 1RP-5024 Plains Marketing Moore Sweet Variance Request

Bradford,

Here is the text that I sent this morning and I will forward the e-mail that I was attempting to attach with the alternative sampling plan next.



Thank you,

Amber

---

**From:** Amber L Groves

**Sent:** Friday, September 20, 2019 9:15 AM

**To:** 'Billings, Bradford, EMNRD' <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>; 'Mann, Ryan' <[rmann@slo.state.nm.us](mailto:rmann@slo.state.nm.us)>

**Subject:** FW: Urgent!! 1RP-5024 Plains Marketing Moore Sweet Variance Request [External]

Good Morning, Bradford,

Per our conversation yesterday, Plains will ensure that the Moore Sweet location under 1RP-5024 is horizontally sampled utilizing the attached approved alternative sampling plan. The proposed 20 mil polyurethane liner, will encompass the entire area as characterized by TT-1 until horizontal samples indicate that TPH, BTEX and Chloride levels are below current NMOCD standards. Please feel free to give me a call should you have any questions.

Thank you,

Amber L. Groves  
Remediation Coordinator  
Plains All American  
3112 W. US Hwy 82  
Lovington, NM 88260  
575-200-5517

---

**From:** Billings, Bradford, EMNRD <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>

**Sent:** Wednesday, September 18, 2019 5:34 PM

**To:** Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Subject:** RE: 1RP-5024 Plains Marketing Moore Sweet Variance Request [External]

Hi Amber,

I know there are others for Plains, yet to be resolved, but I will talk with you tomorrow about this one. Likely okay, but a few questions. Hope you are doing well!

Bradford

---

**From:** Amber L Groves <[ALGroves@paalp.com](mailto:ALGroves@paalp.com)>

**Sent:** Wednesday, September 18, 2019 9:12 AM

**To:** EMNRD-OCD-District1spills <[EMNRD-OCD-District1spills@state.nm.us](mailto:EMNRD-OCD-District1spills@state.nm.us)>

**Cc:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>

**Subject:** [EXT] 1RP-5024 Plains Marketing Moore Sweet Variance Request

Good Morning,

Please find attached a variance request for 1RP-5024 Plains Marketing Moore Sweet Site. Please feel free to give me a call at (575)200-5517 should you have any questions.

Thank you,



Amber L. Groves  
Remediation Coordinator  
Plains All American  
3112 W. US Hwy 82  
Lovington, NM 88260  
575-200-5517

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## Appendix B

### Photo Documentation





## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 1

Date:  
October 17, 2018

Direction:  
Looking east

Description:  
Initial excavation  
activities at south  
end of impacted  
area.







## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 2

**Date:**  
September 27,  
2019

**Direction:**  
Looking northeast

**Description:**  
General phot of  
main excavation  
following sampling  
event.

WGS84  $\pm 20$ ft 33.36917, -103.66289  $\Delta$  ft 4323  $\triangle$  °, T NE21







## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 3

Date:  
October 21, 2019

Direction:  
Looking northeast

Description:  
Excavation  
activities in  
progress in area  
represented by  
Sample #5 @ 17'

WGS84 33.36152, -103.60322  $\Delta$  ft 4324 °, T NE36  
±22948ft



21Oct19 11:42 Ad-hoc  
Crossroads, NM 88114, United States © 21-Oct-19 11:42:42





## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

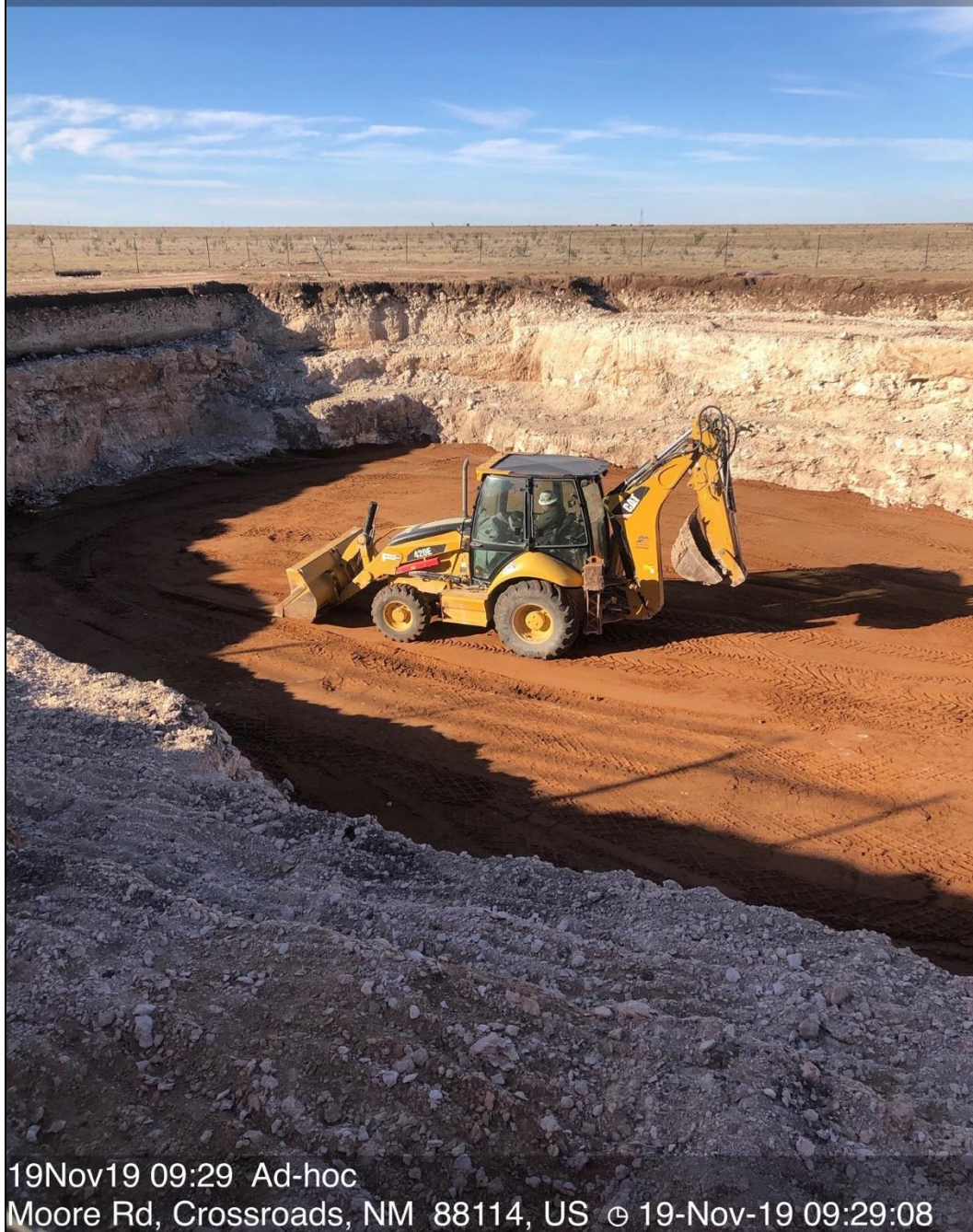
### Photograph No. 4

Date:  
November 19, 2019

Direction:  
Looking southwest

Description:  
Pad sand  
emplaced on floor  
of excavation prior  
to liner installation.

WGS84  $\pm 105\text{ft}$  33.36930, -103.66255  $\Delta^{\text{ft}}$  4265  $\Delta^{\circ}$  T SW247



19Nov19 09:29 Ad-hoc  
Moore Rd, Crossroads, NM 88114, US © 19-Nov-19 09:29:08





## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 5

Date:  
November 19, 2019

Direction:  
Looking southwest

Description:  
20 mil polyliner  
installed at  
approximately  
fifteen (15) feet  
below ground  
surface.

WGS84  $\pm 53\text{ft}$  33.36942, -103.66259  $\Delta^{\text{ft}}$  4296  $\nabla^{\circ, \text{T}}$  SW242







## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

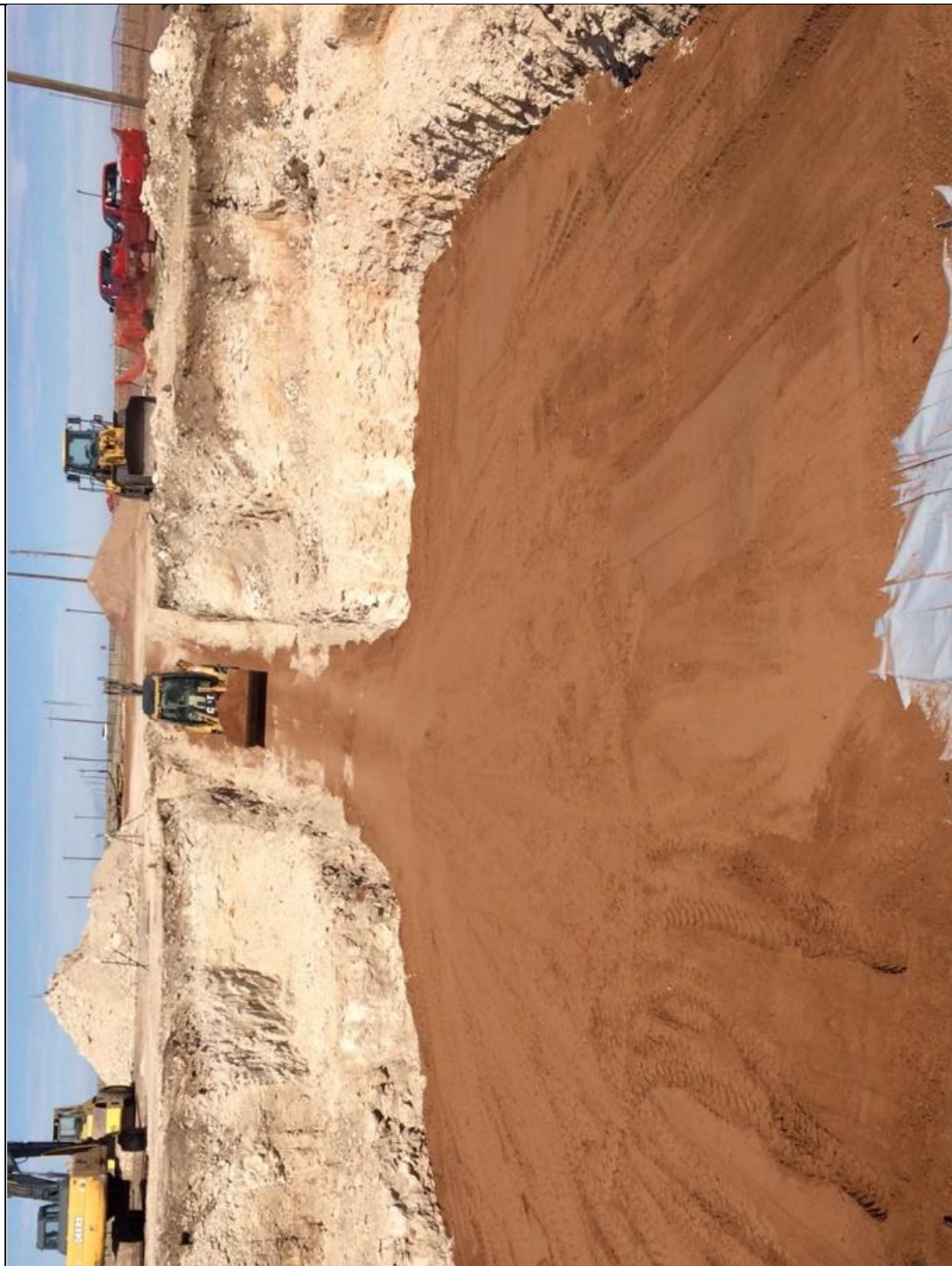
Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 6

**Date:**  
November 21, 2019

**Direction:**  
Looking north

**Description:**  
Pad sand cover  
emplacement over  
liner activities in  
progress.







## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 7

Date:  
November 21, 2019

Direction:  
Looking north

Description:  
Backfill activities  
in progress.







## Photographic Documentation

Client: Plains Marketing, L.P.  
Project Name: Moore Sweet Historical

Prepared by: TRC Environmental Corporation  
Location: Lea County, New Mexico

### Photograph No. 8

Date:  
December 11, 2019

Direction:  
Looking west

Description:  
Backfill activities  
completed.





## Appendix C

### Depth to Groundwater Information





## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

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

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




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

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

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth	Well	Depth	Water	Column
		L	LE	2	2	13	11S	32E										
<a href="#">L 06273</a>		L	LE								624230	3693254*	256		150		60	90
<a href="#">L 01640 POD1</a>		L	LE				13	11S	32E		623643	3692636*	873		120			
<a href="#">L 05741</a>		L	LE			4	12	11S	32E		624024	3693853*	874		152			
<a href="#">L 12006 POD2</a>		L	LE	4	1	1	18	11S	33E		625386	3692537	1115		155		60	95
<a href="#">L 03762</a>	R	L	LE	3	3	3	18	11S	33E		624546	3691950*	1124		120		58	62
<a href="#">L 03762 POD2</a>		L	LE	3	3	3	18	11S	33E		624546	3691950*	1124		122		58	64
<a href="#">L 03765 S</a>		L	LE	3	1	4	18	11S	33E		625334	3692360*	1167		120		51	69
<a href="#">L 10817</a>		L	LE			3	4	07	11S	33E	625418	3693669*	1180		125		60	65
<a href="#">L 09506</a>		L	LE			1	4	18	11S	33E	625435	3692461*	1195		120		50	70
<a href="#">L 10794</a>		L	LE	3	3	2	12	11S	32E		623711	3694356*	1464		60		50	10
<a href="#">L 06588</a>		L	LE	1	1	1	13	11S	32E		622924	3693339*	1504		120		65	55
<a href="#">L 03765</a>		L	LE	3	2	4	18	11S	33E		625737	3692363	1507		120		50	70
<a href="#">L 03765</a>	R	L	LE	3	2	4	18	11S	33E		625737	3692363	1507		120		50	70
<a href="#">L 03765 POD3</a>		L	LE	3	2	4	18	11S	33E		625737	3692363	1507		160		83	77
<a href="#">L 01642 POD1</a>		L	LE	3	3	3	12	11S	32E		622918	3693541*	1559		132			
<a href="#">L 02043</a>		L	LE	1	1	2	19	11S	33E		625346	3691755*	1614		140		60	80
<a href="#">L 02174</a>		L	LE			3	3	13	11S	32E	623040	3692033*	1710		102		92	10
<a href="#">L 09615</a>		L	LE			2	1	24	11S	32E	623447	3691635*	1721		125		70	55
<a href="#">L 06362</a>		L	LE			3	1	17	11S	33E	626234	3692870*	1840		95		60	35
<a href="#">L 03990</a>		L	LE	1	2	2	19	11S	33E		625748	3691758*	1875		136		56	80
<a href="#">L 08642</a>		L	LE	4	1	1	24	11S	32E		623144	3691529*	1986		110		64	46
<a href="#">L 01934</a>		L	LE	3	3	2	24	11S	32E		623753	3691136*	2036		115		65	50
<a href="#">L 09615 S</a>		L	LE			4	1	24	11S	32E	623452	3691232*	2065		124		68	56
<a href="#">L 09615 S2</a>		L	LE	2	1	4	24	11S	32E		623958	3690933*	2178		141		65	76
<a href="#">L 00659</a>		L	LE				19	11S	33E		625271	3691044*	2199		133		61	72
<a href="#">L 09615 S3</a>		L	LE	1	1	4	24	11S	32E		623758	3690933*	2228		150		70	80
<a href="#">L 00215 POD6</a>		L	LE	4	1	4	24	11S	32E		623958	3690733*	2374		128		115	13
<a href="#">L 03989</a>		L	LE	2	1	4	19	11S	33E		625558	3690950*	2410		124		65	59
<a href="#">L 06249</a>		L	LE			2	3	08	11S	33E	626618	3694083*	2436		105		48	57
<a href="#">L 00215 POD4</a>		L	LE			4	24	11S	32E		624065	3690633*	2456		153		70	83
<a href="#">L 09754</a>		L	LE			4	24	11S	32E		624065	3690633*	2456		122			
<a href="#">L 10790</a>		L	LE			2	23	11S	32E		622447	3691419*	2557		113		52	61
<a href="#">L 10567</a>		L	LE	1	1	4	08	11S	33E		626919	3694188*	2754		130		58	72



<a href="#">L 04220</a>	L	LE	3	4	19	11S	33E	625465	3690449*		2823	100	54	46	
<a href="#">L 09080</a>	L	LE	3	3	4	19	11S	33E	625364	3690348*		2882	119	69	50
<a href="#">L 00278</a>	L	LE	2	1	2	25	11S	32E	623968	3690129*		2968	135		

Average Depth to Water: **63 feet**

Minimum Depth: **48 feet**

Maximum Depth: **115 feet**

**Record Count:** 36

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

**Easting (X):** 624403.72

**Northing (Y):** 3693065.61

**Radius:** 3000

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

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.

4/20/18 8:19 AM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER





**STATE OF NEW MEXICO**  
OFFICE OF THE STATE ENGINEER  
ROSWELL

**Tom Blaine, P.E.**  
State Engineer

**DISTRICT II**  
1900 West Second St.  
Roswell, New Mexico 88201  
Phone: (575) 622-6521  
Fax: (575) 623-8559

November 29, 2017

Plains Marketing  
c/o Lee Peterson  
P.O. Box 30699  
Amarillo, Texas 79120

RE: *Well Plugging Plan of Operations* for L-6588 E, Plains Marketing, Lea County, New Mexico

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above described project.

The proposed method of operations for the subject well has been modified according to our phone conversation on November 29 as described below and is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted August 31, 2005 by the State Engineer subject to the following:

*Plugging operations shall also be conducted in accordance with NMED, NMOCD, or other State or Federal agencies having oversight for the above described project.*

*Clean gravel may be applied from 120 feet to 40 feet below ground surface (bgs). Bentonite pellets may then be applied from 40 feet to 23 feet bgs, followed by a Portland grout seal from 23 feet to ground surface.*

*Should a surface pad not remain in place and an annular seal is present, a shallow excavation which extends approximately 1 foot beyond the outer diameter (OD) of the casing and approximately 1 foot deep shall be dug. Apply the grout seal from 23 feet to 1 foot bgs, allowing the grout to overflow the casing to create a cap that extends approximately 2 feet beyond the OD of the casing to mitigate potential vertical migration of fluids at well head.*

*If no subsurface annular seal is noted around the OD of the casing, excavate approximately 3 feet deep around the casing and cut the casing at that depth. Apply the grout seal from 23 feet to 3 feet bgs, allowing the grout to overflow the casing to create a cap that extends approximately 2 feet beyond the OD of the casing.*



*The grout water ratio should not exceed 6 gallons of water per 94 lb sack of Portland cement.*

Sincerely,

A handwritten signature in black ink, appearing to read "C. Goetz", is written over a horizontal line.

Catherine Goetz, P.G., C.P.G.  
Engineer Specialist Supervisor  
District II Office of the State Engineer  
cc Santa Fe





## WELL PLUGGING PLAN OF OPERATIONS



**NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.**

**I. FILING FEE:** There is no filing fee for this form.

**II. GENERAL / WELL OWNERSHIP:**

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: L-6588 (E)

Name of well owner: Plains Marketing

Mailing address: 414 ARco Road

City: Hobbs State: New Mexico Zip code: 88240-8795

Phone number: 575-393-5611 E-mail: plainsallamerica.com

**III. WELL DRILLER INFORMATION:**

Well Driller contracted to provide plugging services: Peterson Drilling & Testing, Inc. %Lee Peterson

New Mexico Well Driller License No.: WD-1222 Expiration Date: 2-28-2018

**IV. WELL INFORMATION:**

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

- 1) GPS Well Location: Latitude: 33 deg, 22 min, 12.6 sec  
Longitude: 103 deg, 39 min, 46.0 sec, NAD 83
- 2) Reason(s) for plugging well:  

\* Not in use any longer - property owner wants it removed
- 3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.
- 4) Does the well tap brackish, saline, or otherwise poor quality water? No If yes, provide additional detail, including analytical results and/or laboratory report(s):
- 5) Static water level: 65 feet below land surface / feet above land surface (circle one)
- 6) Depth of the well: 120 feet



- 7) Inside diameter of innermost casing: 7 inches.
- 8) Casing material: Steel
- 9) The well was constructed with:  
☐ an open-hole production interval, state the open interval: \_\_\_\_\_  
☒ a well screen or perforated pipe, state the screened interval(s): 65' to 120'
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A
- 11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? \_\_\_\_\_ If yes, please describe:
- 12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

#### **V. DESCRIPTION OF PLANNED WELL PLUGGING:**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:
- 2) Will well head be cut-off below land surface after plugging? Yes

#### **VI. PLUGGING AND SEALING MATERIALS:**

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: \_\_\_\_\_
- 4) Type of Cement proposed: \_\_\_\_\_
- 5) Proposed cement grout mix: \_\_\_\_\_ gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: \_\_\_\_\_ batch-mixed and delivered to the site  
 \_\_\_\_\_ mixed on site



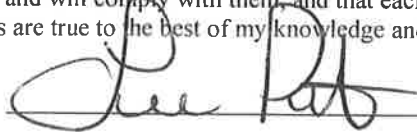
- 7) Grout additives requested, and percent by dry weight relative to cement:

- 8) Additional notes and calculations:

**VII. ADDITIONAL INFORMATION:** List additional information below, or on separate sheet(s):

**VIII. SIGNATURE:**

I, Lee Peterson, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.



Signature of Applicant

11/8/17  
Date

**IX. ACTION OF THE STATE ENGINEER:**

This Well Plugging Plan of Operations is:


☒ Approved subject to the attached conditions.  
☐ Not approved, for the reasons provided on the attached letter.

Witness my hand and official seal this 29<sup>th</sup> day of November, 2017



Tom Blaine P.E., New Mexico State Engineer

By:

  
 For Andy Morley  
 District II Manager

Well Plugging Plan  
 Version: August 11, 2015  
 Page 3 of 5



**TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.**

	<b>Interval 1 – deepest</b>	<b>Interval 2</b>	<b>Interval 3 – most shallow</b>
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			



**interval.**

[illegible]





# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: L-6588 (E)

Well owner: Plains Marketing

Phone No.: \_\_\_\_\_

Mailing address: 414 Arco Road

City: Hobbs State: New Mexico Zip code: 88240-8795

## II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Peterson Drilling & Testing, Inc % Lee Peterson
- 2) New Mexico Well Driller License No.: WD-1222 Expiration Date: 2-28-2018
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): \_\_\_\_\_  
Not in use any loner - proterty owner wats it removed
- 4) Date well plugging began: January 17, 2018 Date well plugging concluded: January 17, 2018
- 5) GPS Well Location: Latitude: 33 deg, 22 min, 12.6 sec  
Longitude: 103 deg, 39 min, 46.0 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: \_\_\_\_\_ ft below ground level (bgl),  
by the following manner: \_\_\_\_\_
- 7) Static water level measured at initiation of plugging: 50 ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 120
- 9) Were all plugging activities consistent with an approved plugging plan? yes If not, please describe  
differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):



- 10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

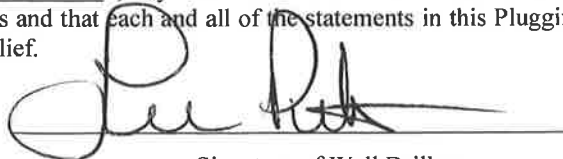
For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
25'	Portland Grout Seal With 5% Bentonite	50.01	33.722	Tremie	
	Bentonite Chips	25.0	24.925	Tremie	
50'					
75'	Pea Gravel	119.0	117.294	Tremie	
100'					
125'	Total Depth 120'				

MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
cubic yards x	201.97	= gallons

### III. SIGNATURE:

I, LEE PETERSON, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.



Signature of Well Driller

2/1/18

Date



## Appendix D

### Field Notes



MOORE SWEET HISTORICAL

10/17-18/2019

Chloride Field Test Screening (HACH Drators)

MW-S1C-A	< 124 ppm	✓
MSW-F1C @ 7'	< 124 ppm	✓
MS-F2 @ 13'	< 124 ppm	✓
ME-S1C-A	280 ppm	
ME-F1C #1 @ 7'	< 124 ppm	✓
ME-F1C #2 @ 7'	< 124 ppm	✓
ME-S2-A	212 ppm	✓
SAMPLE #5 @ 17'	< 128 ppm	✓
MS3 #3A	< 128 ppm	✓

10/22/2019

M. RAN# ES3-A < 128 ppm ✓



## Appendix E

# Laboratory Analytical Reports





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

---

October 11, 2018

JOEL LOWRY

PLAINS ALL AMERICAN PIPELINE

505 NORTH BIG SPRINGS ST STE. 600

MIDLAND, TX 79701

RE: MOORE SWEET

Enclosed are the results of analyses for samples received by the laboratory on 10/09/18 15:20.

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,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 10/09/2018  
 Reported: 10/11/2018  
 Project Name: MOORE SWEET  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 10/09/2018  
 Sampling Type: Solid  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NTT 1A @ 8' (H802875-01)**

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	10/11/2018	ND	200	100	200	0.492	
<b>DRO &gt;C10-C28*</b>	<b>42.7</b>	10.0	10/11/2018	ND	194	97.0	200	0.0124	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane 92.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.0 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

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

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

Celey D. Keene, Lab Director/Quality Manager





**CARDINAL**  
Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]





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

November 15, 2018

ZACH CONDER

TRC

10 DESTA DR. SUITE 150 E

MIDLAND, TX 79705

RE: MOORE SWEET

Enclosed are the results of analyses for samples received by the laboratory on 11/09/18 16:30.

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,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: E TT COMP 1 @ 5' (H803270-01)**

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>512</b>	16.0	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
<b>DRO &gt;C10-C28*</b>	<b>185</b>	10.0	11/12/2018	ND	196	98.1	200	3.77	
<b>EXT DRO &gt;C28-C36</b>	<b>32.1</b>	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	91.2 %	41-142							
Surrogate: 1-Chlorooctadecane	102 %	37.6-147							

**Sample ID: E TT COMP 2 @ 5' (H803270-02)**

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>464</b>	16.0	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
<b>DRO &gt;C10-C28*</b>	<b>15.2</b>	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	<10.0	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	78.8 %	41-142							
Surrogate: 1-Chlorooctadecane	82.7 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: E TT - NW @ 2.5' (H803270-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
DRO >C10-C28*	118	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	19.8	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	84.2 %	41-142							
Surrogate: 1-Chlorooctadecane	97.0 %	37.6-147							

**Sample ID: W TT COMP 2 @ 4' (H803270-04)**

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	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
DRO >C10-C28*	32.7	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	11.6	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	75.9 %	41-142							
Surrogate: 1-Chlorooctadecane	80.2 %	37.6-147							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: W TT- NW @ 2' (H803270-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
DRO >C10-C28*	106	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	70.4	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	91.2 %	41-142							
Surrogate: 1-Chlorooctadecane	100 %	37.6-147							

**Sample ID: W TT COMP 1 @ 4' (H803270-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	11/15/2018	ND	416	104	400	3.92	
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	11/12/2018	ND	194	97.2	200	4.25	
DRO >C10-C28*	33.9	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	12.3	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	87.3 %	41-142							
Surrogate: 1-Chlorooctadecane	93.7 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: W TT - SW @ 2' (H803270-07)**

Chloride, SM4500CI-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	11/15/2018	ND	400	100	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	11/12/2018	ND	194	97.2	200	4.25	
DRO >C10-C28*	149	10.0	11/12/2018	ND	196	98.1	200	3.77	
EXT DRO >C28-C36	77.0	10.0	11/12/2018	ND					
Surrogate: 1-Chlorooctane	83.6 %	41-142							
Surrogate: 1-Chlorooctadecane	95.0 %	37.6-147							

**Sample ID: TT 3 COMP @ 3' (H803270-08)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	<10.0	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	<10.0	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	76.7 %	41-142							
Surrogate: 1-Chlorooctadecane	81.5 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TT 3 - NW @ 1.5' (H803270-09)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
<b>DRO &gt;C10-C28*</b>	<b>25.9</b>	10.0	11/13/2018	ND	205	103	200	0.351	
<b>EXT DRO &gt;C28-C36</b>	<b>12.1</b>	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	86.3 %	41-142							
Surrogate: 1-Chlorooctadecane	92.7 %	37.6-147							

**Sample ID: TT 3 - SW @ 1.5' (H803270-10)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	<10.0	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	<10.0	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	77.0 %	41-142							
Surrogate: 1-Chlorooctadecane	82.6 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TT 3 - WW @ 1.5' (H803270-11)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	<10.0	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	<10.0	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	88.2 %	41-142							
Surrogate: 1-Chlorooctadecane	95.3 %	37.6-147							

**Sample ID: TT 3 - EW @ 1.5' (H803270-12)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	<10.0	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	13.8	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	77.8 %	41-142							
Surrogate: 1-Chlorooctadecane	81.8 %	37.6-147							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TT 2 @ 2' (H803270-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	348	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	171	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	73.7 %	41-142							
Surrogate: 1-Chlorooctadecane	89.1 %	37.6-147							

**Sample ID: TT 2- WW @ 1' (H803270-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	249	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	147	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	85.9 %	41-142							
Surrogate: 1-Chlorooctadecane	99.0 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TT 2- NW @ 1' (H803270-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	70.8	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	34.6	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	83.2 %	41-142							
Surrogate: 1-Chlorooctadecane	90.6 %	37.6-147							

**Sample ID: TT 2- EW @ 1' (H803270-16)**

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	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	249	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	108	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	91.4 %	41-142							
Surrogate: 1-Chlorooctadecane	105 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: TT 2- SW @ 1' (H803270-17)**

Chloride, SM4500Cl-B		mg/ kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	49.7	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	39.5	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	88.1 %	41-142							
Surrogate: 1-Chlorooctadecane	94.4 %	37.6-147							

**Sample ID: TT 1 @ 14' (H803270-18)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	11/15/2018	ND	400	100	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*	69.4	10.0	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	1770	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	242	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	103 %	41-142							
Surrogate: 1-Chlorooctadecane	143 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S TT @ 12' (H803270-19)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/15/2018	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	53.9	10.0	11/13/2018	ND	196	97.8	200	1.82		
DRO >C10-C28*	2410	10.0	11/13/2018	ND	205	103	200	0.351		
EXT DRO >C28-C36	328	10.0	11/13/2018	ND						
Surrogate: 1-Chlorooctane										
	112 %	41-142								
Surrogate: 1-Chlorooctadecane										
	167 %	37.6-147								

**Sample ID: W TT- WW @ 2' (H803270-20)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	11/15/2018	ND	400	100	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	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	33.0	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	28.7	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	76.0 %	41-142							
Surrogate: 1-Chlorooctadecane	79.8 %	37.6-147							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S TT- EW @ 6' (H803270-21)**

Chloride, SM4500Cl-B		mg/ kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	11/15/2018	ND	400	100	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*	32.0	10.0	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	2110	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	323	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	87.6 %	41-142							
Surrogate: 1-Chlorooctadecane	120 %	37.6-147							

**Sample ID: S TT- NW @ 6' (H803270-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	11/15/2018	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	101	10.0	11/13/2018	ND	196	97.8	200	1.82		
DRO >C10-C28*	2950	10.0	11/13/2018	ND	205	103	200	0.351		
EXT DRO >C28-C36	373	10.0	11/13/2018	ND						
Surrogate: 1-Chlorooctane	105 %	41-142								

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/09/2018  
Reported: 11/15/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL

Sampling Date: 11/09/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S TT- SW @ 6' (H803270-23)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	11/15/2018	ND	400	100	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*	31.8	10.0	11/13/2018	ND	196	97.8	200	1.82	
DRO >C10-C28*	1050	10.0	11/13/2018	ND	205	103	200	0.351	
EXT DRO >C28-C36	161	10.0	11/13/2018	ND					
Surrogate: 1-Chlorooctane	97.7 %	41-142							
Surrogate: 1-Chlorooctadecane	121 %	37.6-147							

**Sample ID: S TT- WW @ 6' (H803270-24)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	11/15/2018	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	85.8	10.0	11/13/2018	ND	196	97.8	200	1.82		
DRO >C10-C28*	3520	10.0	11/13/2018	ND	205	103	200	0.351		
EXT DRO >C28-C36	548	10.0	11/13/2018	ND						
Surrogate: 1-Chlorooctane	105 %	41-142								
Surrogate: 1-Chlorooctadecane	205 %	37.6-147								

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

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

Cardinal Laboratories

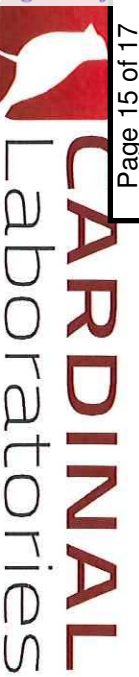
\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager





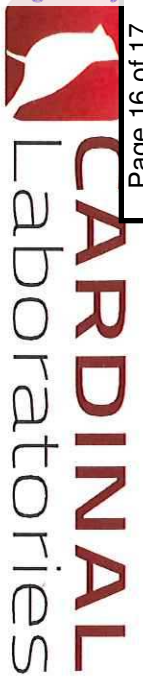
# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

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

[illegible]





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

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

[illegible]





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

---

November 16, 2018

ZACH CONDER

TRC

10 DESTA DR. SUITE 150 E

MIDLAND, TX 79705

RE: MOORE SWEET

Enclosed are the results of analyses for samples received by the laboratory on 11/14/18 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/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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/14/2018  
Reported: 11/16/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL - LEA COUNTY

Sampling Date: 11/13/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: E TT COMP 3 @ 6' (H803320-01)**

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>320</b>	16.0	11/15/2018	ND	432	108	400	3.77	
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	11/15/2018	ND	214	107	200	1.99	
DRO >C10-C28*	<10.0	10.0	11/15/2018	ND	227	113	200	0.673	
EXT DRO >C28-C36	<10.0	10.0	11/15/2018	ND					
Surrogate: 1-Chlorooctane	106 %	41-142							
Surrogate: 1-Chlorooctadecane	101 %	37.6-147							

**Sample ID: E TT SW @ 2.5' (H803320-02)**

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>160</b>	16.0	11/15/2018	ND	432	108	400	3.77	
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	11/15/2018	ND	214	107	200	1.99	
<b>DRO &gt;C10-C28*</b>	<b>13.2</b>	10.0	11/15/2018	ND	227	113	200	0.673	
EXT DRO >C28-C36	<10.0	10.0	11/15/2018	ND					
Surrogate: 1-Chlorooctane	111 %	41-142							
Surrogate: 1-Chlorooctadecane	110 %	37.6-147							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 11/14/2018  
Reported: 11/16/2018  
Project Name: MOORE SWEET  
Project Number: NONE GIVEN  
Project Location: PLAINS PL - LEA COUNTY

Sampling Date: 11/13/2018  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: E TT SW-2 @ 6" (H803320-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	11/15/2018	ND	432	108	400	3.77	
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	11/15/2018	ND	214	107	200	1.99	
DRO >C10-C28*	15.6	10.0	11/15/2018	ND	227	113	200	0.673	
EXT DRO >C28-C36	<10.0	10.0	11/15/2018	ND					
Surrogate: 1-Chlorooctane	109 %	41-142							
Surrogate: 1-Chlorooctadecane	105 %	37.6-147							

**Sample ID: E TT EW @ 2.5' (H803320-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	11/15/2018	ND	432	108	400	3.77	
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	11/15/2018	ND	214	107	200	1.99	
DRO >C10-C28*	<10.0	10.0	11/15/2018	ND	227	113	200	0.673	
EXT DRO >C28-C36	<10.0	10.0	11/15/2018	ND					
Surrogate: 1-Chlorooctane	106 %	41-142							
Surrogate: 1-Chlorooctadecane	100 %	37.6-147							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

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

Cardinal Laboratories

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

Celey D. Keene, Lab Director/Quality Manager







# Analytical Report 608722

for  
TRC Solutions, Inc

Project Manager: Zach Conder  
Moore Sweet

27-DEC-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)  
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)





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27-DEC-18

Project Manager: **Zach Conder**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **608722**  
**Moore Sweet**  
Project Address: Lea County, NM

**Zach Conder:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 608722. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 608722 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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



**Sample Cross Reference 608722****TRC Solutions, Inc, Midland, TX**

Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT-1 @ 15'	S	12-12-18 08:00	15 ft	608722-001
TT-1 @ 16'	S	12-12-18 08:10	15 ft	608722-002
TT-1 @ 17'	S	12-12-18 08:20	17 ft	608722-003
TT-1 @ 18'	S	12-12-18 08:30	18 ft	608722-004
TT-1 @ 19'	S	12-12-18 08:40	19 ft	608722-005
TT-1 @ 20'	S	12-12-18 08:50	20 ft	608722-006
TT-1 @ 21'	S	12-12-18 09:00	21 ft	608722-007
TT-1 @ 22'	S	12-12-18 09:10	22 ft	608722-008
TT-1 @ 23'	S	12-12-18 09:20	23 ft	608722-009
TT-1 @ 24'	S	12-12-18 09:30	24 ft	608722-010
TT-1 @ 25 '	S	12-12-18 09:40	25 ft	608722-011



**CASE NARRATIVE****Client Name: TRC Solutions, Inc****Project Name: Moore Sweet**Project ID:  
Work Order Number(s): 608722Report Date: 27-DEC-18  
Date Received: 12/14/2018

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3073258 BTEX by EPA 8021

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

Batch: LBA-3074024 BTEX by EPA 8021

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 608722-005,608722-004.

Batch: LBA-3074046 BTEX by EPA 8021

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 608722-008,608722-007.





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @15'

Matrix: Soil

Sample Depth: 15 ft

Lab Sample Id: 608722-001

Date Collected: 12.12.18 08.00

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073168

Date Prep: 12.17.18 09.00

Prep seq: 7668162

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	23.0	4.95	0.850	mg/kg	12.17.18 11:52		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073493

Date Prep: 12.19.18 18.00

Prep seq: 7668405

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	490	15.0	7.99	mg/kg	12.20.18 00:44		1
Diesel Range Organics (DRO)	C10C28DRO	1820	15.0	8.11	mg/kg	12.20.18 00:44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	143	15.0	8.11	mg/kg	12.20.18 00:44		1
Total TPH	PHC635	2453		7.99	mg/kg	12.20.18 00:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	124	70 - 135	%		
o-Terphenyl	111	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3073258

Date Prep: 12.17.18 08.45

Prep seq: 7668232

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0964	0.501	0.0964	mg/kg	12.17.18 17:36	U	251
Toluene	108-88-3	0.934	0.501	0.114	mg/kg	12.17.18 17:36		251
Ethylbenzene	100-41-4	0.205	0.501	0.141	mg/kg	12.17.18 17:36	J	251
m_p-Xylenes	179601-23-1	<0.254	1.00	0.254	mg/kg	12.17.18 17:36	U	251
o-Xylene	95-47-6	1.69	0.501	0.0863	mg/kg	12.17.18 17:36		251
Xylenes, Total	1330-20-7	1.69		0.0863	mg/kg	12.17.18 17:36		
Total BTEX		2.829		0.0863	mg/kg	12.17.18 17:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 16'

Matrix: Soil

Sample Depth: 15 ft

Lab Sample Id: 608722-002

Date Collected: 12.12.18 08.10

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073168

Date Prep: 12.17.18 09.00

Prep seq: 7668162

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	180	4.95	0.850	mg/kg	12.17.18 12:00		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073493

Date Prep: 12.19.18 18.00

Prep seq: 7668405

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	533	15.0	8.00	mg/kg	12.20.18 01:05		1
Diesel Range Organics (DRO)	C10C28DRO	1660	15.0	8.13	mg/kg	12.20.18 01:05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	118	15.0	8.13	mg/kg	12.20.18 01:05		1
Total TPH	PHC635	2311		8	mg/kg	12.20.18 01:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	113	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3073258

Date Prep: 12.17.18 08.45

Prep seq: 7668232

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0962	0.500	0.0962	mg/kg	12.17.18 17:55	U	250
Toluene	108-88-3	0.983	0.500	0.114	mg/kg	12.17.18 17:55		250
Ethylbenzene	100-41-4	0.225	0.500	0.141	mg/kg	12.17.18 17:55	J	250
m_p-Xylenes	179601-23-1	0.340	1.00	0.254	mg/kg	12.17.18 17:55	J	250
o-Xylene	95-47-6	1.89	0.500	0.0861	mg/kg	12.17.18 17:55		250
Xylenes, Total	1330-20-7	2.23		0.0861	mg/kg	12.17.18 17:55		
Total BTEX		3.438		0.0861	mg/kg	12.17.18 17:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX  
Moore Sweet

Sample Id: TT-1 @ 17'

Matrix: Soil

Sample Depth: 17 ft

Lab Sample Id: 608722-003

Date Collected: 12.12.18 08.20

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073168

Date Prep: 12.17.18 09.00

Prep seq: 7668162

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	34.6	4.96	0.852	mg/kg	12.17.18 12:09		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073493

Date Prep: 12.19.18 18.00

Prep seq: 7668405

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	725	15.0	7.99	mg/kg	12.20.18 01:27		1
Diesel Range Organics (DRO)	C10C28DRO	2150	15.0	8.12	mg/kg	12.20.18 01:27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	150	15.0	8.12	mg/kg	12.20.18 01:27		1
Total TPH	PHC635	3025		7.99	mg/kg	12.20.18 01:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	119	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3073258

Date Prep: 12.17.18 08.45

Prep seq: 7668232

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0399	0.200	0.0384	mg/kg	12.17.18 17:17	J	100
Toluene	108-88-3	1.27	0.200	0.0455	mg/kg	12.17.18 17:17		100
Ethylbenzene	100-41-4	0.186	0.200	0.0564	mg/kg	12.17.18 17:17	J	100
m_p-Xylenes	179601-23-1	0.347	0.399	0.101	mg/kg	12.17.18 17:17	J	100
o-Xylene	95-47-6	1.85	0.200	0.0344	mg/kg	12.17.18 17:17		100
Xylenes, Total	1330-20-7	2.197		0.0344	mg/kg	12.17.18 17:17		
Total BTEX		3.6929		0.0344	mg/kg	12.17.18 17:17		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 18'

Matrix: Soil

Sample Depth: 18 ft

Lab Sample Id: 608722-004

Date Collected: 12.12.18 08.30

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073892

Date Prep: 12.21.18 15.00

Prep seq: 7668612

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	460	5.00	0.858	mg/kg	12.21.18 17:34		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	501	15.0	7.99	mg/kg	12.22.18 19:45		1
Diesel Range Organics (DRO)	C10C28DRO	1270	15.0	8.11	mg/kg	12.22.18 19:45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	114	15.0	8.11	mg/kg	12.22.18 19:45		1
Total TPH	PHC635	1885		7.99	mg/kg	12.22.18 19:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	121	70 - 135	%		
o-Terphenyl	119	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074024

Date Prep: 12.26.18 08.15

Prep seq: 7668765

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0849	0.0100	0.00192	mg/kg	12.26.18 15:28		5
Toluene	108-88-3	0.0509	0.0100	0.00228	mg/kg	12.26.18 15:28		5
Ethylbenzene	100-41-4	0.412	0.0100	0.00282	mg/kg	12.26.18 15:28		5
m_p-Xylenes	179601-23-1	0.642	0.0200	0.00507	mg/kg	12.26.18 15:28		5
o-Xylene	95-47-6	1.86	0.0100	0.00172	mg/kg	12.26.18 15:28		5
Xylenes, Total	1330-20-7	2.502		0.00172	mg/kg	12.26.18 15:28		
Total BTEX		3.0498		0.00172	mg/kg	12.26.18 15:28		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	126	70 - 130	%		
4-Bromofluorobenzene	270	70 - 130	%		**





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 19'

Matrix: Soil

Sample Depth: 19 ft

Lab Sample Id: 608722-005

Date Collected: 12.12.18 08.40

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073892

Date Prep: 12.21.18 15.00

Prep seq: 7668612

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	70.4	4.95	0.850	mg/kg	12.21.18 17:56		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	565	15.0	7.99	mg/kg	12.22.18 20:06		1
Diesel Range Organics (DRO)	C10C28DRO	1510	15.0	8.11	mg/kg	12.22.18 20:06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	125	15.0	8.11	mg/kg	12.22.18 20:06		1
Total TPH	PHC635	2200		7.99	mg/kg	12.22.18 20:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	129	70 - 135	%		
o-Terphenyl	125	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074024

Date Prep: 12.26.18 08.15

Prep seq: 7668765

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0379	0.0100	0.00192	mg/kg	12.26.18 15:47		5
Toluene	108-88-3	1.97	0.0100	0.00228	mg/kg	12.26.18 15:47		5
Ethylbenzene	100-41-4	0.306	0.0100	0.00282	mg/kg	12.26.18 15:47		5
m_p-Xylenes	179601-23-1	0.516	0.0200	0.00507	mg/kg	12.26.18 15:47		5
o-Xylene	95-47-6	1.87	0.0100	0.00172	mg/kg	12.26.18 15:47		5
Xylenes, Total	1330-20-7	2.386		0.00172	mg/kg	12.26.18 15:47		
Total BTEX		4.6999		0.00172	mg/kg	12.26.18 15:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	127	70 - 130	%		
4-Bromofluorobenzene	294	70 - 130	%		**





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX  
Moore Sweet

Sample Id: TT-1 @ 20'

Matrix: Soil

Sample Depth: 20 ft

Lab Sample Id: 608722-006

Date Collected: 12.12.18 08.50

Date Received: 12.14.18 11.51

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073892

Date Prep: 12.21.18 15.00

Prep seq: 7668612

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	57.4	4.96	0.852	mg/kg	12.21.18 18:02		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	448	15.0	7.99	mg/kg	12.22.18 20:27		1
Diesel Range Organics (DRO)	C10C28DRO	1230	15.0	8.11	mg/kg	12.22.18 20:27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	97.6	15.0	8.11	mg/kg	12.22.18 20:27		1
Total TPH	PHC635	1775.6		7.99	mg/kg	12.22.18 20:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	125	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074024

Date Prep: 12.26.18 08.15

Prep seq: 7668765

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	12.26.18 15:09	U	1
Toluene	108-88-3	0.00483	0.00200	0.000456	mg/kg	12.26.18 15:09		1
Ethylbenzene	100-41-4	0.0169	0.00200	0.000565	mg/kg	12.26.18 15:09		1
m_p-Xylenes	179601-23-1	0.0512	0.00400	0.00101	mg/kg	12.26.18 15:09		1
o-Xylene	95-47-6	0.0532	0.00200	0.000344	mg/kg	12.26.18 15:09		1
Xylenes, Total	1330-20-7	0.1044		0.000344	mg/kg	12.26.18 15:09		
Total BTEX		0.12613		0.000344	mg/kg	12.26.18 15:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	96	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 21'

Matrix: Soil

Sample Depth: 21 ft

Lab Sample Id: 608722-007

Date Collected: 12.12.18 09.00

Date Received: 12.14.18 11.51

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	454	14.9	7.97	mg/kg	12.22.18 20:48		1
Diesel Range Organics (DRO)	C10C28DRO	1200	14.9	8.10	mg/kg	12.22.18 20:48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	102	14.9	8.10	mg/kg	12.22.18 20:48		1
Total TPH	PHC635	1756		7.97	mg/kg	12.22.18 20:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	122	70 - 135	%		
o-Terphenyl	114	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0101	0.0200	0.00386	mg/kg	12.27.18 01:14	JK	10
Toluene	108-88-3	0.740	0.0200	0.00457	mg/kg	12.27.18 01:14	K	10
Ethylbenzene	100-41-4	0.213	0.0200	0.00566	mg/kg	12.27.18 01:14	K	10
m_p-Xylenes	179601-23-1	0.410	0.0401	0.0102	mg/kg	12.27.18 01:14	K	10
o-Xylene	95-47-6	2.03	0.0200	0.00345	mg/kg	12.27.18 01:14	K	10
Xylenes, Total	1330-20-7	2.44		0.00345	mg/kg	12.27.18 01:14	K	
Total BTEX		3.4031		0.00345	mg/kg	12.27.18 01:14	K	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	127	70 - 130	%		
4-Bromofluorobenzene	198	70 - 130	%		**





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 22'

Matrix: Soil

Sample Depth: 22 ft

Lab Sample Id: 608722-008

Date Collected: 12.12.18 09.10

Date Received: 12.14.18 11.51

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	554	15.0	7.99	mg/kg	12.22.18 21:09		1
Diesel Range Organics (DRO)	C10C28DRO	1470	15.0	8.12	mg/kg	12.22.18 21:09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	132	15.0	8.12	mg/kg	12.22.18 21:09		1
Total TPH	PHC635	2156		7.99	mg/kg	12.22.18 21:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	124	70 - 135	%		
o-Terphenyl	123	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00569	0.00998	0.00192	mg/kg	12.27.18 01:33	JK	5
Toluene	108-88-3	0.610	0.00998	0.00227	mg/kg	12.27.18 01:33	K	5
Ethylbenzene	100-41-4	0.164	0.00998	0.00282	mg/kg	12.27.18 01:33	K	5
m_p-Xylenes	179601-23-1	0.305	0.0200	0.00506	mg/kg	12.27.18 01:33	K	5
o-Xylene	95-47-6	1.43	0.00998	0.00172	mg/kg	12.27.18 01:33	K	5
Xylenes, Total	1330-20-7	1.735		0.00172	mg/kg	12.27.18 01:33	K	
Total BTEX		2.51469		0.00172	mg/kg	12.27.18 01:33	K	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	116	70 - 130	%		
4-Bromofluorobenzene	216	70 - 130	%		**





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 23'

Matrix: Soil

Sample Depth: 23 ft

Lab Sample Id: 608722-009

Date Collected: 12.12.18 09.20

Date Received: 12.14.18 11.51

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	52.9	15.0	7.99	mg/kg	12.22.18 21:30		1
Diesel Range Organics (DRO)	C10C28DRO	492	15.0	8.11	mg/kg	12.22.18 21:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	46.8	15.0	8.11	mg/kg	12.22.18 21:30		1
Total TPH	PHC635	591.7		7.99	mg/kg	12.22.18 21:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00354	0.00996	0.00192	mg/kg	12.27.18 01:53	JK	5
Toluene	108-88-3	0.00513	0.00996	0.00227	mg/kg	12.27.18 01:53	JK	5
Ethylbenzene	100-41-4	0.00503	0.00996	0.00281	mg/kg	12.27.18 01:53	JK	5
m_p-Xylenes	179601-23-1	0.00951	0.0199	0.00505	mg/kg	12.27.18 01:53	JK	5
o-Xylene	95-47-6	0.0837	0.00996	0.00171	mg/kg	12.27.18 01:53	K	5
Xylenes, Total	1330-20-7	0.09321		0.00171	mg/kg	12.27.18 01:53	K	
Total BTEX		0.10691		0.00171	mg/kg	12.27.18 01:53	K	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	112	70 - 130	%		
4-Bromofluorobenzene	71	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @ 24'

Matrix: Soil

Sample Depth: 24 ft

Lab Sample Id: 608722-010

Date Collected: 12.12.18 09.30

Date Received: 12.14.18 11.51

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	78.1	15.0	7.99	mg/kg	12.22.18 21:51		1
Diesel Range Organics (DRO)	C10C28DRO	561	15.0	8.12	mg/kg	12.22.18 21:51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	50.9	15.0	8.12	mg/kg	12.22.18 21:51		1
Total TPH	PHC635	690		7.99	mg/kg	12.22.18 21:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	113	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	12.27.18 02:12	UK	1
Toluene	108-88-3	0.000585	0.00202	0.000459	mg/kg	12.27.18 02:12	JK	1
Ethylbenzene	100-41-4	0.00211	0.00202	0.000569	mg/kg	12.27.18 02:12	K	1
m_p-Xylenes	179601-23-1	0.00321	0.00403	0.00102	mg/kg	12.27.18 02:12	JK	1
o-Xylene	95-47-6	0.0265	0.00202	0.000347	mg/kg	12.27.18 02:12	K	1
Xylenes, Total	1330-20-7	0.02971		0.000347	mg/kg	12.27.18 02:12	K	
Total BTEX		0.032405		0.000347	mg/kg	12.27.18 02:12	K	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT-1 @25 '

Matrix: Soil

Sample Depth: 25 ft

Lab Sample Id: 608722-011

Date Collected: 12.12.18 09.40

Date Received: 12.14.18 11.51

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	9.88	15.0	7.98	mg/kg	12.22.18 22:13	J	1
Diesel Range Organics (DRO)	C10C28DRO	117	15.0	8.10	mg/kg	12.22.18 22:13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.3	15.0	8.10	mg/kg	12.22.18 22:13	J	1
Total TPH	PHC635	140.18		7.98	mg/kg	12.22.18 22:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	12.27.18 02:31	UK	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	12.27.18 02:31	UK	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	12.27.18 02:31	UK	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	12.27.18 02:31	UK	1
o-Xylene	95-47-6	0.00371	0.00200	0.000344	mg/kg	12.27.18 02:31	K	1
Xylenes, Total	1330-20-7	0.00371		0.000344	mg/kg	12.27.18 02:31	K	
Total BTEX		0.00371		0.000344	mg/kg	12.27.18 02:31	K	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	110	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: **7668162-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668162-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073168

Date Prep: 12.17.18 09.00

Prep seq: 7668162

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	12.17.18 09:59	U	1

Sample Id: **7668232-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668232-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3073258

Date Prep: 12.17.18 08.45

Prep seq: 7668232

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	12.17.18 10:40	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	12.17.18 10:40	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	12.17.18 10:40	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	12.17.18 10:40	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	12.17.18 10:40	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	88	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: 7668405-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668405-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073493

Date Prep: 12.19.18 18.00

Prep seq: 7668405

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	12.19.18 20:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	12.19.18 20:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	12.19.18 20:57	U	1
Total TPH	PHC635	<8		8	mg/kg	12.19.18 20:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	109	70 - 135	%		

Sample Id: 7668612-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668612-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3073892

Date Prep: 12.21.18 15.00

Prep seq: 7668612

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	12.21.18 16:34	U	1





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: **7668683-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668683-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3073906

Date Prep: 12.21.18 17.00

Prep seq: 7668683

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	12.22.18 12:58	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>9.78</b>	15.0	8.13	mg/kg	12.22.18 12:58	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	12.22.18 12:58	U	1
<b>Total TPH</b>	PHC635	<b>9.78</b>		8	mg/kg	12.22.18 12:58	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	125	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Sample Id: **7668765-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668765-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074024

Date Prep: 12.26.18 08.15

Prep seq: 7668765

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	12.26.18 14:50	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	12.26.18 14:50	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	12.26.18 14:50	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	12.26.18 14:50	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	12.26.18 14:50	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	85	70 - 130	%		





# Certificate of Analytical Results

## 608722



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: 7668772-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7668772-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3074046

Date Prep: 12.26.18 12.00

Prep seq: 7668772

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	12.27.18 00:55	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	12.27.18 00:55	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	12.27.18 00:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	12.27.18 00:55	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	12.27.18 00:55	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	107	70 - 130	%		
4-Bromofluorobenzene	81	70 - 130	%		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



## Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 608722,

Project ID:

Lab Batch #: 3073258

Sample: 7668232-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/18 09:06

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0266	0.0300	89	70-130	

Lab Batch #: 3073258

Sample: 7668232-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/18 09:25

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0265	0.0300	88	70-130	

Lab Batch #: 3073258

Sample: 608429-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/18 09:44

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0267	0.0300	89	70-130	

Lab Batch #: 3073258

Sample: 608429-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/17/18 10:03

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0274	0.0300	91	70-130	

Lab Batch #: 3073258

Sample: 7668232-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/17/18 10:40

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0265	0.0300	88	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 608722,

Project ID:

Lab Batch #: 3074024

Sample: 7668765-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/18 12:25

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	70-130	
4-Bromofluorobenzene	0.0269	0.0300	90	70-130	

Lab Batch #: 3074024

Sample: 7668765-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/18 12:44

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0271	0.0300	90	70-130	

Lab Batch #: 3074024

Sample: 609206-014 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/18 13:54

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

Lab Batch #: 3074024

Sample: 609206-014 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/26/18 14:13

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0272	0.0300	91	70-130	

Lab Batch #: 3074024

Sample: 7668765-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/18 14:50

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	70-130	
4-Bromofluorobenzene	0.0254	0.0300	85	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 608722,

Project ID:

Lab Batch #: 3074046

Sample: 7668772-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/18 23:21

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	70-130	
4-Bromofluorobenzene	0.0264	0.0300	88	70-130	

Lab Batch #: 3074046

Sample: 7668772-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/26/18 23:40

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	70-130	
4-Bromofluorobenzene	0.0263	0.0300	88	70-130	

Lab Batch #: 3074046

Sample: 609206-040 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/18 00:00

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3074046

Sample: 609206-040 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/27/18 00:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0263	0.0300	88	70-130	

Lab Batch #: 3074046

Sample: 7668772-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/27/18 00:55

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0242	0.0300	81	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 608722,

Project ID:

Lab Batch #: 3073493

Sample: 7668405-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/18 20:57

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 3073493

Sample: 7668405-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/18 21:18

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 3073493

Sample: 7668405-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/19/18 21:38

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 3073493

Sample: 608832-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/18 22:19

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.6	108	70-135	
o-Terphenyl	47.7	49.8	96	70-135	

Lab Batch #: 3073493

Sample: 608832-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/19/18 22:40

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	47.4	49.9	95	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 608722,

Project ID:

Lab Batch #: 3073906

Sample: 7668683-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/18 12:58

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 3073906

Sample: 7668683-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/18 13:18

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 3073906

Sample: 7668683-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/22/18 13:39

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	62.9	50.0	126	70-135	

Lab Batch #: 3073906

Sample: 609031-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/18 14:20

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 3073906

Sample: 609031-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/22/18 14:40

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Analyst: SCM

Date Prepared: 12/17/2018

Date Analyzed: 12/17/2018

Lab Batch ID: 3073258

Sample: 7668232-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000386	0.100	0.101	101	0.100	0.100	100	1	70-130	35	
Toluene	<0.000457	0.100	0.0925	93	0.100	0.0921	92	0	70-130	35	
Ethylbenzene	<0.000566	0.100	0.101	101	0.100	0.101	101	0	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.185	93	0.200	0.185	93	0	70-130	35	
o-Xylene	<0.000345	0.100	0.0894	89	0.100	0.0898	90	0	70-130	35	

Analyst: SCM

Date Prepared: 12/26/2018

Date Analyzed: 12/26/2018

Lab Batch ID: 3074024

Sample: 7668765-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.109	109	0.100	0.106	106	3	70-130	35	
Toluene	<0.000456	0.100	0.100	100	0.100	0.0973	97	3	70-130	35	
Ethylbenzene	<0.000565	0.100	0.107	107	0.100	0.103	103	4	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.199	100	0.200	0.191	96	4	70-130	35	
o-Xylene	<0.000344	0.100	0.0957	96	0.100	0.0923	92	4	70-130	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Analyst: SCM

Date Prepared: 12/26/2018

Date Analyzed: 12/26/2018

Lab Batch ID: 3074046

Sample: 7668772-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000384	0.0998	0.130	130	0.100	0.129	129	1	70-130	35	
Toluene	<0.000455	0.0998	0.109	109	0.100	0.109	109	0	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.116	116	0.100	0.117	117	1	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.209	105	0.200	0.212	106	1	70-130	35	
o-Xylene	<0.000344	0.0998	0.103	103	0.100	0.104	104	1	70-130	35	

Analyst: CHE

Date Prepared: 12/17/2018

Date Analyzed: 12/17/2018

Lab Batch ID: 3073168

Sample: 7668162-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	259	104	250	258	103	0	90-110	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Analyst: CHE

Date Prepared: 12/21/2018

Date Analyzed: 12/21/2018

Lab Batch ID: 3073892

Sample: 7668612-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	274	110	250	274	110	0	90-110	20	

Analyst: ARM

Date Prepared: 12/19/2018

Date Analyzed: 12/19/2018

Lab Batch ID: 3073493

Sample: 7668405-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	932	93	1000	921	92	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	973	97	1000	965	97	1	70-135	20	

Analyst: ARM

Date Prepared: 12/21/2018

Date Analyzed: 12/22/2018

Lab Batch ID: 3073906

Sample: 7668683-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	975	98	1000	1150	115	16	70-135	20	
Diesel Range Organics (DRO)	9.78	1000	977	98	1000	1160	116	17	70-135	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Lab Batch ID: 3073258

QC- Sample ID: 608429-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2018

Date Prepared: 12/17/2018

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.0889	89	0.0998	0.0858	86	4	70-130	35	
Toluene	0.000590	0.0996	0.0819	82	0.0998	0.0807	80	1	70-130	35	
Ethylbenzene	0.00100	0.0996	0.0892	89	0.0998	0.0861	85	4	70-130	35	
m_p-Xylenes	0.00141	0.199	0.163	81	0.200	0.158	78	3	70-130	35	
o-Xylene	0.000670	0.0996	0.0797	79	0.0998	0.0770	76	3	70-130	35	

Lab Batch ID: 3074024

QC- Sample ID: 609206-014 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/26/2018

Date Prepared: 12/26/2018

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000385	0.100	0.110	110	0.100	0.115	115	4	70-130	35	
Toluene	<0.000456	0.100	0.109	109	0.100	0.105	105	4	70-130	35	
Ethylbenzene	<0.000565	0.100	0.124	124	0.100	0.112	112	10	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.235	118	0.200	0.208	104	12	70-130	35	
o-Xylene	<0.000344	0.100	0.113	113	0.100	0.100	100	12	70-130	35	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Lab Batch ID: 3074046

QC- Sample ID: 609206-040 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/27/2018

Date Prepared: 12/26/2018

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000387	0.101	0.0954	94	0.100	0.111	111	15	70-130	35	
Toluene	<0.000458	0.101	0.0893	88	0.100	0.0939	94	5	70-130	35	
Ethylbenzene	<0.000568	0.101	0.0976	97	0.100	0.101	101	3	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.180	90	0.201	0.183	91	2	70-130	35	
o-Xylene	<0.000346	0.101	0.0882	87	0.100	0.0892	89	1	70-130	35	

Lab Batch ID: 3073168

QC- Sample ID: 608721-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2018

Date Prepared: 12/17/2018

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	538	248	770	94	248	773	95	0	90-110	20	

Lab Batch ID: 3073168

QC- Sample ID: 608747-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/17/2018

Date Prepared: 12/17/2018

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1270	250	1450	72	250	1480	84	2	90-110	20	X

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order #: 608722

Project ID:

Lab Batch ID: 3073892

QC- Sample ID: 609206-030 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2018

Date Prepared: 12/21/2018

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	21.3	248	283	106	248	271	101	4	90-110	20	

Lab Batch ID: 3073892

QC- Sample ID: 609489-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/21/2018

Date Prepared: 12/21/2018

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	68.2	250	324	102	250	328	104	1	90-110	20	

Lab Batch ID: 3073493

QC- Sample ID: 608832-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/19/2018

Date Prepared: 12/19/2018

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.97	996	853	86	998	868	87	2	70-135	20	
Diesel Range Organics (DRO)	89.1	996	940	85	998	954	87	1	70-135	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order # : 608722

Project ID:

Lab Batch ID: 3073906

QC- Sample ID: 609031-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/22/2018

Date Prepared: 12/21/2018

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	947	95	1000	963	96	2	70-135	20	
Diesel Range Organics (DRO)	43.7	999	993	95	1000	1000	96	1	70-135	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

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

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





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Xenco Quote #

Xenco Job #

10087722

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes							
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: MIDRE SUEEV															
Company Address: 10 Desia Dr. Suite 130E Midland, TX 79705				Project Location: LEA County, NM															
Email: zconder@trcsolutions.com				Phone No: 432-234-5094				Invoice To: Plains Marketing c/o Amber Groves											
Project Contact: Zach Conder				Invoice:															
Samples Name: <u>Rocky G. Field</u>																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	TT-1 @ 15'	15 FT	17-12-18	8:00	S	1									X	X	X		
2	TT-1 @ 16'	16 FT		8:10	S	1									X	X	X		
3	TT-1 @ 17'	17 FT		8:20	S	1									X	X	X		
4	TT-1 @ 18'	18 FT		8:30	S	1													
5	TT-1 @ 19'	19 FT		8:40	S	1													
6	TT-1 @ 20'	20 FT		8:50	S	1													
7	TT-1 @ 21'	21 FT		9:00	S	1													
8	TT-1 @ 22'	22 FT		9:10	S	1													
9	TT-1 @ 23'	23 FT		9:20	S	1													
10	TT-1 @ 24'	24 FT		9:30	S	1													
Turnaround Time (Business days)																			
Data Deliverable Information																			
Notes:																			
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg raw data) <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411 <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist																			
TAT Starts Day received by Lab, if received by 5:00 pm																			
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																			
Relinquished by Sampler:		Date Time:		Received By:		Relinquished By:		Date Time:		Custody Seal #		Preserved where applicable		On Ice		Cooler Temp.		Therm. Factor	
Relinquished by:		12-13-18		1. Espinoza Gonzalez		2. Espinoza Gonzalez		12/13/18		3:44						1.3/1.2/18		151	
Relinquished by:																			
Relinquished by:																			
Relinquished by:																			

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





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Page 1 of 2

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 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

1008172

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: TRC Environmental Corporation				Project Name/Number:											
Company Address: 10 Deste Dr. Suite 150E Midland, TX 79705				Project Location:											
Email: zconder@trcsolutions.com				Phone: 409 698-1234				Invoice:							
Project Contact: Zach Conder				Sample's Name: BCE 888				Field ID / Point of Collection:							
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	11-1 @ 25'	25 ft	12-18	9:40	S	1									
2															
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6															
7															
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9															
10															
Turnaround Time (Business days)				Data Deliverable Information				Notes:							
<input type="checkbox"/> Same Day TAT				<input type="checkbox"/> 5 Day TAT				<input type="checkbox"/> Level II Std QC				<input type="checkbox"/> Level IV (Full Data Pkg / raw data)			
<input type="checkbox"/> Next Day EMERGENCY				<input type="checkbox"/> 7 Day TAT				<input type="checkbox"/> Level III Std QC+ Forms				<input type="checkbox"/> TRRP Level IV			
<input type="checkbox"/> 2 Day EMERGENCY				<input type="checkbox"/> Contract TAT				<input type="checkbox"/> Level 3 (CLP Forms)				<input type="checkbox"/> UST / RG -411			
<input type="checkbox"/> 3 Day EMERGENCY								<input type="checkbox"/> TRRP Checklist							
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Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			
BCE 888				12-18-18				25yucana Gonzalez				12-18-18 3:44			
Relinquished by:				Date Time:				Received By:				Date Time:			



41 MAFB  
4705 2519 6026  
TRK# 0201

TX-US LBB  
MAFB  
HLD  
STANDARD OVERNIGHT  
FRI - 14 DEC HOLD

EXPRESS  
FedEx

DEPT: REF: INV: (432) 563-1800  
MIDLAND TX 79711  
3600 COUNTY ROAD 1276 SOUTH  
FEDEX EXPRESS SHIP CENTER  
FEDEX EXPRESS SHIP CENTER  
XENCO LABORATORIES  
TO  
HOBBS, NM 88240  
UNITED STATES US  
MAIL SERVICES ETC, LLC  
4008 N GRIMES  
HOBBS, NM 88240  
ORIGIN ID: HOBBS (5/5) 392-/550

SHIP DATE: 13DEC18  
ACTWGT: 29.00 LB MAN  
CAD: 0909328/CNFE3211  
DIMS: 26x14x14 IN  
BILL RECIPIENT

55171/1CF/184C





Client: TRC Solutions, Inc

Date/ Time Received: 12/14/2018 11:51:00 AM

Work Order #: 608722

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 12/14/2018

Checklist reviewed by:

Kelsey Brooks

Date: 12/17/2018



# Analytical Report 614757

for  
**TRC Solutions, Inc**

**Project Manager: B Cooper**  
**Moore Sweet**

**27-FEB-19**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)  
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429), North Carolina (483)  
Xenco-Lakeland: Florida (E84098)





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27-FEB-19

Project Manager: **B Cooper**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **614757**  
**Moore Sweet**  
Project Address:

**B Cooper:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 614757. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 614757 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

---

**Jessica Kramer**  
Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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





## Sample Cross Reference 614757

TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT 1 @ 26'	S	02-13-19 00:00	26 ft	614757-001
TT 1 @ 27'	S	02-13-19 00:00	27 ft	614757-002
TT 1 @ 28'	S	02-13-19 00:00	28 ft	614757-003
TT 1 @ 29'	S	02-13-19 00:00	29 ft	614757-004
TT 1 @ 30'	S	02-13-19 00:00	30 ft	614757-005
TT 1 @ 31'	S	02-13-19 00:00	31 ft	Not Analyzed
TT 1 @ 32'	S	02-13-19 00:00	32 ft	Not Analyzed
TT 1 @ 33'	S	02-13-19 00:00	33 ft	Not Analyzed



**CASE NARRATIVE***Client Name: TRC Solutions, Inc**Project Name: Moore Sweet*

Project ID:

Work Order Number(s): 614757

Report Date: 27-FEB-19

Date Received: 02/15/2019

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This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3080327 BTEX by EPA 8021

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 614757-002.

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

Batch: LBA-3080460 BTEX by EPA 8021

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 614757-005.

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





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT 1@ 26'

Matrix: Soil

Sample Depth: 26 ft

Lab Sample Id: 614757-001

Date Collected: 02.13.19 00.00

Date Received: 02.15.19 12.35

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3079495

Date Prep: 02.15.19 15.00

Prep seq: 7671969

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	35.8	15.0	7.99	mg/kg	02.15.19 22:57		1
Diesel Range Organics (DRO)	C10C28DRO	209	15.0	8.11	mg/kg	02.15.19 22:57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.7	15.0	8.11	mg/kg	02.15.19 22:57	J	1
Total TPH	PHC635	258.5		7.99	mg/kg	02.15.19 22:57		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	110	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080327

Date Prep: 02.25.19 16.30

Prep seq: 7672488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.111	0.0199	0.00383	mg/kg	02.26.19 03:26		10
Toluene	108-88-3	0.0855	0.0199	0.00453	mg/kg	02.26.19 03:26		10
Ethylbenzene	100-41-4	0.0101	0.0199	0.00561	mg/kg	02.26.19 03:26	J	10
m_p-Xylenes	179601-23-1	0.0251	0.0398	0.0101	mg/kg	02.26.19 03:26	J	10
o-Xylene	95-47-6	0.152	0.0199	0.00342	mg/kg	02.26.19 03:26		10
Xylenes, Total	1330-20-7	0.1771		0.00342	mg/kg	02.26.19 03:26		
Total BTEX		0.3837		0.00342	mg/kg	02.26.19 03:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	130	70 - 130	%		
4-Bromofluorobenzene	118	70 - 130	%		





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT 1@ 27'

Matrix: Soil

Sample Depth: 27 ft

Lab Sample Id: 614757-002

Date Collected: 02.13.19 00.00

Date Received: 02.15.19 12.35

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3079495

Date Prep: 02.15.19 15.00

Prep seq: 7671969

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	280	15.0	7.98	mg/kg	02.15.19 23:16		1
Diesel Range Organics (DRO)	C10C28DRO	879	15.0	8.10	mg/kg	02.15.19 23:16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	58.7	15.0	8.10	mg/kg	02.15.19 23:16		1
Total TPH	PHC635	1217.7		7.98	mg/kg	02.15.19 23:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	113	70 - 135	%		
o-Terphenyl	114	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080327

Date Prep: 02.25.19 16.30

Prep seq: 7672488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.113	0.0998	0.0192	mg/kg	02.26.19 03:07		50
Toluene	108-88-3	0.656	0.0998	0.0227	mg/kg	02.26.19 03:07		50
Ethylbenzene	100-41-4	0.134	0.0998	0.0282	mg/kg	02.26.19 03:07		50
m_p-Xylenes	179601-23-1	0.360	0.200	0.0506	mg/kg	02.26.19 03:07		50
o-Xylene	95-47-6	1.78	0.0998	0.0172	mg/kg	02.26.19 03:07		50
Xylenes, Total	1330-20-7	2.14		0.0172	mg/kg	02.26.19 03:07		
Total BTEX		3.043		0.0172	mg/kg	02.26.19 03:07		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	107	70 - 130	%		
4-Bromofluorobenzene	175	70 - 130	%		**





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT 1@ 28'

Matrix: Soil

Sample Depth: 28 ft

Lab Sample Id: 614757-003

Date Collected: 02.13.19 00.00

Date Received: 02.15.19 12.35

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3079495

Date Prep: 02.15.19 15.00

Prep seq: 7671969

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	31.0	15.0	7.98	mg/kg	02.15.19 23:35		1
Diesel Range Organics (DRO)	C10C28DRO	176	15.0	8.10	mg/kg	02.15.19 23:35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.6	15.0	8.10	mg/kg	02.15.19 23:35	J	1
Total TPH	PHC635	220.6		7.98	mg/kg	02.15.19 23:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	110	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080327

Date Prep: 02.25.19 16.30

Prep seq: 7672488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.106	0.0201	0.00387	mg/kg	02.26.19 03:45		10
Toluene	108-88-3	0.00946	0.0201	0.00458	mg/kg	02.26.19 03:45	J	10
Ethylbenzene	100-41-4	0.0269	0.0201	0.00568	mg/kg	02.26.19 03:45		10
m_p-Xylenes	179601-23-1	0.0534	0.0402	0.0102	mg/kg	02.26.19 03:45		10
o-Xylene	95-47-6	0.0533	0.0201	0.00346	mg/kg	02.26.19 03:45		10
Xylenes, Total	1330-20-7	0.1067		0.00346	mg/kg	02.26.19 03:45		
Total BTEX		0.24906		0.00346	mg/kg	02.26.19 03:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	129	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT 1@ 29'

Matrix: Soil

Sample Depth: 29 ft

Lab Sample Id: 614757-004

Date Collected: 02.13.19 00.00

Date Received: 02.15.19 12.35

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3080373

Date Prep: 02.25.19 11.00

Prep seq: 7672518

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	55.1	15.0	7.98	mg/kg	02.25.19 19:45		1
Diesel Range Organics (DRO)	C10C28DRO	286	15.0	8.10	mg/kg	02.25.19 19:45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.5	15.0	8.10	mg/kg	02.25.19 19:45		1
Total TPH	PHC635	365.6		7.98	mg/kg	02.25.19 19:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	107	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080460

Date Prep: 02.26.19 13.45

Prep seq: 7672572

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00111	0.00202	0.000388	mg/kg	02.26.19 16:40	J	1
Toluene	108-88-3	0.0320	0.00202	0.000459	mg/kg	02.26.19 16:40		1
Ethylbenzene	100-41-4	0.00387	0.00202	0.000569	mg/kg	02.26.19 16:40		1
m_p-Xylenes	179601-23-1	0.00756	0.00403	0.00102	mg/kg	02.26.19 16:40		1
o-Xylene	95-47-6	0.0418	0.00202	0.000347	mg/kg	02.26.19 16:40		1
Xylenes, Total	1330-20-7	0.04936		0.000347	mg/kg	02.26.19 16:40		
Total BTEX		0.08634		0.000347	mg/kg	02.26.19 16:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	128	70 - 130	%		





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: TT 1@ 30'

Matrix: Soil

Sample Depth: 30 ft

Lab Sample Id: 614757-005

Date Collected: 02.13.19 00.00

Date Received: 02.15.19 12.35

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3080373

Date Prep: 02.25.19 11.00

Prep seq: 7672518

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	8.77	15.0	7.99	mg/kg	02.25.19 20:04	J	1
Diesel Range Organics (DRO)	C10C28DRO	92.2	15.0	8.12	mg/kg	02.25.19 20:04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	02.25.19 20:04	U	1
Total TPH	PHC635	100.97		7.99	mg/kg	02.25.19 20:04		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080460

Date Prep: 02.26.19 13.45

Prep seq: 7672572

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.26.19 16:03	U	1
Toluene	108-88-3	0.00395	0.00199	0.000454	mg/kg	02.26.19 16:03		1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	02.26.19 16:03	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.26.19 16:03	U	1
o-Xylene	95-47-6	0.00477	0.00199	0.000343	mg/kg	02.26.19 16:03		1
Xylenes, Total	1330-20-7	0.00477		0.000343	mg/kg	02.26.19 16:03		
Total BTEX		0.00872		0.000343	mg/kg	02.26.19 16:03		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	138	70 - 130	%		**





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX

Moore Sweet

Sample Id: **7671969-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7671969-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3079495

Date Prep: 02.15.19 15.00

Prep seq: 7671969

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	02.15.19 19:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	02.15.19 19:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	02.15.19 19:25	U	1
Total TPH	PHC635	<8		8	mg/kg	02.15.19 19:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	125	70 - 135	%		
o-Terphenyl	124	70 - 135	%		

Sample Id: **7672488-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7672488-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080327

Date Prep: 02.25.19 16.30

Prep seq: 7672488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.25.19 20:30	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	02.25.19 20:30	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	02.25.19 20:30	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.25.19 20:30	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	02.25.19 20:30	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		





# Certificate of Analytical Results

## 614757



TRC Solutions, Inc, Midland, TX  
Moore Sweet

Sample Id: **7672518-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7672518-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3080373

Date Prep: 02.25.19 11.00

Prep seq: 7672518

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	02.25.19 11:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	02.25.19 11:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	02.25.19 11:51	U	1
Total TPH	PHC635	<8		8	mg/kg	02.25.19 11:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	118	70 - 135	%		

Sample Id: **7672572-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7672572-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3080460

Date Prep: 02.26.19 13.45

Prep seq: 7672572

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.26.19 15:25	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	02.26.19 15:25	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	02.26.19 15:25	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.26.19 15:25	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	02.26.19 15:25	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



# Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 614757,

Project ID:

Lab Batch #: 3080327

Sample: 7672488-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 18:57

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3080327

Sample: 7672488-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 19:16

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3080327

Sample: 615571-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 19:35

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3080327

Sample: 615571-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 19:54

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3080327

Sample: 7672488-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 20:30

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	70-130	
4-Bromofluorobenzene	0.0278	0.0300	93	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 614757,

Project ID:

Lab Batch #: 3080460

Sample: 7672572-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/19 13:52

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

Lab Batch #: 3080460

Sample: 7672572-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/19 14:11

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

Lab Batch #: 3080460

Sample: 615456-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/19 14:30

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	70-130	
4-Bromofluorobenzene	0.0311	0.0300	104	70-130	

Lab Batch #: 3080460

Sample: 615456-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/19 14:49

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	70-130	
4-Bromofluorobenzene	0.0314	0.0300	105	70-130	

Lab Batch #: 3080460

Sample: 7672572-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/19 15:25

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 614757,

Project ID:

Lab Batch #: 3079495

Sample: 7671969-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/15/19 19:25

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	62.2	50.0	124	70-135	

Lab Batch #: 3079495

Sample: 7671969-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/15/19 19:44

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	63.4	50.0	127	70-135	

Lab Batch #: 3079495

Sample: 7671969-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/15/19 20:04

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	64.9	50.0	130	70-135	

Lab Batch #: 3079495

Sample: 614582-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/15/19 20:42

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.9	127	70-135	
o-Terphenyl	58.6	50.0	117	70-135	

Lab Batch #: 3079495

Sample: 614582-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/15/19 21:02

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.9	128	70-135	
o-Terphenyl	59.6	50.0	119	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





# Form 2 - Surrogate Recoveries

Project Name: Moore Sweet

Work Orders : 614757,

Project ID:

Lab Batch #: 3080373

Sample: 7672518-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 11:51

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	59.2	50.0	118	70-135	

Lab Batch #: 3080373

Sample: 7672518-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 12:11

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 3080373

Sample: 7672518-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 12:31

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 3080373

Sample: 615525-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 13:10

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.9	112	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 3080373

Sample: 615525-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 13:30

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: Moore Sweet

Work Order #: 614757

Project ID:

Analyst: SCM

Date Prepared: 02/25/2019

Date Analyzed: 02/25/2019

Lab Batch ID: 3080327

Sample: 7672488-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000386	0.100	0.127	127	0.0996	0.124	124	2	70-130	35	
Toluene	<0.000457	0.100	0.110	110	0.0996	0.107	107	3	70-130	35	
Ethylbenzene	<0.000566	0.100	0.106	106	0.0996	0.102	102	4	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.211	106	0.199	0.204	103	3	70-130	35	
o-Xylene	<0.000345	0.100	0.104	104	0.0996	0.101	101	3	70-130	35	

Analyst: SCM

Date Prepared: 02/26/2019

Date Analyzed: 02/26/2019

Lab Batch ID: 3080460

Sample: 7672572-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.119	119	0.101	0.119	118	0	70-130	35	
Toluene	<0.000456	0.100	0.107	107	0.101	0.106	105	1	70-130	35	
Ethylbenzene	<0.000565	0.100	0.104	104	0.101	0.104	103	0	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.210	105	0.201	0.208	103	1	70-130	35	
o-Xylene	<0.000344	0.100	0.103	103	0.101	0.103	102	0	70-130	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: Moore Sweet

Work Order #: 614757

Project ID:

Analyst: ARM

Date Prepared: 02/15/2019

Date Analyzed: 02/15/2019

Lab Batch ID: 3079495

Sample: 7671969-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	907	91	1000	1040	104	14	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	979	98	1000	1190	119	19	70-135	20	

Analyst: ARM

Date Prepared: 02/25/2019

Date Analyzed: 02/25/2019

Lab Batch ID: 3080373

Sample: 7672518-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	905	91	1000	900	90	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	910	91	1000	914	91	0	70-135	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order #: 614757

Project ID:

Lab Batch ID: 3080327

QC- Sample ID: 615571-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/25/2019

Date Prepared: 02/25/2019

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.0811	81	0.100	0.106	106	27	70-130	35	
Toluene	<0.000455	0.0998	0.0681	68	0.100	0.0905	91	28	70-130	35	X
Ethylbenzene	<0.000564	0.0998	0.0583	58	0.100	0.0825	83	34	70-130	35	X
m_p-Xylenes	<0.00101	0.200	0.117	59	0.200	0.164	82	33	70-130	35	X
o-Xylene	<0.000344	0.0998	0.0582	58	0.100	0.0819	82	34	70-130	35	X

Lab Batch ID: 3080460

QC- Sample ID: 615456-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/26/2019

Date Prepared: 02/26/2019

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.0933	93	0.100	0.0953	95	2	70-130	35	
Toluene	<0.000455	0.0998	0.0814	82	0.100	0.0827	83	2	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.0747	75	0.100	0.0764	76	2	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.152	76	0.200	0.154	77	1	70-130	35	
o-Xylene	<0.000344	0.0998	0.0752	75	0.100	0.0767	77	2	70-130	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: Moore Sweet

Work Order #: 614757

Project ID:

Lab Batch ID: 3079495

QC- Sample ID: 614582-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/15/2019

Date Prepared: 02/15/2019

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	997	100	999	972	97	3	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	1120	112	999	1090	109	3	70-135	20	

Lab Batch ID: 3080373

QC- Sample ID: 615525-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/25/2019

Date Prepared: 02/25/2019

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	910	91	997	887	89	3	70-135	20	
Diesel Range Organics (DRO)	288	999	1200	91	997	1130	84	6	70-135	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





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614751

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes													
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: Moore Sweet																					
Company Address: 10 Desha Dr. Suite 150E Midland, TX 79705				Project Location:																					
Email: bcooper@trcsolutions.com				Invoice To: Moore Sweet																					
Phone No: 432-466-4450				Invoice:																					
Project Contact: Joel Lowry				Invoice:																					
Samples Name: 1414 Schmidt																									
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH TX1005	Chloride E 300	NORM	RCI	TCLP Benzene	TCLP RCRA 8 Metals	Chloride	TPH 8015 M Ext (NM)	BTEX	Field Comments	
1	771026'	26.4	2-15-19		S																				
2	771027'	27.4																							
3	771028'	28.4																							
4	771029'	29.4																							
5	771030'	30.4																							
6	771031'	31.4																							
7	771032'	32.4																							
8	771033'	33.4																							
9																									
10																									
Turnaround Time (Business days)				Data Deliverable Information				Notes:																	
<input type="checkbox"/> Same Day TAT				<input type="checkbox"/> Level II Std QC				<input type="checkbox"/> Level IV (Full Data Pkg / raw data)				Howry@trcsolutions.com													
<input type="checkbox"/> Next Day EMERGENCY				<input type="checkbox"/> 7 Day TAT				<input type="checkbox"/> Level III Std QC+ Forms				<input type="checkbox"/> TRRP Level IV				Zander@trc.com									
<input type="checkbox"/> 2 Day EMERGENCY				<input checked="" type="checkbox"/> Contract TAT				<input type="checkbox"/> Level 3 (CLP Forms)				<input type="checkbox"/> UST / RG -411				bcooper@trc.com									
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist																					
TAT Starts Day received by Lab, if received by 5:00 pm																									
Relinquished by Sampler:				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
Date Time:				Relinquished By:				Date Time:				Received By:													
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Client: TRC Solutions, Inc

Date/ Time Received: 02/15/2019 12:35:00 PM

Work Order #: 614757

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 02/15/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/19/2019



# **Analytical Report 620194**

## **for**

## **TRC Solutions/Environmental**

**Project Manager: Brian Cooper**

**NM Moore Sweet**

**11-APR-19**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)

Xenco-Lakeland: Florida (E84098)





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11-APR-19

Project Manager: **Brian Cooper**  
**TRC Solutions/Environmental**  
10 Desta Dr. Ste 150E  
Midland, TX 79705

Reference: XENCO Report No(s): **620194**  
**NM Moore Sweet**  
Project Address: Lea, Co. NM

**Brian Cooper:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620194. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 620194 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'Mike Kimmel', written over a light gray rectangular background.

**Mike Kimmel**  
Client Services Manager

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

*Certified and approved by numerous States and Agencies.*

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

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





## Sample Cross Reference 620194

## TRC Solutions/Environmental, Midland, TX

NM Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT2-Comp 1 @ 3'	S	04-03-19 12:00	3 ft	620194-001
TT2-Comp 2 @ 3'	S	04-03-19 12:15	3 ft	620194-002
TT2-Comp 3 @ 3'	S	04-03-19 12:30	3 ft	620194-003
TT2-Comp 4 @ 3'	S	04-03-19 12:45	3 ft	620194-004
TT2-NW @ 1.5'	S	04-03-19 13:00	1.5 ft	620194-005
TT2-EW @ 1.5'	S	04-03-19 13:15	1.5 ft	620194-006
TT2-WW @ 1.5'	S	04-03-19 13:30	1.5 ft	620194-007
ETT-NW-B @ 2.5'	S	04-03-19 14:30	2.5 ft	620194-008



**CASE NARRATIVE****Client Name: TRC Solutions/Environmental****Project Name: NM Moore Sweet**Project ID:  
Work Order Number(s): 620194Report Date: 11-APR-19  
Date Received: 04/03/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3084803 DRO-ORO By SW8015B

Surrogate Tricosane, Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 620194-002,620194-004,620194-005,620194-006.

Batch: LBA-3084840 BTEX by EPA 8021B

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

Batch: LBA-3084842 TPH GRO by EPA 8015 Mod.

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 620194-006.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7675211-1-BSD,620194-001 S,620194-003,620194-008.





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-Comp 1 @ 3'** Matrix: Soil Sample Depth: 3 ft  
 Lab Sample Id: 620194-001 Date Collected: 04.03.19 12.00 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	85.6	10.0	0.354	mg/kg	04.08.19 13:43		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	40.2	25.2	7.53	mg/kg	04.06.19 06:48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	04.06.19 06:48	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	108	65 - 144	%		
n-Triacontane	120	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.262	3.87	0.262	mg/kg	04.06.19 05:45	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	90	76 - 123	%		
a,a,a-Trifluorotoluene	107	69 - 120	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **TT2-Comp 1 @ 3'**

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 620194-001

Date Collected: 04.03.19 12.00

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00874	0.0193	0.00874	mg/kg	04.06.19 05:45	U	19
Toluene	108-88-3	<0.00453	0.0193	0.00453	mg/kg	04.06.19 05:45	U	19
Ethylbenzene	100-41-4	<0.00596	0.0193	0.00596	mg/kg	04.06.19 05:45	U	19
m_p-Xylenes	179601-23-1	<0.00660	0.0387	0.00660	mg/kg	04.06.19 05:45	U	19
o-Xylene	95-47-6	<0.00660	0.0193	0.00660	mg/kg	04.06.19 05:45	U	19
Xylenes, Total	1330-20-7	<0.00660		0.00660	mg/kg	04.06.19 05:45	U	
Total BTEX		<0.00453		0.00453	mg/kg	04.06.19 05:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	93	68 - 120	%		
a,a,a-Trifluorotoluene	97	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-Comp 2 @ 3'** Matrix: Soil Sample Depth: 3 ft  
 Lab Sample Id: 620194-002 Date Collected: 04.03.19 12.15 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	30.3	9.98	0.353	mg/kg	04.08.19 14:10		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	184	24.8	7.43	mg/kg	04.06.19 14:23		1
Oil Range Hydrocarbons (ORO)	PHCG2835	22.2	24.8	7.43	mg/kg	04.06.19 14:23	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	220	65 - 144	%		**
n-Triacontane	202	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.248	3.66	0.248	mg/kg	04.06.19 08:11	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	89	76 - 123	%		
a,a,a-Trifluorotoluene	109	69 - 120	%		





# Certificate of Analytical Results

## 620194



TRC Solutions/Environmental, Midland, TX

NM Moore Sweet

Sample Id: TT2-Comp 2 @ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 620194-002

Date Collected: 04.03.19 12.15

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00826	0.0183	0.00826	mg/kg	04.06.19 08:11	U	18
Toluene	108-88-3	<0.00428	0.0183	0.00428	mg/kg	04.06.19 08:11	U	18
Ethylbenzene	100-41-4	<0.00563	0.0183	0.00563	mg/kg	04.06.19 08:11	U	18
m_p-Xylenes	179601-23-1	<0.00623	0.0366	0.00623	mg/kg	04.06.19 08:11	U	18
o-Xylene	95-47-6	<0.00623	0.0183	0.00623	mg/kg	04.06.19 08:11	U	18
Xylenes, Total	1330-20-7	<0.00623		0.00623	mg/kg	04.06.19 08:11	U	
Total BTEX		<0.00428		0.00428	mg/kg	04.06.19 08:11	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	92	68 - 120	%		
a,a,a-Trifluorotoluene	99	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-Comp 3 @ 3'** Matrix: Soil Sample Depth: 3 ft  
 Lab Sample Id: 620194-003 Date Collected: 04.03.19 12.30 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	42.3	10.0	0.355	mg/kg	04.08.19 14:19		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	68.3	25.0	7.47	mg/kg	04.06.19 09:42		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	04.06.19 09:42	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	143	65 - 144	%		
n-Triacontane	152	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.268	3.95	0.268	mg/kg	04.06.19 08:36	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	76 - 123	%		
a,a,a-Trifluorotoluene	122	69 - 120	%		**





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**

NM Moore Sweet

Sample Id: **TT2-Comp 3 @ 3'**

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 620194-003

Date Collected: 04.03.19 12.30

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00893	0.0198	0.00893	mg/kg	04.06.19 08:36	U	20
Toluene	108-88-3	<0.00462	0.0198	0.00462	mg/kg	04.06.19 08:36	U	20
Ethylbenzene	100-41-4	<0.00609	0.0198	0.00609	mg/kg	04.06.19 08:36	U	20
m_p-Xylenes	179601-23-1	<0.00674	0.0395	0.00674	mg/kg	04.06.19 08:36	U	20
o-Xylene	95-47-6	<0.00674	0.0198	0.00674	mg/kg	04.06.19 08:36	U	20
Xylenes, Total	1330-20-7	<0.00674		0.00674	mg/kg	04.06.19 08:36	U	
Total BTEX		<0.00462		0.00462	mg/kg	04.06.19 08:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	68 - 120	%		
a,a,a-Trifluorotoluene	110	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-Comp 4 @ 3'** Matrix: Soil Sample Depth: 3 ft  
 Lab Sample Id: 620194-004 Date Collected: 04.03.19 12.45 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	14.9	9.94	0.352	mg/kg	04.08.19 14:27		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	153	25.2	7.55	mg/kg	04.06.19 14:59		1
Oil Range Hydrocarbons (ORO)	PHCG2835	20.4	25.2	7.55	mg/kg	04.06.19 14:59	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	200	65 - 144	%		**
n-Triacontane	196	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.242	3.57	0.242	mg/kg	04.06.19 09:00	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	76 - 123	%		
a,a,a-Trifluorotoluene	120	69 - 120	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **TT2-Comp 4 @ 3'**

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 620194-004

Date Collected: 04.03.19 12.45

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00806	0.0178	0.00806	mg/kg	04.06.19 09:00	U	18
Toluene	108-88-3	<0.00417	0.0178	0.00417	mg/kg	04.06.19 09:00	U	18
Ethylbenzene	100-41-4	<0.00549	0.0178	0.00549	mg/kg	04.06.19 09:00	U	18
m_p-Xylenes	179601-23-1	<0.00608	0.0357	0.00608	mg/kg	04.06.19 09:00	U	18
o-Xylene	95-47-6	<0.00608	0.0178	0.00608	mg/kg	04.06.19 09:00	U	18
Xylenes, Total	1330-20-7	<0.00608		0.00608	mg/kg	04.06.19 09:00	U	
Total BTEX		<0.00417		0.00417	mg/kg	04.06.19 09:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	68 - 120	%		
a,a,a-Trifluorotoluene	108	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-NW @ 1.5'** Matrix: Soil Sample Depth: 1.5 ft  
 Lab Sample Id: 620194-005 Date Collected: 04.03.19 13.00 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	128	10.0	0.354	mg/kg	04.08.19 14:36		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	104	25.1	7.50	mg/kg	04.06.19 15:34		1
Oil Range Hydrocarbons (ORO)	PHCG2835	15.3	25.1	7.50	mg/kg	04.06.19 15:34	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	174	65 - 144	%		**
n-Triacontane	175	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.250	3.70	0.250	mg/kg	04.06.19 09:23	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	76 - 123	%		
a,a,a-Trifluorotoluene	118	69 - 120	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **TT2-NW @ 1.5'**

Matrix: Soil

Sample Depth: 1.5 ft

Lab Sample Id: 620194-005

Date Collected: 04.03.19 13.00

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00835	0.0185	0.00835	mg/kg	04.06.19 09:23	U	18
Toluene	108-88-3	<0.00433	0.0185	0.00433	mg/kg	04.06.19 09:23	U	18
Ethylbenzene	100-41-4	<0.00569	0.0185	0.00569	mg/kg	04.06.19 09:23	U	18
m_p-Xylenes	179601-23-1	<0.00630	0.0370	0.00630	mg/kg	04.06.19 09:23	U	18
o-Xylene	95-47-6	<0.00630	0.0185	0.00630	mg/kg	04.06.19 09:23	U	18
Xylenes, Total	1330-20-7	<0.00630		0.00630	mg/kg	04.06.19 09:23	U	
Total BTEX		<0.00433		0.00433	mg/kg	04.06.19 09:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	68 - 120	%		
a,a,a-Trifluorotoluene	106	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-EW @ 1.5'** Matrix: Soil Sample Depth: 1.5 ft  
 Lab Sample Id: 620194-006 Date Collected: 04.03.19 13.15 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	6.39	9.98	0.353	mg/kg	04.08.19 14:45	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	106	25.1	7.52	mg/kg	04.06.19 16:10		1
Oil Range Hydrocarbons (ORO)	PHCG2835	17.7	25.1	7.52	mg/kg	04.06.19 16:10	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	176	65 - 144	%		**
n-Triacontane	183	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.262	3.86	0.262	mg/kg	04.06.19 09:47	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	74	76 - 123	%		**
a,a,a-Trifluorotoluene	85	69 - 120	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**

NM Moore Sweet

Sample Id: **TT2-EW @ 1.5'**

Matrix: Soil

Sample Depth: 1.5 ft

Lab Sample Id: 620194-006

Date Collected: 04.03.19 13.15

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00873	0.0193	0.00873	mg/kg	04.06.19 09:47	U	19
Toluene	108-88-3	<0.00452	0.0193	0.00452	mg/kg	04.06.19 09:47	U	19
Ethylbenzene	100-41-4	<0.00595	0.0193	0.00595	mg/kg	04.06.19 09:47	U	19
m_p-Xylenes	179601-23-1	<0.00658	0.0386	0.00658	mg/kg	04.06.19 09:47	U	19
o-Xylene	95-47-6	<0.00658	0.0193	0.00658	mg/kg	04.06.19 09:47	U	19
Xylenes, Total	1330-20-7	<0.00658		0.00658	mg/kg	04.06.19 09:47	U	
Total BTEX		<0.00452		0.00452	mg/kg	04.06.19 09:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	76	68 - 120	%		
a,a,a-Trifluorotoluene	77	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **TT2-WW @ 1.5'** Matrix: Soil Sample Depth: 1.5 ft  
 Lab Sample Id: 620194-007 Date Collected: 04.03.19 13.30 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	176	9.98	0.353	mg/kg	04.08.19 14:54		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	38.5	25.0	7.48	mg/kg	04.06.19 12:02		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.06.19 12:02	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	110	65 - 144	%		
n-Triacontane	130	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.241	3.56	0.241	mg/kg	04.06.19 10:11	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	76 - 123	%		
a,a,a-Trifluorotoluene	120	69 - 120	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **TT2-WW @ 1.5'**

Matrix: Soil

Sample Depth: 1.5 ft

Lab Sample Id: 620194-007

Date Collected: 04.03.19 13.30

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00804	0.0178	0.00804	mg/kg	04.06.19 10:11	U	18
Toluene	108-88-3	<0.00416	0.0178	0.00416	mg/kg	04.06.19 10:11	U	18
Ethylbenzene	100-41-4	<0.00548	0.0178	0.00548	mg/kg	04.06.19 10:11	U	18
m_p-Xylenes	179601-23-1	<0.00607	0.0356	0.00607	mg/kg	04.06.19 10:11	U	18
o-Xylene	95-47-6	<0.00607	0.0178	0.00607	mg/kg	04.06.19 10:11	U	18
Xylenes, Total	1330-20-7	<0.00607		0.00607	mg/kg	04.06.19 10:11	U	
Total BTEX		<0.00416		0.00416	mg/kg	04.06.19 10:11	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	99	68 - 120	%		
a,a,a-Trifluorotoluene	108	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **ETT-NW-B @ 2.5'** Matrix: Soil Sample Depth: 2.5 ft  
 Lab Sample Id: 620194-008 Date Collected: 04.03.19 14.30 Date Received: 04.03.19 16.35  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	641	10.0	0.355	mg/kg	04.08.19 15:03		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	31.0	25.1	7.49	mg/kg	04.06.19 12:37		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.49	25.1	7.49	mg/kg	04.06.19 12:37	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	104	65 - 144	%		
n-Triacontane	117	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.268	3.95	0.268	mg/kg	04.06.19 10:35	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	106	76 - 123	%		
a,a,a-Trifluorotoluene	123	69 - 120	%		**





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **ETT-NW-B @ 2.5'**

Matrix: Soil

Sample Depth: 2.5 ft

Lab Sample Id: 620194-008

Date Collected: 04.03.19 14.30

Date Received: 04.03.19 16.35

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00893	0.0198	0.00893	mg/kg	04.06.19 10:35	U	20
Toluene	108-88-3	<0.00462	0.0198	0.00462	mg/kg	04.06.19 10:35	U	20
Ethylbenzene	100-41-4	<0.00609	0.0198	0.00609	mg/kg	04.06.19 10:35	U	20
m_p-Xylenes	179601-23-1	<0.00674	0.0395	0.00674	mg/kg	04.06.19 10:35	U	20
o-Xylene	95-47-6	<0.00674	0.0198	0.00674	mg/kg	04.06.19 10:35	U	20
Xylenes, Total	1330-20-7	<0.00674		0.00674	mg/kg	04.06.19 10:35	U	
Total BTEX		<0.00462		0.00462	mg/kg	04.06.19 10:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	110	68 - 120	%		
a,a,a-Trifluorotoluene	111	71 - 121	%		





# Certificate of Analytical Results

## 620194



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **7675190-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7675190-1-BLK Date Collected: Date Received:

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3084803 Date Prep: 04.05.19 14.00

Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	04.06.19 06:13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.06.19 06:13	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	83	65 - 144	%		
n-Triacontane	98	46 - 152	%		

Sample Id: **7675210-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7675210-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3084840 Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.06.19 05:21	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.06.19 05:21	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.06.19 05:21	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.06.19 05:21	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.06.19 05:21	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	107	71 - 121	%		





# Certificate of Analytical Results

## 620194



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **7675211-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7675211-1-BLK Date Collected: Date Received:  
Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3084842 Date Prep: 04.05.19 14.00  
Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.06.19 05:21	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	76 - 123	%		
a,a,a-Trifluorotoluene	119	69 - 120	%		

Sample Id: **7675239-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7675239-1-BLK Date Collected: Date Received:  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3084960 Date Prep: 04.08.19 12.42  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	04.08.19 09:40	U	1





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620194,

Project ID:

Lab Batch #: 3084840

Sample: 7675210-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 02:55

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0845	0.100	85	68-120	
a,a,a-Trifluorotoluene	1.69	2.00	85	71-121	

Lab Batch #: 3084840

Sample: 7675210-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0934	0.100	93	68-120	
a,a,a-Trifluorotoluene	1.97	2.00	99	71-121	

Lab Batch #: 3084840

Sample: 7675210-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 05:21

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.102	0.100	102	68-120	
a,a,a-Trifluorotoluene	2.14	2.00	107	71-121	

Lab Batch #: 3084840

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:10

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0911	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.72	1.76	98	71-121	

Lab Batch #: 3084840

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:34

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0905	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.85	1.90	97	71-121	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620194,

Project ID:

Lab Batch #: 3084803

Sample: 7675190-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:53

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.66	10.0	87	65-144	
n-Triacontane	9.90	10.0	99	46-152	

Lab Batch #: 3084803

Sample: 7675190-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 04:27

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.71	10.0	87	65-144	
n-Triacontane	9.69	10.0	97	46-152	

Lab Batch #: 3084803

Sample: 7675190-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 06:13

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.29	10.0	83	65-144	
n-Triacontane	9.79	10.0	98	46-152	

Lab Batch #: 3084803

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:23

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.5	10.0	115	65-144	
n-Triacontane	12.0	10.0	120	46-152	

Lab Batch #: 3084803

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:58

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.0	9.99	110	65-144	
n-Triacontane	12.0	9.99	120	46-152	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620194,

Project ID:

Lab Batch #: 3084842

Sample: 7675211-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:43

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0811	0.100	81	76-123	
a,a,a-Trifluorotoluene	1.99	2.00	100	69-120	

Lab Batch #: 3084842

Sample: 7675211-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 04:08

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	76-123	
a,a,a-Trifluorotoluene	2.45	2.00	123	69-120	**

Lab Batch #: 3084842

Sample: 7675211-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 05:21

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0995	0.100	100	76-123	
a,a,a-Trifluorotoluene	2.37	2.00	119	69-120	

Lab Batch #: 3084842

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:58

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.108	0.100	108	76-123	
a,a,a-Trifluorotoluene	2.44	1.96	124	69-120	**

Lab Batch #: 3084842

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:23

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0831	0.100	83	76-123	
a,a,a-Trifluorotoluene	1.64	1.78	92	69-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620194

Project ID:

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084840

Sample: 7675210-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00904	2.00	1.97	99	2.00	1.94	97	2	55-120	20	
Toluene	<0.00468	2.00	1.94	97	2.00	1.88	94	3	77-120	20	
Ethylbenzene	<0.00616	2.00	1.94	97	2.00	1.89	95	3	77-120	20	
m_p-Xylenes	<0.00682	4.00	4.01	100	4.00	3.89	97	3	78-120	20	
o-Xylene	<0.00682	2.00	2.05	103	2.00	2.01	101	2	78-120	20	

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084803

Sample: 7675190-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Diesel Range Organics (DRO)	<7.48	100	105	105	100	104	104	1	63-139	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620194

Project ID:

Analyst: JYM

Date Prepared: 04/08/2019

Date Analyzed: 04/08/2019

Lab Batch ID: 3084960

Sample: 7675239-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.354	100	102	102	100	102	102	0	80-120	20	

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084842

Sample: 7675211-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<0.271	20.0	18.8	94	20.0	17.9	90	5	35-129	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes

Version: 1.0%





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620194

Project ID:

Lab Batch ID: 3084840

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00794	1.76	1.72	98	1.90	1.87	98	8	54-120	25	
Toluene	<0.00411	1.76	1.73	98	1.90	1.88	99	8	57-120	25	
Ethylbenzene	<0.00541	1.76	1.71	97	1.90	1.85	97	8	58-131	25	
m_p-Xylenes	<0.00599	3.51	3.49	99	3.80	3.80	100	9	62-124	25	
o-Xylene	<0.00599	1.76	1.74	99	1.90	1.91	101	9	62-124	25	

Lab Batch ID: 3084803

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	40.2	100	129	89	99.9	127	87	2	63-139	20	

Lab Batch ID: 3084960

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/08/2019

Date Prepared: 04/08/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	85.6	100	168	82	100	167	81	1	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620194

Project ID:

Lab Batch ID: 3084960

QC- Sample ID: 620236-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/08/2019

Date Prepared: 04/08/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.1	100	124	106	100	124	106	0	80-120	20	

Lab Batch ID: 3084842

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.266	19.6	17.9	91	17.8	16.0	90	11	35-129	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## CHAIN OF CUSTODY

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

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

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Xenco Job #		Matrix Codes								
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: NA more sweet								Xenco Quote #		Matrix Codes								
Company Address: 10 Delta Dr. Suite 150E Midland, TX 79705				Project Location: Loc, Co NM								Xenco Job #		Matrix Codes								
Email: bcooper@tresolutions.com 856-461-5356				Invoice To: Plains, Delmar, LP Bryan +								Xenco Job #		Matrix Codes								
Project Contact: Brian Cooper				Invoice To:								Xenco Job #		Matrix Codes								
Sampler's Name:												Xenco Job #		Matrix Codes								
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCl	NaOH/Zn	HNO3	H2SO4	NaOH	MeOH	NONE	TPH TX1005	Chloride E-900	NORM	TCI	TCI Benzene	TCI PCRA 8 Metals	TPH 8015 M Ext (NM)	STEX 8021 B	Field Comments
1	TT2-Comp 1 @ 3'	3'	4/3	12:00	S	1																1
2	TT2-Comp 2 @ 3'	3'	4/3	12:15	S	1																2
3	TT2-Comp 3 @ 3'	3'	4/3	12:20	S	1																3
4	TT2-Comp 4 @ 3'	3'	4/3	12:45	S	1																4
5	TT2-NW @ 1.5'	1.5'	4/3	1:00	S	1																5
6	TT2-EW @ 1.5'	1.5'	4/3	1:15	S	1																6
7	TT2-WW @ 1.5'	1.5'	4/3	1:30	S	1																7
8	ETT-NW-B @ 2.5'	2.5'	4/3	2:30	S	1																8
9																						
10																						

Data Deliverable Information			
Turnaround Time (Business days)	Level II Std QC	Level IV (Full Data Pkg / raw data)	Notes
<input type="checkbox"/> Same Day TAT	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Next Day EMERGENCY	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 2 Day EMERGENCY	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 3 Day EMERGENCY	<input type="checkbox"/>	<input type="checkbox"/>	
TAT Starts Day received by Lab, if received by 5:00 pm			

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY			
Relinquished by:	Relinquished By:	Relinquished By:	Relinquished By:
1	4/3/19 4:35	4/3/19 4:35	4/3/19 4:35
2			
3			
4			
5			

Custody Seal #			
Relinquished by:	Relinquished By:	Relinquished By:	Relinquished By:
1	4/3/19 4:35	4/3/19 4:35	4/3/19 4:35
2			
3			
4			
5			

On Ice			
Relinquished by:	Relinquished By:	Relinquished By:	Relinquished By:
1	4/3/19 4:35	4/3/19 4:35	4/3/19 4:35
2			
3			
4			
5			

Thermo. Corr. Factor			
Relinquished by:	Relinquished By:	Relinquished By:	Relinquished By:
1	4/3/19 4:35	4/3/19 4:35	4/3/19 4:35
2			
3			
4			
5			

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



## Inter-Office Shipment

IOS Number : **126051**

Date/Time: 04.05.2019 10:47      Created by: Brenda Ward

Lab# From: **Lubbock**      Delivery Priority:

Lab# To: **Houston**      Air Bill No.: 774902303624


Please send report to: Mike Kimmel

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424


E-Mail: mike.kimmel@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620194-001	S	TT2-Comp 1 @ 3'	04.03.2019 12:00	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-002	S	TT2-Comp 2 @ 3'	04.03.2019 12:15	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-003	S	TT2-Comp 3 @ 3'	04.03.2019 12:30	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-004	S	TT2-Comp 4 @ 3'	04.03.2019 12:45	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-005	S	TT2-NW @ 1.5'	04.03.2019 13:00	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-006	S	TT2-EW @ 1.5'	04.03.2019 13:15	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-007	S	TT2-WW @ 1.5'	04.03.2019 13:30	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	
620194-008	S	ETT-NW-B @ 2.5'	04.03.2019 14:30	E300	Inorganic Anions by EPA 300/300.1	04.09.2019	05.01.2019	MKI	CL	

## Inter Office Shipment or Sample Comments:

Relinquished By:   
Brenda Ward

Date Relinquished: 04.05.2019

Received By:   
Monica Shakhshir

Date Received: 04.06.2019 10:00

Cooler Temperature: 1.6





## Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 126051

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brenda Ward

Date Sent: 04/05/2019 10:47 AM

Received By: Monica Shakhshir

Date Received: 04/06/2019 10:00 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	1.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Monica Shakhshir

Date: 04/06/2019





Client: TRC Solutions/Environmental

Date/ Time Received: 04/03/2019 04:35:00 PM

Work Order #: 620194

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	4.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chloride sent to Stafford
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

  
Brenda Ward

Date: 04/05/2019

Checklist reviewed by:

  
Mike Kimmel

Date: 04/11/2019



# **Analytical Report 620204**

**for**

## **TRC Solutions/Environmental**

**Project Manager: Brian Cooper**

**NM Moore Sweet**

**11-APR-19**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)

Xenco-Lakeland: Florida (E84098)





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11-APR-19

Project Manager: **Brian Cooper**  
**TRC Solutions/Environmental**  
10 Desta Dr. Ste 150E  
Midland, TX 79705

Reference: XENCO Report No(s): **620204**  
**NM Moore Sweet**  
Project Address: Lea, Co. NM

**Brian Cooper:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620204. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 620204 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'Mike Kimmel', written over a light gray rectangular background.

**Mike Kimmel**  
Client Services Manager

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

*Certified and approved by numerous States and Agencies.*

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

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





## Sample Cross Reference 620204

TRC Solutions/Environmental, Midland, TX

NM Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WTT-NW-B @ 2	S	04-04-19 12:00	2 ft	620204-001
WTT-SW-B @ 2	S	04-04-19 12:15	2 ft	620204-002



**CASE NARRATIVE****Client Name: TRC Solutions/Environmental****Project Name: NM Moore Sweet**Project ID:  
Work Order Number(s): 620204Report Date: 11-APR-19  
Date Received: 04/04/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3084803 DRO-ORO By SW8015B

Surrogate Tricosane, Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 620204-001,620204-002.

Batch: LBA-3084840 BTEX by EPA 8021

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

Batch: LBA-3084842 TPH GRO by EPA 8015 Mod.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7675211-1-BSD,620194-001 S,620204-001.





# Certificate of Analytical Results

## 620204



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **WTT-NW-B @ 2** Matrix: Soil Sample Depth: 2 ft  
 Lab Sample Id: 620204-001 Date Collected: 04.04.19 12.00 Date Received: 04.04.19 15.52  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	100	9.92	0.351	mg/kg	04.08.19 17:15		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	86.5	25.0	7.47	mg/kg	04.06.19 16:46		1
Oil Range Hydrocarbons (ORO)	PHCG2835	16.0	25.0	7.47	mg/kg	04.06.19 16:46	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	164	65 - 144	%		**
n-Triacontane	173	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.250	3.68	0.250	mg/kg	04.06.19 10:59	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	76 - 123	%		
a,a,a-Trifluorotoluene	121	69 - 120	%		**





# Certificate of Analytical Results

## 620204



**TRC Solutions/Environmental, Midland, TX**

NM Moore Sweet

Sample Id: **WTT-NW-B @ 2**

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 620204-001

Date Collected: 04.04.19 12.00

Date Received: 04.04.19 15.52

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00832	0.0184	0.00832	mg/kg	04.06.19 10:59	U	18
Toluene	108-88-3	<0.00431	0.0184	0.00431	mg/kg	04.06.19 10:59	U	18
Ethylbenzene	100-41-4	<0.00567	0.0184	0.00567	mg/kg	04.06.19 10:59	U	18
m,p-Xylenes	179601-23-1	<0.00628	0.0368	0.00628	mg/kg	04.06.19 10:59	U	18
o-Xylene	95-47-6	<0.00628	0.0184	0.00628	mg/kg	04.06.19 10:59	U	18
Total Xylenes	1330-20-7	<0.00628		0.00628	mg/kg	04.06.19 10:59	U	
Total BTEX		<0.00431		0.00431	mg/kg	04.06.19 10:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	68 - 120	%		
a,a,a-Trifluorotoluene	110	71 - 121	%		





# Certificate of Analytical Results

## 620204



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **WTT-SW-B @ 2** Matrix: Soil Sample Depth: 2 ft  
 Lab Sample Id: 620204-002 Date Collected: 04.04.19 12.15 Date Received: 04.04.19 15.52  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3084960 Date Prep: 04.08.19 12.42  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	159	9.94	0.352	mg/kg	04.08.19 17:24		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084803 Date Prep: 04.05.19 14.00  
 Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	76.3	24.9	7.44	mg/kg	04.06.19 17:21		1
Oil Range Hydrocarbons (ORO)	PHCG2835	11.0	24.9	7.44	mg/kg	04.06.19 17:21	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	146	65 - 144	%		**
n-Triacontane	160	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3084842 Date Prep: 04.05.19 14.00  
 Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.266	3.92	0.266	mg/kg	04.06.19 18:19	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	76 - 123	%		
a,a,a-Trifluorotoluene	108	69 - 120	%		





# Certificate of Analytical Results

## 620204



TRC Solutions/Environmental, Midland, TX

NM Moore Sweet

Sample Id: WTT-SW-B @ 2

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 620204-002

Date Collected: 04.04.19 12.15

Date Received: 04.04.19 15.52

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3084840

Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00886	0.0196	0.00886	mg/kg	04.06.19 18:19	U	20
Toluene	108-88-3	<0.00459	0.0196	0.00459	mg/kg	04.06.19 18:19	U	20
Ethylbenzene	100-41-4	<0.00604	0.0196	0.00604	mg/kg	04.06.19 18:19	U	20
<b>m,p-Xylenes</b>	179601-23-1	<b>0.00980</b>	0.0392	0.00669	mg/kg	04.06.19 18:19	J	20
o-Xylene	95-47-6	<0.00669	0.0196	0.00669	mg/kg	04.06.19 18:19	U	20
<b>Total Xylenes</b>	1330-20-7	<b>0.00980</b>		0.00669	mg/kg	04.06.19 18:19	J	
<b>Total BTEX</b>		<b>0.00980</b>		0.00459	mg/kg	04.06.19 18:19	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	97	71 - 121	%		





# Certificate of Analytical Results

## 620204



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **7675190-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7675190-1-BLK Date Collected: Date Received:

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3084803 Date Prep: 04.05.19 14.00

Prep seq: 7675190

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	04.06.19 06:13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.06.19 06:13	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	83	65 - 144	%		
n-Triacontane	98	46 - 152	%		

Sample Id: **7675210-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7675210-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3084840 Date Prep: 04.05.19 14.00

Prep seq: 7675210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.06.19 05:21	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.06.19 05:21	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.06.19 05:21	U	20
m,p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.06.19 05:21	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.06.19 05:21	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	107	71 - 121	%		





# Certificate of Analytical Results

## 620204



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **7675211-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7675211-1-BLK Date Collected: Date Received:  
Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3084842 Date Prep: 04.05.19 14.00  
Prep seq: 7675211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.06.19 05:21	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	76 - 123	%		
a,a,a-Trifluorotoluene	119	69 - 120	%		

Sample Id: **7675239-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7675239-1-BLK Date Collected: Date Received:  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3084960 Date Prep: 04.08.19 12.42  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7675239

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	04.08.19 09:40	U	1





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620204,

Project ID:

Lab Batch #: 3084840

Sample: 7675210-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 02:55

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0845	0.100	85	68-120	
a,a,a-Trifluorotoluene	1.69	2.00	85	71-121	

Lab Batch #: 3084840

Sample: 7675210-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0934	0.100	93	68-120	
a,a,a-Trifluorotoluene	1.97	2.00	99	71-121	

Lab Batch #: 3084840

Sample: 7675210-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 05:21

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.102	0.100	102	68-120	
a,a,a-Trifluorotoluene	2.14	2.00	107	71-121	

Lab Batch #: 3084840

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:10

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0911	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.72	1.76	98	71-121	

Lab Batch #: 3084840

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:34

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0905	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.85	1.90	97	71-121	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620204,

Project ID:

Lab Batch #: 3084803

Sample: 7675190-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:53

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.66	10.0	87	65-144	
n-Triacontane	9.90	10.0	99	46-152	

Lab Batch #: 3084803

Sample: 7675190-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 04:27

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.71	10.0	87	65-144	
n-Triacontane	9.69	10.0	97	46-152	

Lab Batch #: 3084803

Sample: 7675190-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 06:13

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.29	10.0	83	65-144	
n-Triacontane	9.79	10.0	98	46-152	

Lab Batch #: 3084803

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:23

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.5	10.0	115	65-144	
n-Triacontane	12.0	10.0	120	46-152	

Lab Batch #: 3084803

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:58

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.0	9.99	110	65-144	
n-Triacontane	12.0	9.99	120	46-152	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 620204,

Project ID:

Lab Batch #: 3084842

Sample: 7675211-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 03:43

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0811	0.100	81	76-123	
a,a,a-Trifluorotoluene	1.99	2.00	100	69-120	

Lab Batch #: 3084842

Sample: 7675211-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 04:08

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	76-123	
a,a,a-Trifluorotoluene	2.45	2.00	123	69-120	**

Lab Batch #: 3084842

Sample: 7675211-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/06/19 05:21

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0995	0.100	100	76-123	
a,a,a-Trifluorotoluene	2.37	2.00	119	69-120	

Lab Batch #: 3084842

Sample: 620194-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 06:58

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.108	0.100	108	76-123	
a,a,a-Trifluorotoluene	2.44	1.96	124	69-120	**

Lab Batch #: 3084842

Sample: 620194-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/06/19 07:23

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0831	0.100	83	76-123	
a,a,a-Trifluorotoluene	1.64	1.78	92	69-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620204

Project ID:

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084840

Sample: 7675210-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00904	2.00	1.97	99	2.00	1.94	97	2	55-120	20	
Toluene	<0.00468	2.00	1.94	97	2.00	1.88	94	3	77-120	20	
Ethylbenzene	<0.00616	2.00	1.94	97	2.00	1.89	95	3	77-120	20	
m,p-Xylenes	<0.00682	4.00	4.01	100	4.00	3.89	97	3	78-120	20	
o-Xylene	<0.00682	2.00	2.05	103	2.00	2.01	101	2	78-120	20	

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084803

Sample: 7675190-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Diesel Range Organics (DRO)	<7.48	100	105	105	100	104	104	1	63-139	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620204

Project ID:

Analyst: JYM

Date Prepared: 04/08/2019

Date Analyzed: 04/08/2019

Lab Batch ID: 3084960

Sample: 7675239-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.354	100	102	102	100	102	102	0	80-120	20	

Analyst: MIT

Date Prepared: 04/05/2019

Date Analyzed: 04/06/2019

Lab Batch ID: 3084842

Sample: 7675211-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<0.271	20.0	18.8	94	20.0	17.9	90	5	35-129	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes

Version: 1.0%





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620204

Project ID:

Lab Batch ID: 3084840

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00794	1.76	1.72	98	1.90	1.87	98	8	54-120	25	
Toluene	<0.00411	1.76	1.73	98	1.90	1.88	99	8	57-120	25	
Ethylbenzene	<0.00541	1.76	1.71	97	1.90	1.85	97	8	58-131	25	
m,p-Xylenes	<0.00599	3.51	3.49	99	3.80	3.80	100	9	62-124	25	
o-Xylene	<0.00599	1.76	1.74	99	1.90	1.91	101	9	62-124	25	

Lab Batch ID: 3084803

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	40.2	100	129	89	99.9	127	87	2	63-139	20	

Lab Batch ID: 3084960

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/08/2019

Date Prepared: 04/08/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	85.6	100	168	82	100	167	81	1	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 620204

Project ID:

Lab Batch ID: 3084960

QC- Sample ID: 620236-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/08/2019

Date Prepared: 04/08/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.1	100	124	106	100	124	106	0	80-120	20	

Lab Batch ID: 3084842

QC- Sample ID: 620194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/06/2019

Date Prepared: 04/05/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.266	19.6	17.9	91	17.8	16.0	90	11	35-129	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

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



## Chain of Custody

**Work Order No.:**

www.xenco.com Page \_\_\_\_ of \_\_\_\_

### Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

**State of Project:**

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐Deliverables: ☐ EDD ☐ ADaPT ☐ Other:

## ANALYSIS REQUEST

### Work Order Notes

6capp@tr.solutions,  
cstankey@tr.solutions  
ajgrows@pacip.com  
c16yent@pacip.com

TAT starts the day received by the lab, if received by 4:30pm

### Sample Comments

12

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Cu	Co	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn					

Signature: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions for service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1.			4/4/08			
5.						

Revised Date 05/14/18 Rev. 2018 1



## Inter-Office Shipment


IOS Number : **126050**


Date/Time: 04.05.2019 10:44      Created by: Brenda Ward  
Lab# From: **Lubbock**      Delivery Priority:  
Lab# To: **Houston**      Air Bill No.: 774902303624

Please send report to: Mike Kimmel  
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424  
E-Mail: mike.kimmel@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620204-001	S	WTT-NW-B @ 2	04.04.2019 12:00	E300	Inorganic Anions by EPA 300/300.1	04.10.2019	05.02.2019	MKI	CL	
620204-002	S	WTT-SW-B @ 2	04.04.2019 12:15	E300	Inorganic Anions by EPA 300/300.1	04.10.2019	05.02.2019	MKI	CL	

## Inter Office Shipment or Sample Comments:

Relinquished By:   
Brenda Ward  
Date Relinquished: 04.05.2019

Received By:   
Monica Shakhshir  
Date Received: 04.06.2019 10:00  
Cooler Temperature: 1.6





## Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 126050

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brenda Ward

Date Sent: 04/05/2019 10:44 AM

Received By: Monica Shakhshir

Date Received: 04/06/2019 10:00 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	1.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Monica Shakhshir

Date: 04/06/2019





# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions/Environmental

Date/ Time Received: 04/04/2019 03:52:00 PM

Work Order #: 620204

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

**Sample Receipt Checklist****Comments**

#1 *Temperature of cooler(s)?	5.1	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chloride sent to Stafford
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#: IR-3

Checklist completed by:

Brenda Ward  
Brenda Ward

Date: 04/05/2019

Checklist reviewed by:

Mike Kimmel  
Mike Kimmel

Date: 04/11/2019



# **Analytical Report 621277**

**for**

## **TRC Solutions/Environmental**

**Project Manager: Curt Stanely**

**NM Moore Sweet**

**07-MAY-19**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)





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07-MAY-19

Project Manager: **Curt Stanely**  
**TRC Solutions/Environmental**  
10 Desta Dr. Ste 150E  
Midland, TX 79705

Reference: XENCO Report No(s): **621277**  
**NM Moore Sweet**  
Project Address:

**Curt Stanely :**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 621277. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 621277 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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



**Sample Cross Reference 621277****TRC Solutions/Environmental, Midland, TX**

NM Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
STT-NW-B @ 6'	S	04-16-19 10:00	6 In	621277-001
STT-EW-B @ 6'	S	04-16-19 10:15	6 In	621277-002
STT-SW-B @ 6'	S	04-16-19 10:30	6 In	621277-003
STT-WW-B @ 6'	S	04-16-19 10:45	6 In	621277-004



**CASE NARRATIVE****Client Name: TRC Solutions/Environmental****Project Name: NM Moore Sweet**Project ID:  
Work Order Number(s): 621277Report Date: 07-MAY-19  
Date Received: 04/16/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

TPH method blank had detected result above the SDL but below the MQL; therefore the data was accepted.

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

None

**Analytical non conformances and comments:**

Batch: LBA-3086071 Benzene By EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621277-001 S,621277-001 SD,621277-002,621277-001.

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

Lab Sample ID 621277-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Benzene, Ethylbenzene, Toluene, m\_p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 621277-001, -002, -003, -004.

The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m\_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3086074 TPH GRO by EPA 8015 Mod.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621277-001 S,621277-001 SD,621277-001.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7676005-1-BSD.

Batch: LBA-3086410 TPH GRO by EPA 8015 Mod.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621277-004.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7676207-1-BLK,621518-001 SD.



**CASE NARRATIVE****Client Name: TRC Solutions/Environmental****Project Name: NM Moore Sweet**

Project ID:  
Work Order Number(s): 621277

Report Date: 07-MAY-19  
Date Received: 04/16/2019

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Batch: LBA-3086429 DRO-ORO By SW8015B

Lab Sample ID 621277-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 621277-001, -002, -003, -004.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Surrogate n-Triacontane recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7676032-1-BKS, 621277-001.

Surrogate Tricosane recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7676032-1-BSD.

Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621277-002, 621277-003, 621277-004.

Surrogate Tricosane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621277-002, 621277-004.

Lab Sample ID 621277-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 621277-001, -002, -003, -004.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.





# Certificate of Analytical Results

## 621277



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **STT-NW-B @ 6'** Matrix: Soil Sample Depth: 6 In  
 Lab Sample Id: 621277-001 Date Collected: 04.16.19 10.00 Date Received: 04.16.19 14.13  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3086040 Date Prep: 04.17.19 14.17  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	48.0	10.0	0.354	mg/kg	04.17.19 18:25		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086429 Date Prep: 04.17.19 13.00  
 Prep seq: 7676032

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	1210	24.9	7.44	mg/kg	04.17.19 22:06	X	1
Oil Range Hydrocarbons (ORO)	PHCG2835	28.9	24.9	7.44	mg/kg	04.17.19 22:06		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	107	65 - 144	%		
n-Triacontane	44	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086074 Date Prep: 04.17.19 13.00  
 Prep seq: 7676005

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	126	8.00	0.542	mg/kg	04.17.19 21:28		40

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	176	76 - 123	%		**
a,a,a-Trifluorotoluene	94	69 - 120	%		





# Certificate of Analytical Results

## 621277



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: <b>STT-NW-B @ 6'</b>	Matrix: Soil	Sample Depth: 6 In
Lab Sample Id: 621277-001	Date Collected: 04.16.19 10.00	Date Received: 04.16.19 14.13
Analytical Method: BTEX by EPA 8021		Prep Method: 5030B
Analyst: MIT	% Moist:	Tech: MIT
Seq Number: 3086071	Date Prep: 04.17.19 13.00	
	Prep seq: 7676004	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0181	0.0400	0.0181	mg/kg	04.17.19 21:28	UX	40
Toluene	108-88-3	<0.00936	0.0400	0.00936	mg/kg	04.17.19 21:28	UX	40
<b>Ethylbenzene</b>	100-41-4	<b>0.0200</b>	0.0400	0.0123	mg/kg	04.17.19 21:28	JX	40
<b>m_p-Xylenes</b>	179601-23-1	<b>0.364</b>	0.0800	0.0136	mg/kg	04.17.19 21:28	X	40
o-Xylene	95-47-6	<0.0136	0.0400	0.0136	mg/kg	04.17.19 21:28	UX	40
<b>Xylenes, Total</b>	1330-20-7	<b>0.364</b>		0.0136	mg/kg	04.17.19 21:28		
<b>Total BTEX</b>		<b>0.384</b>		0.00936	mg/kg	04.17.19 21:28		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	126	68 - 120	%		**
a,a,a-Trifluorotoluene	79	71 - 121	%		





# Certificate of Analytical Results

## 621277



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **STT-EW-B @ 6'** Matrix: Soil Sample Depth: 6 In  
 Lab Sample Id: 621277-002 Date Collected: 04.16.19 10.15 Date Received: 04.16.19 14.13  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3086040 Date Prep: 04.17.19 14.17  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1770	10.0	0.354	mg/kg	04.17.19 18:33		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086429 Date Prep: 04.17.19 13.00  
 Prep seq: 7676032

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	5470	125	37.3	mg/kg	04.18.19 00:29		5
Oil Range Hydrocarbons (ORO)	PHCG2835	145	125	37.3	mg/kg	04.18.19 00:29		5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	388	65 - 144	%		**
n-Triacontane	199	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086410 Date Prep: 04.18.19 15.00  
 Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	526	77.4	5.24	mg/kg	04.20.19 20:43		387

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	121	76 - 123	%		
a,a,a-Trifluorotoluene	114	69 - 120	%		





# Certificate of Analytical Results

## 621277



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **STT-EW-B @ 6'**

Matrix: Soil

Sample Depth: 6 In

Lab Sample Id: 621277-002

Date Collected: 04.16.19 10.15

Date Received: 04.16.19 14.13

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086071

Date Prep: 04.17.19 13.00

Prep seq: 7676004

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
<b>Benzene</b>	71-43-2	<b>0.0598</b>	0.0996	0.0450	mg/kg	04.17.19 23:55	J	100
<b>Toluene</b>	108-88-3	<b>3.07</b>	0.0996	0.0233	mg/kg	04.17.19 23:55		100
<b>Ethylbenzene</b>	100-41-4	<b>4.56</b>	0.0996	0.0307	mg/kg	04.17.19 23:55		100
<b>m_p-Xylenes</b>	179601-23-1	<b>16.1</b>	0.199	0.0340	mg/kg	04.17.19 23:55		100
<b>o-Xylene</b>	95-47-6	<b>8.35</b>	0.0996	0.0340	mg/kg	04.17.19 23:55		100
<b>Xylenes, Total</b>	1330-20-7	<b>24.5</b>		0.0340	mg/kg	04.17.19 23:55		
<b>Total BTEX</b>		<b>32.1</b>		0.0233	mg/kg	04.17.19 23:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	152	68 - 120	%		**
a,a,a-Trifluorotoluene	76	71 - 121	%		





# Certificate of Analytical Results

## 621277



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **STT-SW-B @ 6'** Matrix: Soil Sample Depth: 6 In  
 Lab Sample Id: 621277-003 Date Collected: 04.16.19 10.30 Date Received: 04.16.19 14.13  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3086040 Date Prep: 04.17.19 14.17  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	99.1	10.0	0.354	mg/kg	04.17.19 18:42		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086429 Date Prep: 04.17.19 13.00  
 Prep seq: 7676032

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	57.2	25.2	7.54	mg/kg	04.18.19 01:04	B	1
Oil Range Hydrocarbons (ORO)	PHCG2835	8.18	25.2	7.54	mg/kg	04.18.19 01:04	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	142	65 - 144	%		
n-Triacontane	159	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086074 Date Prep: 04.17.19 13.00  
 Prep seq: 7676005

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	14.2	3.99	0.270	mg/kg	04.18.19 00:19		20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	82	76 - 123	%		
a,a,a-Trifluorotoluene	84	69 - 120	%		





# Certificate of Analytical Results

## 621277



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **STT-SW-B @ 6'**

Matrix: Soil

Sample Depth: 6 In

Lab Sample Id: 621277-003

Date Collected: 04.16.19 10.30

Date Received: 04.16.19 14.13

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086071

Date Prep: 04.17.19 13.00

Prep seq: 7676004

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00902	0.0200	0.00902	mg/kg	04.18.19 00:19	U	20
Toluene	108-88-3	<0.00467	0.0200	0.00467	mg/kg	04.18.19 00:19	U	20
Ethylbenzene	100-41-4	<b>0.0838</b>	0.0200	0.00615	mg/kg	04.18.19 00:19		20
m_p-Xylenes	179601-23-1	<b>0.186</b>	0.0399	0.00681	mg/kg	04.18.19 00:19		20
o-Xylene	95-47-6	<b>0.0499</b>	0.0200	0.00681	mg/kg	04.18.19 00:19		20
Xylenes, Total	1330-20-7	<b>0.236</b>		0.00681	mg/kg	04.18.19 00:19		
Total BTEX		<b>0.320</b>		0.00467	mg/kg	04.18.19 00:19		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	75	68 - 120	%		
a,a,a-Trifluorotoluene	71	71 - 121	%		





# Certificate of Analytical Results

## 621277



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **STT-WW-B @ 6'** Matrix: Soil Sample Depth: 6 In  
 Lab Sample Id: 621277-004 Date Collected: 04.16.19 10.45 Date Received: 04.16.19 14.13  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3086040 Date Prep: 04.17.19 14.17  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	63.3	10.0	0.354	mg/kg	04.17.19 18:51		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086429 Date Prep: 04.17.19 13.00  
 Prep seq: 7676032

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	6280	124	37.2	mg/kg	04.18.19 01:40		5
Oil Range Hydrocarbons (ORO)	PHCG2835	196	124	37.2	mg/kg	04.18.19 01:40		5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	837	65 - 144	%		**
n-Triacontane	484	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086410 Date Prep: 04.18.19 15.00  
 Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	661	73.8	5.00	mg/kg	04.20.19 21:07		369

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	163	76 - 123	%		**
a,a,a-Trifluorotoluene	109	69 - 120	%		





# Certificate of Analytical Results

## 621277



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **STT-WW-B @ 6'**

Matrix: Soil

Sample Depth: 6 In

Lab Sample Id: 621277-004

Date Collected: 04.16.19 10.45

Date Received: 04.16.19 14.13

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086071

Date Prep: 04.17.19 13.00

Prep seq: 7676004

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0385	0.0852	0.0385	mg/kg	04.18.19 00:43	U	85
Toluene	108-88-3	<0.0199	0.0852	0.0199	mg/kg	04.18.19 00:43	U	85
Ethylbenzene	100-41-4	<b>0.698</b>	0.0852	0.0262	mg/kg	04.18.19 00:43		85
m_p-Xylenes	179601-23-1	<b>4.12</b>	0.170	0.0290	mg/kg	04.18.19 00:43		85
o-Xylene	95-47-6	<0.0290	0.0852	0.0290	mg/kg	04.18.19 00:43	U	85
Xylenes, Total	1330-20-7	<b>4.12</b>		0.0290	mg/kg	04.18.19 00:43		
Total BTEX		<b>4.82</b>		0.0199	mg/kg	04.18.19 00:43		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	116	68 - 120	%		
a,a,a-Trifluorotoluene	93	71 - 121	%		





# Certificate of Analytical Results

## 621277



### TRC Solutions/Environmental, Midland, TX

#### NM Moore Sweet

Sample Id: **7675946-1-BLK** Matrix: Solid Sample Depth:  
 Lab Sample Id: 7675946-1-BLK Date Collected: Date Received:  
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
 Analyst: JYM % Moist: Tech: JYM  
 Seq Number: 3086040 Date Prep: 04.17.19 14.17  
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7675946

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	04.17.19 16:31	U	1

Sample Id: **7676004-1-BLK** Matrix: Solid Sample Depth:  
 Lab Sample Id: 7676004-1-BLK Date Collected: Date Received:  
 Analytical Method: BTEX by EPA 8021 Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086071 Date Prep: 04.17.19 13.00  
 Prep seq: 7676004

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.17.19 21:04	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.17.19 21:04	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.17.19 21:04	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.17.19 21:04	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.17.19 21:04	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	81	68 - 120	%		
a,a,a-Trifluorotoluene	82	71 - 121	%		

Sample Id: **7676005-1-BLK** Matrix: Solid Sample Depth:  
 Lab Sample Id: 7676005-1-BLK Date Collected: Date Received:  
 Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
 Analyst: MIT % Moist: Tech: MIT  
 Seq Number: 3086074 Date Prep: 04.17.19 13.00  
 Prep seq: 7676005

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.17.19 21:04	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	86	76 - 123	%		
a,a,a-Trifluorotoluene	98	69 - 120	%		





# Certificate of Analytical Results

## 621277



**TRC Solutions/Environmental, Midland, TX**  
NM Moore Sweet

Sample Id: **7676032-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7676032-1-BLK Date Collected: Date Received:  
Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086429 Date Prep: 04.17.19 13.00  
Prep seq: 7676032

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	11.7	25.0	7.48	mg/kg	04.17.19 21:29	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.17.19 21:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	111	65 - 144	%		

Sample Id: **7676207-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7676207-1-BLK Date Collected: Date Received:  
Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.20.19 16:40	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	76 - 123	%		
a,a,a-Trifluorotoluene	128	69 - 120	%		**





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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





# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621277,

Project ID:

Lab Batch #: 3086071

Sample: 7676004-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 18:38

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0839	0.100	84	68-120	
a,a,a-Trifluorotoluene	1.56	2.00	78	71-121	

Lab Batch #: 3086071

Sample: 7676004-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 19:03

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0849	0.100	85	68-120	
a,a,a-Trifluorotoluene	1.60	2.00	80	71-121	

Lab Batch #: 3086071

Sample: 7676004-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 21:04

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0810	0.100	81	68-120	
a,a,a-Trifluorotoluene	1.63	2.00	82	71-121	

Lab Batch #: 3086071

Sample: 621277-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 21:53

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.139	0.100	139	68-120	**
a,a,a-Trifluorotoluene	3.29	3.96	83	71-121	

Lab Batch #: 3086071

Sample: 621277-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 22:17

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.132	0.100	132	68-120	**
a,a,a-Trifluorotoluene	3.17	3.98	80	71-121	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621277,

Project ID:

Lab Batch #: 3086429

Sample: 7676032-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 19:02

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
n-Triacontane	1.09	10.0	11	46-152	**

Lab Batch #: 3086429

Sample: 7676032-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 19:38

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	0.680	10.0	7	65-144	**

Lab Batch #: 3086429

Sample: 7676032-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 21:29

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.1	10.0	111	65-144	

Lab Batch #: 3086429

Sample: 621277-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 22:42

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	9.04	10.0	90	65-144	
n-Triacontane	4.78	10.0	48	46-152	

Lab Batch #: 3086429

Sample: 621277-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 23:17

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	14.1	10.1	140	65-144	
n-Triacontane	6.32	10.1	63	46-152	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621277,

Project ID:

Lab Batch #: 3086074

Sample: 7676005-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 19:27

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0983	0.100	98	76-123	
a,a,a-Trifluorotoluene	2.11	2.00	106	69-120	

Lab Batch #: 3086074

Sample: 7676005-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 19:51

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.111	0.100	111	76-123	
a,a,a-Trifluorotoluene	2.55	2.00	128	69-120	**

Lab Batch #: 3086074

Sample: 7676005-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/19 21:04

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0860	0.100	86	76-123	
a,a,a-Trifluorotoluene	1.95	2.00	98	69-120	

Lab Batch #: 3086074

Sample: 621277-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 22:42

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.181	0.100	181	76-123	**
a,a,a-Trifluorotoluene	3.80	3.95	96	69-120	

Lab Batch #: 3086074

Sample: 621277-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/19 23:06

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.187	0.100	187	76-123	**
a,a,a-Trifluorotoluene	3.81	3.85	99	69-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621277,

Project ID:

Lab Batch #: 3086410

Sample: 7676207-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 15:04

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0897	0.100	90	76-123	
a,a,a-Trifluorotoluene	2.07	2.00	104	69-120	

Lab Batch #: 3086410

Sample: 7676207-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 15:28

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0893	0.100	89	76-123	
a,a,a-Trifluorotoluene	2.12	2.00	106	69-120	

Lab Batch #: 3086410

Sample: 7676207-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 16:40

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	76-123	
a,a,a-Trifluorotoluene	2.56	2.00	128	69-120	**

Lab Batch #: 3086410

Sample: 621518-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 18:17

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0820	0.100	82	76-123	
a,a,a-Trifluorotoluene	1.71	1.80	95	69-120	

Lab Batch #: 3086410

Sample: 621518-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 18:42

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.109	0.100	109	76-123	
a,a,a-Trifluorotoluene	2.47	1.93	128	69-120	**

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621277

Project ID:

Analyst: MIT

Date Prepared: 04/17/2019

Date Analyzed: 04/17/2019

Lab Batch ID: 3086071

Sample: 7676004-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00904	2.00	2.00	100	2.00	2.01	101	0	55-120	20	
Toluene	<0.00468	2.00	1.95	98	2.00	1.95	98	0	77-120	20	
Ethylbenzene	<0.00616	2.00	1.94	97	2.00	1.96	98	1	77-120	20	
m_p-Xylenes	<0.00682	4.00	3.87	97	4.00	3.91	98	1	78-120	20	
o-Xylene	<0.00682	2.00	1.97	99	2.00	1.99	100	1	78-120	20	

Analyst: MIT

Date Prepared: 04/17/2019

Date Analyzed: 04/17/2019

Lab Batch ID: 3086429

Sample: 7676032-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Diesel Range Organics (DRO)	11.7	100	118	118	100	122	122	3	63-139	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621277

Project ID:

Analyst: JYM

Date Prepared: 04/17/2019

Date Analyzed: 04/17/2019

Lab Batch ID: 3086040

Sample: 7675946-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.354	100	102	102	100	102	102	0	80-120	20	

Analyst: MIT

Date Prepared: 04/17/2019

Date Analyzed: 04/17/2019

Lab Batch ID: 3086074

Sample: 7676005-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<0.271	20.0	19.4	97	20.0	21.0	105	8	35-129	20	

Analyst: MIT

Date Prepared: 04/18/2019

Date Analyzed: 04/20/2019

Lab Batch ID: 3086410

Sample: 7676207-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<0.271	20.0	19.1	96	20.0	18.3	92	4	35-129	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621277

Project ID:

Lab Batch ID: 3086071

QC- Sample ID: 621277-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2019

Date Prepared: 04/17/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0179	3.96	1.78	45	3.98	1.77	44	1	54-120	25	X
Toluene	<0.00927	3.96	1.70	43	3.98	1.69	42	1	57-120	25	X
Ethylbenzene	0.0200	3.96	1.73	43	3.98	1.78	44	3	58-131	25	X
m_p-Xylenes	0.364	7.92	3.87	44	7.95	4.09	47	6	62-124	25	X
o-Xylene	<0.0135	3.96	1.96	49	3.98	1.98	50	1	62-124	25	X

Lab Batch ID: 3086429

QC- Sample ID: 621277-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2019

Date Prepared: 04/17/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	1210	100	1480	270	101	1570	356	6	63-139	20	X

Lab Batch ID: 3086040

QC- Sample ID: 620960-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2019

Date Prepared: 04/17/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	22.6	100	121	98	100	121	98	0	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621277

Project ID:

Lab Batch ID: 3086074

QC- Sample ID: 621277-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2019

Date Prepared: 04/17/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	126	39.5	148	56	38.5	150	62	1	35-129	20	

Lab Batch ID: 3086410

QC- Sample ID: 621518-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/20/2019

Date Prepared: 04/18/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.243	18.0	15.2	84	19.3	17.6	91	15	35-129	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





# Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Work Order No: 621277

www.xenco.com Page 1 of 1

Program: ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Reporting: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: ☐ EDD ☐ ADAPT ☐ Other:

Project Manager: Kurt Stanley

Company Name: TRC Solutions

Address: 10 Desha Dr. Suite 150E

City, State ZIP: Midland, TX 79705

Phone: 806-402-5356

Bill to: (if different) Canille Bryant

Company Name: Plains Pipeline, LP

Address:

City, State ZIP:

Email:

## ANALYSIS REQUEST

Turn Around

Project Name:	Project Number:	P.O. Number:	Sampler's Name:	Temp Blank:	Yes	No	Wet Ice:	Yes	No	Thermometer ID	Number of Containers	Work Order Notes
NM Moore Sweet L			Brian Campbell	49	4.8							bcauser@trcsolutions.com
				Yes	No							Estimotey @ "
				Yes	No							ALG rows @ pgs 1 p 1 can
				Yes	No							CLBryan @ "
				Yes	No							TAT starts the day received by the lab, if received by 4:30pm
				Yes	No							Sample Comments
STT-NW-B @ 6'	5	4/16	10:00	6'								
STT-EW-B @ 6'	5	4/16	10:15	6'								
STT-SW-B @ 6'	5	4/16	10:30	6'								
STT-WW-B @ 6'	5	4/16	10:45	6'								

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn  
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/16/19 4:33			
		4			
		6			



## Inter-Office Shipment


IOS Number : **37182**

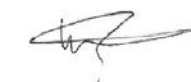
Date/Time: 04.16.2019 15:37      Created by: Brenda Ward  
 Lab# From: **Lubbock**      Delivery Priority:  
 Lab# To: **Houston**      Air Bill No.: 774988381500

Please send report to: Mike Kimmel  
 Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424  
 E-Mail: mike.kimmel@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
621277-001	S	STT-NW-B @ 6'	04.16.2019 10:00	E300	Inorganic Anions by EPA 300/300.1	04.22.2019	05.14.2019	MKI	CL	
621277-002	S	STT-EW-B @ 6'	04.16.2019 10:15	E300	Inorganic Anions by EPA 300/300.1	04.22.2019	05.14.2019	MKI	CL	
621277-003	S	STT-SW-B @ 6'	04.16.2019 10:30	E300	Inorganic Anions by EPA 300/300.1	04.22.2019	05.14.2019	MKI	CL	
621277-004	S	STT-WW-B @ 6'	04.16.2019 10:45	E300	Inorganic Anions by EPA 300/300.1	04.22.2019	05.14.2019	MKI	CL	

## Inter Office Shipment or Sample Comments:

Relinquished By:   
 Brenda Ward  
 Date Relinquished: 04.16.2019

Received By:   
 Taha Hedib  
 Date Received: 04.17.2019 09:45  
 Cooler Temperature: 2.8





## Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 37182

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou-068

Sent By: Brenda Ward

Date Sent: 04/16/2019 03:37 PM

Received By: Taha Hedib

Date Received: 04/17/2019 09:45 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Taha Hedib

Date: 04/17/2019





Client: TRC Solutions/Environmental

Date/ Time Received: 04/16/2019 02:13:00 PM

Work Order #: 621277

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	4.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chlorides sent to Stafford
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

  
Brenda Ward

Date: 04/16/2019

Checklist reviewed by:

  
Mike Kimmel

Date: 04/19/2019



# Analytical Report 621518

for  
TRC Solutions, Inc

Project Manager: Curt Stanley

NM Moore Sweet

---

30-APR-19

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)

Xenco-Lakeland: Florida (E84098)





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30-APR-19

Project Manager: **Curt Stanley**  
**TRC Solutions, Inc**  
2057 Commerce  
Midland, TX 79703

Reference: XENCO Report No(s): **621518**  
**NM Moore Sweet**  
Project Address: ---

**Curt Stanley:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 621518. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 621518 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Kalei Stout'.

**Kalei Stout**

Lubbock Laboratory Director

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

*Certified and approved by numerous States and Agencies.*

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

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



**Sample Cross Reference 621518****TRC Solutions, Inc, Midland, TX**

NM Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TT2-NW-B @ 1.5'	S	04-17-19 12:00	1.5 ft	621518-001
TT2-EW-B @ 1.5'	S	04-17-19 12:15	1.5 ft	621518-002
TT2 Comp 2 @ 4'	S	04-17-19 12:30	4 ft	621518-003
TT2-Comp 4 @ 4'	S	04-17-19 12:45	4 ft	621518-004
WTT-NW-C @ 2'	S	04-17-19 13:00	2 ft	621518-005
ETT-NW-C @ 2.5'	S	04-17-19 13:15	2.5 ft	621518-006
ETT-Comp 4 @ 5'	S	04-17-19 13:30	5 ft	621518-007
ETT- Comp 1 @ 6'	S	04-17-19 13:45	6 ft	621518-008



**CASE NARRATIVE****Client Name: TRC Solutions, Inc****Project Name: NM Moore Sweet**Project ID: ---  
Work Order Number(s): 621518Report Date: 30-APR-19  
Date Received: 04/18/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3086407 BTEX by EPA 8021B

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

Batch: LBA-3086410 TPH GRO by EPA 8015 Mod.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7676207-1-BLK,621518-001 SD,621518-002,621518-003,621518-004,621518-007,621518-001,621518-008.

Batch: LBA-3087200 DRO-ORO By SW8015B

Surrogate Tricosane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621518-001 S,621518-001 SD,621518-004,621518-003,621518-006,621518-007.

Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 621518-003,621518-004,621518-007.





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **TT2-NW-B @ 1.5'** Matrix: Soil Sample Depth: 1.5 ft  
Lab Sample Id: 621518-001 Date Collected: 04.17.19 12.00 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	136	10.0	0.354	mg/kg	04.19.19 14:46		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	41.3	25.0	7.47	mg/kg	04.26.19 19:26		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	04.26.19 19:26	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	134	65 - 144	%		
n-Triacontane	123	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.260	3.83	0.260	mg/kg	04.20.19 17:04	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	76 - 123	%		
a,a,a-Trifluorotoluene	122	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: TT2-NW-B @ 1.5'

Matrix: Soil

Sample Depth: 1.5 ft

Lab Sample Id: 621518-001

Date Collected: 04.17.19 12.00

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00866	0.0192	0.00866	mg/kg	04.20.19 17:04	U	19
Toluene	108-88-3	<0.00448	0.0192	0.00448	mg/kg	04.20.19 17:04	U	19
Ethylbenzene	100-41-4	<0.00590	0.0192	0.00590	mg/kg	04.20.19 17:04	U	19
m_p-Xylenes	179601-23-1	<0.00653	0.0383	0.00653	mg/kg	04.20.19 17:04	U	19
o-Xylene	95-47-6	<0.00653	0.0192	0.00653	mg/kg	04.20.19 17:04	U	19
Xylenes, Total	1330-20-7	<0.00653		0.00653	mg/kg	04.20.19 17:04	U	
Total BTEX		<0.00448		0.00448	mg/kg	04.20.19 17:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	91	68 - 120	%		
a,a,a-Trifluorotoluene	99	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **TT2-EW-B @ 1.5'** Matrix: Soil Sample Depth: 1.5 ft  
Lab Sample Id: 621518-002 Date Collected: 04.17.19 12.15 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	51.4	9.98	0.353	mg/kg	04.19.19 14:58		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	17.7	25.2	7.54	mg/kg	04.26.19 22:04	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.54	25.2	7.54	mg/kg	04.26.19 22:04	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	119	65 - 144	%		
n-Triacontane	112	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.232	3.43	0.232	mg/kg	04.20.19 19:55	U	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	76 - 123	%		
a,a,a-Trifluorotoluene	126	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: TT2-EW-B @ 1.5'

Matrix: Soil

Sample Depth: 1.5 ft

Lab Sample Id: 621518-002

Date Collected: 04.17.19 12.15

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00775	0.0172	0.00775	mg/kg	04.20.19 19:55	U	17
Toluene	108-88-3	<0.00401	0.0172	0.00401	mg/kg	04.20.19 19:55	U	17
Ethylbenzene	100-41-4	<0.00528	0.0172	0.00528	mg/kg	04.20.19 19:55	U	17
m_p-Xylenes	179601-23-1	<0.00585	0.0343	0.00585	mg/kg	04.20.19 19:55	U	17
o-Xylene	95-47-6	<0.00585	0.0172	0.00585	mg/kg	04.20.19 19:55	U	17
Xylenes, Total	1330-20-7	<0.00585		0.00585	mg/kg	04.20.19 19:55	U	
Total BTEX		<0.00401		0.00401	mg/kg	04.20.19 19:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	92	68 - 120	%		
a,a,a-Trifluorotoluene	103	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **TT2 Comp 2 @ 4'** Matrix: Soil Sample Depth: 4 ft  
Lab Sample Id: 621518-003 Date Collected: 04.17.19 12.30 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	35.1	9.96	0.353	mg/kg	04.19.19 15:10		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	399	124	37.2	mg/kg	04.26.19 22:46		5
Oil Range Hydrocarbons (ORO)	PHCG2835	<37.2	124	37.2	mg/kg	04.26.19 22:46	U	5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	236	65 - 144	%		**
n-Triacontane	177	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	0.340	3.40	0.230	mg/kg	04.21.19 00:44	J	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	76 - 123	%		
a,a,a-Trifluorotoluene	126	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: TT2 Comp 2 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 621518-003

Date Collected: 04.17.19 12.30

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00769	0.0170	0.00769	mg/kg	04.21.19 00:44	U	17
Toluene	108-88-3	<0.00398	0.0170	0.00398	mg/kg	04.21.19 00:44	U	17
Ethylbenzene	100-41-4	<0.00524	0.0170	0.00524	mg/kg	04.21.19 00:44	U	17
m_p-Xylenes	179601-23-1	<0.00580	0.0340	0.00580	mg/kg	04.21.19 00:44	U	17
o-Xylene	95-47-6	<0.00580	0.0170	0.00580	mg/kg	04.21.19 00:44	U	17
Xylenes, Total	1330-20-7	<0.0058		0.0058	mg/kg	04.21.19 00:44	U	
Total BTEX		<0.00398		0.00398	mg/kg	04.21.19 00:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	94	68 - 120	%		
a,a,a-Trifluorotoluene	102	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **TT2-Comp 4 @ 4'** Matrix: Soil Sample Depth: 4 ft  
Lab Sample Id: 621518-004 Date Collected: 04.17.19 12.45 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	30.8	10.0	0.355	mg/kg	04.19.19 15:22		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	275	126	37.7	mg/kg	04.26.19 23:21		5
Oil Range Hydrocarbons (ORO)	PHCG2835	<37.7	126	37.7	mg/kg	04.26.19 23:21	U	5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	204	65 - 144	%		**
n-Triacontane	164	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	0.667	3.70	0.250	mg/kg	04.21.19 01:08	J	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	76 - 123	%		
a,a,a-Trifluorotoluene	122	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: TT2-Comp 4 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 621518-004

Date Collected: 04.17.19 12.45

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00835	0.0185	0.00835	mg/kg	04.21.19 01:08	U	18
Toluene	108-88-3	<0.00433	0.0185	0.00433	mg/kg	04.21.19 01:08	U	18
Ethylbenzene	100-41-4	<0.00569	0.0185	0.00569	mg/kg	04.21.19 01:08	U	18
m_p-Xylenes	179601-23-1	<0.00630	0.0370	0.00630	mg/kg	04.21.19 01:08	U	18
o-Xylene	95-47-6	<0.00630	0.0185	0.00630	mg/kg	04.21.19 01:08	U	18
Xylenes, Total	1330-20-7	<0.0063		0.0063	mg/kg	04.21.19 01:08	U	
Total BTEX		<0.00433		0.00433	mg/kg	04.21.19 01:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	89	68 - 120	%		
a,a,a-Trifluorotoluene	98	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: WTT-NW-C @ 2' Matrix: Soil Sample Depth: 2 ft  
Lab Sample Id: 621518-005 Date Collected: 04.17.19 13.00 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	965	9.94	0.352	mg/kg	04.19.19 15:35		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	12.5	24.8	7.42	mg/kg	04.26.19 23:57	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.42	24.8	7.42	mg/kg	04.26.19 23:57	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	131	65 - 144	%		
n-Triacontane	123	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.256	3.78	0.256	mg/kg	04.20.19 20:19	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	93	76 - 123	%		
a,a,a-Trifluorotoluene	110	69 - 120	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: WTT-NW-C @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 621518-005

Date Collected: 04.17.19 13.00

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00854	0.0189	0.00854	mg/kg	04.20.19 20:19	U	19
Toluene	108-88-3	<0.00442	0.0189	0.00442	mg/kg	04.20.19 20:19	U	19
Ethylbenzene	100-41-4	<0.00582	0.0189	0.00582	mg/kg	04.20.19 20:19	U	19
m_p-Xylenes	179601-23-1	<0.00645	0.0378	0.00645	mg/kg	04.20.19 20:19	U	19
o-Xylene	95-47-6	<0.00645	0.0189	0.00645	mg/kg	04.20.19 20:19	U	19
Xylenes, Total	1330-20-7	<0.00645		0.00645	mg/kg	04.20.19 20:19	U	
Total BTEX		<0.00442		0.00442	mg/kg	04.20.19 20:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	86	68 - 120	%		
a,a,a-Trifluorotoluene	91	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: ETT-NW-C @ 2.5' Matrix: Soil Sample Depth: 2.5 ft  
Lab Sample Id: 621518-006 Date Collected: 04.17.19 13.15 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	197	9.98	0.353	mg/kg	04.19.19 15:47		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	359	250	74.7	mg/kg	04.27.19 00:38		10
Oil Range Hydrocarbons (ORO)	PHCG2835	<74.7	250	74.7	mg/kg	04.27.19 00:38	U	10

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	284	65 - 144	%		**
n-Triacontane	91	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.232	3.42	0.232	mg/kg	04.21.19 01:33	U	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	78	76 - 123	%		
a,a,a-Trifluorotoluene	91	69 - 120	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: ETT-NW-C @ 2.5'

Matrix: Soil

Sample Depth: 2.5 ft

Lab Sample Id: 621518-006

Date Collected: 04.17.19 13.15

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00774	0.0171	0.00774	mg/kg	04.21.19 01:33	U	17
Toluene	108-88-3	<0.00401	0.0171	0.00401	mg/kg	04.21.19 01:33	U	17
Ethylbenzene	100-41-4	<0.00527	0.0171	0.00527	mg/kg	04.21.19 01:33	U	17
m_p-Xylenes	179601-23-1	<0.00584	0.0342	0.00584	mg/kg	04.21.19 01:33	U	17
o-Xylene	95-47-6	<0.00584	0.0171	0.00584	mg/kg	04.21.19 01:33	U	17
Xylenes, Total	1330-20-7	<0.00584		0.00584	mg/kg	04.21.19 01:33	U	
Total BTEX		<0.00401		0.00401	mg/kg	04.21.19 01:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	74	68 - 120	%		
a,a,a-Trifluorotoluene	74	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **ETT-Comp 4 @ 5'** Matrix: Soil Sample Depth: 5 ft  
Lab Sample Id: 621518-007 Date Collected: 04.17.19 13.30 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	724	10.0	0.354	mg/kg	04.19.19 15:59		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	291	25.2	7.55	mg/kg	04.27.19 01:14		1
Oil Range Hydrocarbons (ORO)	PHCG2835	17.0	25.2	7.55	mg/kg	04.27.19 01:14	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	260	65 - 144	%		**
n-Triacontane	193	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	0.395	3.42	0.232	mg/kg	04.21.19 01:57	J	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	106	76 - 123	%		
a,a,a-Trifluorotoluene	128	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: ETT-Comp 4 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 621518-007

Date Collected: 04.17.19 13.30

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00773	0.0171	0.00773	mg/kg	04.21.19 01:57	U	17
Toluene	108-88-3	<0.00400	0.0171	0.00400	mg/kg	04.21.19 01:57	U	17
Ethylbenzene	100-41-4	<0.00526	0.0171	0.00526	mg/kg	04.21.19 01:57	U	17
m_p-Xylenes	179601-23-1	<0.00583	0.0342	0.00583	mg/kg	04.21.19 01:57	U	17
o-Xylene	95-47-6	<0.00583	0.0171	0.00583	mg/kg	04.21.19 01:57	U	17
Xylenes, Total	1330-20-7	<0.00583		0.00583	mg/kg	04.21.19 01:57	U	
Total BTEX		<0.004		0.004	mg/kg	04.21.19 01:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	101	68 - 120	%		
a,a,a-Trifluorotoluene	106	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: ETT- Comp 1 @ 6' Matrix: Soil Sample Depth: 6 ft  
Lab Sample Id: 621518-008 Date Collected: 04.17.19 13.45 Date Received: 04.18.19 16.53  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	615	9.98	0.353	mg/kg	04.19.19 16:11		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3087200 Date Prep: 04.26.19 11.00  
Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	29.3	24.8	7.41	mg/kg	04.27.19 01:49		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.41	24.8	7.41	mg/kg	04.27.19 01:49	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	132	65 - 144	%		
n-Triacontane	129	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.242	3.57	0.242	mg/kg	04.20.19 19:30	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	101	76 - 123	%		
a,a,a-Trifluorotoluene	123	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: ETT- Comp 1 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 621518-008

Date Collected: 04.17.19 13.45

Date Received: 04.18.19 16.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3086407

Date Prep: 04.18.19 15.00

Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00807	0.0179	0.00807	mg/kg	04.20.19 19:30	U	18
Toluene	108-88-3	<0.00418	0.0179	0.00418	mg/kg	04.20.19 19:30	U	18
Ethylbenzene	100-41-4	<0.00550	0.0179	0.00550	mg/kg	04.20.19 19:30	U	18
m_p-Xylenes	179601-23-1	<0.00609	0.0357	0.00609	mg/kg	04.20.19 19:30	U	18
o-Xylene	95-47-6	<0.00609	0.0179	0.00609	mg/kg	04.20.19 19:30	U	18
Xylenes, Total	1330-20-7	<0.00609		0.00609	mg/kg	04.20.19 19:30	U	
Total BTEX		<0.00418		0.00418	mg/kg	04.20.19 19:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	92	68 - 120	%		
a,a,a-Trifluorotoluene	101	71 - 121	%		





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX  
NM Moore Sweet

Sample Id: **7676142-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7676142-1-BLK Date Collected: Date Received:  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3086362 Date Prep: 04.19.19 12.29  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7676142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	04.19.19 08:28	U	1

Sample Id: **7676206-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7676206-1-BLK Date Collected: Date Received:  
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086407 Date Prep: 04.18.19 15.00  
Prep seq: 7676206

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.20.19 16:40	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.20.19 16:40	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.20.19 16:40	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.20.19 16:40	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.20.19 16:40	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	68 - 120	%		
a,a,a-Trifluorotoluene	105	71 - 121	%		

Sample Id: **7676207-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7676207-1-BLK Date Collected: Date Received:  
Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3086410 Date Prep: 04.18.19 15.00  
Prep seq: 7676207

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.20.19 16:40	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	76 - 123	%		
a,a,a-Trifluorotoluene	128	69 - 120	%		**





# Certificate of Analytical Results

## 621518



TRC Solutions, Inc, Midland, TX

NM Moore Sweet

Sample Id: **7676717-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7676717-1-BLK

Date Collected:

Date Received:

Analytical Method: DRO-ORO By SW8015B

Prep Method: 8015

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3087200

Date Prep: 04.26.19 11.00

Prep seq: 7676717

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	04.26.19 18:47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.26.19 18:47	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	115	65 - 144	%		
n-Triacontane	100	46 - 152	%		





## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621518,

Project ID: ---

Lab Batch #: 3086407

Sample: 7676206-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 14:16

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0963	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.91	2.00	96	71-121	

Lab Batch #: 3086407

Sample: 7676206-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 14:40

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0979	0.100	98	68-120	
a,a,a-Trifluorotoluene	1.95	2.00	98	71-121	

Lab Batch #: 3086407

Sample: 7676206-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 16:40

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0972	0.100	97	68-120	
a,a,a-Trifluorotoluene	2.10	2.00	105	71-121	

Lab Batch #: 3086407

Sample: 621518-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 17:29

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0938	0.100	94	68-120	
a,a,a-Trifluorotoluene	1.96	1.94	101	71-121	

Lab Batch #: 3086407

Sample: 621518-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 17:53

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0952	0.100	95	68-120	
a,a,a-Trifluorotoluene	1.87	1.79	104	71-121	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621518,

Project ID: ---

Lab Batch #: 3087200

Sample: 7676717-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/26/19 16:03

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.2	10.0	112	65-144	
n-Triacontane	9.42	10.0	94	46-152	

Lab Batch #: 3087200

Sample: 7676717-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/26/19 16:44

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.4	10.0	114	65-144	
n-Triacontane	9.24	10.0	92	46-152	

Lab Batch #: 3087200

Sample: 7676717-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/26/19 18:47

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.5	10.0	115	65-144	
n-Triacontane	9.98	10.0	100	46-152	

Lab Batch #: 3087200

Sample: 621518-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/26/19 20:04

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	14.7	10.0	147	65-144	**
n-Triacontane	12.4	10.0	124	46-152	

Lab Batch #: 3087200

Sample: 621518-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/26/19 20:44

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	14.7	9.97	147	65-144	**
n-Triacontane	12.6	9.97	126	46-152	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





# Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 621518,

Project ID: ---

Lab Batch #: 3086410

Sample: 7676207-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 15:04

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0897	0.100	90	76-123	
a,a,a-Trifluorotoluene	2.07	2.00	104	69-120	

Lab Batch #: 3086410

Sample: 7676207-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 15:28

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0893	0.100	89	76-123	
a,a,a-Trifluorotoluene	2.12	2.00	106	69-120	

Lab Batch #: 3086410

Sample: 7676207-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/20/19 16:40

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	76-123	
a,a,a-Trifluorotoluene	2.56	2.00	128	69-120	**

Lab Batch #: 3086410

Sample: 621518-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 18:17

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0820	0.100	82	76-123	
a,a,a-Trifluorotoluene	1.71	1.80	95	69-120	

Lab Batch #: 3086410

Sample: 621518-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/20/19 18:42

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.109	0.100	109	76-123	
a,a,a-Trifluorotoluene	2.47	1.93	128	69-120	**

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621518

Project ID: ---

Analyst: MIT

Date Prepared: 04/18/2019

Date Analyzed: 04/20/2019

Lab Batch ID: 3086407

Sample: 7676206-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00904	2.00	1.87	94	2.00	1.88	94	1	55-120	20	
Toluene	<0.00468	2.00	1.79	90	2.00	1.80	90	1	77-120	20	
Ethylbenzene	<0.00616	2.00	1.81	91	2.00	1.84	92	2	77-120	20	
m_p-Xylenes	<0.00682	4.00	3.61	90	4.00	3.67	92	2	78-120	20	
o-Xylene	<0.00682	2.00	1.84	92	2.00	1.87	94	2	78-120	20	

Analyst: MIT

Date Prepared: 04/26/2019

Date Analyzed: 04/26/2019

Lab Batch ID: 3087200

Sample: 7676717-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Diesel Range Organics (DRO)	<7.48	100	127	127	100	129	129	2	63-139	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621518

Project ID: ---

Analyst: JYM

Date Prepared: 04/19/2019

Date Analyzed: 04/19/2019

Lab Batch ID: 3086362

Sample: 7676142-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.354	100	102	102	100	108	108	6	80-120	20	

Analyst: MIT

Date Prepared: 04/18/2019

Date Analyzed: 04/20/2019

Lab Batch ID: 3086410

Sample: 7676207-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<0.271	20.0	19.1	96	20.0	18.3	92	4	35-129	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621518

Project ID: ---

Lab Batch ID: 3086407

QC- Sample ID: 621518-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/20/2019

Date Prepared: 04/18/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00876	1.94	1.73	89	1.79	1.65	92	5	54-120	25	
Toluene	<0.00453	1.94	1.71	88	1.79	1.64	92	4	57-120	25	
Ethylbenzene	<0.00597	1.94	1.69	87	1.79	1.65	92	2	58-131	25	
m_p-Xylenes	<0.00661	3.88	3.34	86	3.58	3.27	91	2	62-124	25	
o-Xylene	<0.00661	1.94	1.67	86	1.79	1.65	92	1	62-124	25	

Lab Batch ID: 3087200

QC- Sample ID: 621518-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/26/2019

Date Prepared: 04/26/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	41.3	100	154	113	99.7	165	124	7	63-139	20	

Lab Batch ID: 3086362

QC- Sample ID: 621050-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/19/2019

Date Prepared: 04/19/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	44.2	99.8	144	100	99.8	141	97	2	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.





## Form 3 - MS / MSD Recoveries



Project Name: NM Moore Sweet

Work Order #: 621518

Project ID: ---

Lab Batch ID: 3086362

QC- Sample ID: 621050-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/19/2019

Date Prepared: 04/19/2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	659	100	747	88	100	747	88	0	80-120	20	

Lab Batch ID: 3086410

QC- Sample ID: 621518-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/20/2019

Date Prepared: 04/18/2019

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.243	18.0	15.2	84	19.3	17.6	91	15	35-129	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Chain of Custody

Work Order No: 621518

Page of  
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Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Hobbs, NIM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)



Project Manager:	Curt Stanley		Bill to: (if different)	Cecilie Bryant
Company Name:	TRC Solutions		Company Name:	Plains Pyclinc
Address:	10 Dorsie Dr Suite 180E		Address:	
City, State ZIP:	Midland, TX 79705		City, State ZIP:	
Phone:	986-421-5356		Email:	CStanley@trcsolutions.com

Project Name:	UM More Sweet	Turn Around	ANALYSIS REQUIRED			
Project Number:		Routine <input type="checkbox"/>				
P.O. Number:		Rush:				
Sampler's Name:	Bridget	Due Date:				

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Intact:	Yes	No	
Cooler Custody Seals:	Yes	No	N/A
Sample Custody Seals:	Yes	No	N/A
	Correction Factor:		
	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
TT2-NW-B@1.5'	S	4/17	12:00	1.5'
TT2-EW-B@1.5'			12:15	1.5'
TT2-Comp2@4'			12:30	4'
TT2-Comp4@4'			12:45	4'
WT1-NW-C@2'			1:00	2'
ETT-NW-C@2.5'			1:15	2.5'
ETT-Comp4@5'			1:30	5'
ETT-Comp2@6'			1:45	6'

ANALYSIS REQUEST						Work Order Notes
						bcaoper@tresolutions AKGROUSE@pacalip CLBryant@pacalip  TAT starts the day received by the lab, if received by 4:30pm
						Sample Comments
						1
						2
						3
						4
						5
						6
						7
						8

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Cu	Co	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed																																	
TCPL / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U																																	
1631 / 245.1 / 7470 / 7471 : Hg																																	

Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions for service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/7/910:23			
		4			
		6			

Revised Date 051418 Rev. 2018.1



## Inter-Office Shipment


IOS Number : **37317**

Date/Time: 04.18.2019 09:42 Created by: Brenda Ward  
 Lab# From: **Lubbock** Delivery Priority:  
 Lab# To: **Houston** Air Bill No.: 775011637307


Please send report to: Kalei Stout  
 Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424  
 E-Mail: kalei.stout@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
621518-001	S	TT2-NW-B @ 1.5'	04.17.2019 12:00	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-002	S	TT2-EW-B @ 1.5'	04.17.2019 12:15	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-003	S	TT2-Comp 2 @ 4'	04.17.2019 12:30	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-004	S	TT2-Comp 4 @ 4'	04.17.2019 12:45	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-005	S	WTT-NW-C @ 2'	04.17.2019 13:00	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-006	S	ETT-NW-C @ 2.5'	04.17.2019 13:15	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-007	S	ETT-Comp 4 @ 5'	04.17.2019 13:30	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	
621518-008	S	ETT-Comp 1 @ 6'	04.17.2019 13:45	E300	Inorganic Anions by EPA 300/300.1	04.24.2019	05.15.2019	KLS	CL	

## Inter Office Shipment or Sample Comments:

Relinquished By:   
 Brenda Ward

Date Relinquished: 04.18.2019

Received By:   
 Monica Shakhshir

Date Received: 04.19.2019 09:40

Cooler Temperature: 2.4





## Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 37317

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brenda Ward

Date Sent: 04/18/2019 09:42 AM

Received By: Monica Shakhshir

Date Received: 04/19/2019 09:40 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Monica Shakhshir

Date: 04/19/2019





Client: TRC Solutions, Inc

Date/ Time Received: 04/18/2019 04:53:00 PM

Work Order #: 621518

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	4.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chlorides
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

  
Brenda Ward

Date: 04/18/2019

Checklist reviewed by:

  
Kalei Stout

Date: 04/19/2019





# Analytical Report 634062

for

**Tasman Geosciences, LLC**

**Project Manager: Zach Conder**

**NM Moore Sweet**

**08.23.2019**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429), North Carolina (483)





08.23.2019

Project Manager: **Zach Conder**  
**Tasman Geosciences, LLC**  
2620 W. Marland Blvd.  
Hobbs, NM 88240

Reference: XENCO Report No(s): **634062**  
**NM Moore Sweet**  
Project Address:

**Zach Conder:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 634062. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 634062 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

---

**John Builes**  
Project Manager

*A Small Business and Minority Company*

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





## Sample Cross Reference 634062

Tasman Geosciences, LLC, Hobbs, NM

NM Moore Sweet

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ETT-NW-D @ 2.5'	S	08.14.2019 12:00	2.5 ft	634062-001
WTT-NW-D @ 2'	S	08.14.2019 12:15	2 ft	634062-002
TT2-Comp 2 @ 5'	S	08.14.2019 12:30	5 ft	634062-003
TT2-Comp 4 @ 5'	S	08.14.2019 12:45	5 ft	634062-004



**CASE NARRATIVE***Client Name: Tasman Geosciences, LLC**Project Name: NM Moore Sweet*

Project ID:  
Work Order Number(s): 634062

Report Date: 08.23.2019  
Date Received: 08.14.2019

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This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

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

None

**Analytical non conformances and comments:**

Batch: LBA-3098990 BTEX-MTBE by EPA 8021B

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





# Certificate of Analytical Results

## 634062

**Tasman Geosciences, LLC, Hobbs, NM**  
NM Moore Sweet

Sample Id: **ETT-NW-D @ 2.5'** Matrix: Soil Sample Depth: 2.5 ft  
Lab Sample Id: 634062-001 Date Collected: 08.14.2019 12:00 Date Received: 08.14.2019 15:13  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3098689 Date Prep: 08.15.2019 10:59  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	861	9.98	0.353	mg/kg	08.15.2019 16:48		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005  
Analyst: ISU % Moist: Tech: ISU  
Seq Number: 3098797 Date Prep: 08.16.2019 09:56  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684305

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.92	49.6	9.92	mg/kg	08.16.2019 17:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	100	49.6	9.92	mg/kg	08.16.2019 17:42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	59.6	49.6	9.92	mg/kg	08.16.2019 17:42		1
Total TPH	PHC635	160		9.92	mg/kg	08.16.2019 17:42		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	82	70 - 135	%		
o-Terphenyl	86	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3098990 Date Prep: 08.19.2019 14:00  
Prep seq: 7684501

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00804	0.0178	0.00804	mg/kg	08.19.2019 18:27	U	18
Toluene	108-88-3	<0.00416	0.0178	0.00416	mg/kg	08.19.2019 18:27	U	18
Ethylbenzene	100-41-4	<0.00548	0.0178	0.00548	mg/kg	08.19.2019 18:27	U	18
m,p-Xylenes	179601-23-1	<0.00607	0.0356	0.00607	mg/kg	08.19.2019 18:27	U	18
o-Xylene	95-47-6	<0.00607	0.0178	0.00607	mg/kg	08.19.2019 18:27	U	18
Xylenes, Total	1330-20-7	<0.00607		0.00607	mg/kg	08.19.2019 18:27	U	
Total BTEX		<0.00416		0.00416	mg/kg	08.19.2019 18:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	68 - 120	%		
a,a,a-Trifluorotoluene	96	71 - 121	%		





# Certificate of Analytical Results

## 634062

**Tasman Geosciences, LLC, Hobbs, NM**  
NM Moore Sweet

Sample Id: **WTT-NW-D @ 2'**

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 634062-002

Date Collected: 08.14.2019 12:15

Date Received: 08.14.2019 15:13

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: JYM

% Moist:

Tech: JYM

Seq Number: 3098689

Date Prep: 08.15.2019 10:59

Subcontractor: SUB: T104704215-19-29

Prep seq: 7684283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	130	9.94	0.352	mg/kg	08.15.2019 17:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3098797

Date Prep: 08.16.2019 09:59

Subcontractor: SUB: T104704215-19-29

Prep seq: 7684305

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.98	49.9	9.98	mg/kg	08.16.2019 18:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	321	49.9	9.98	mg/kg	08.16.2019 18:01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	138	49.9	9.98	mg/kg	08.16.2019 18:01		1
Total TPH	PHC635	459		9.98	mg/kg	08.16.2019 18:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	79	70 - 135	%		
o-Terphenyl	73	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3098990

Date Prep: 08.19.2019 14:00

Prep seq: 7684501

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00890	0.0197	0.00890	mg/kg	08.19.2019 20:15	U	20
Toluene	108-88-3	<0.00461	0.0197	0.00461	mg/kg	08.19.2019 20:15	U	20
Ethylbenzene	100-41-4	<0.00606	0.0197	0.00606	mg/kg	08.19.2019 20:15	U	20
m,p-Xylenes	179601-23-1	<0.00671	0.0394	0.00671	mg/kg	08.19.2019 20:15	U	20
o-Xylene	95-47-6	<0.00671	0.0197	0.00671	mg/kg	08.19.2019 20:15	U	20
Xylenes, Total	1330-20-7	<0.00671		0.00671	mg/kg	08.19.2019 20:15	U	
Total BTEX		<0.00461		0.00461	mg/kg	08.19.2019 20:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	68 - 120	%		
a,a,a-Trifluorotoluene	97	71 - 121	%		





# Certificate of Analytical Results

## 634062

Tasman Geosciences, LLC, Hobbs, NM  
NM Moore Sweet

Sample Id: **TT2-Comp 2 @ 5'**

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 634062-003

Date Collected: 08.14.2019 12:30

Date Received: 08.14.2019 15:13

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: JYM

% Moist:

Tech: JYM

Seq Number: 3098689

Date Prep: 08.15.2019 10:59

Subcontractor: SUB: T104704215-19-29

Prep seq: 7684283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	53.3	9.96	0.353	mg/kg	08.15.2019 17:21		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3098797

Date Prep: 08.16.2019 10:02

Subcontractor: SUB: T104704215-19-29

Prep seq: 7684305

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.4	50.0	10.0	mg/kg	08.19.2019 16:11	J	1
Diesel Range Organics (DRO)	C10C28DRO	960	50.0	10.0	mg/kg	08.19.2019 16:11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	218	50.0	10.0	mg/kg	08.19.2019 16:11		1
Total TPH	PHC635	1190		10.0	mg/kg	08.19.2019 16:11		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	127	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3098990

Date Prep: 08.19.2019 14:00

Prep seq: 7684501

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00868	0.0192	0.00868	mg/kg	08.19.2019 20:42	U	19
Toluene	108-88-3	<0.00449	0.0192	0.00449	mg/kg	08.19.2019 20:42	U	19
Ethylbenzene	100-41-4	<0.00591	0.0192	0.00591	mg/kg	08.19.2019 20:42	U	19
m,p-Xylenes	179601-23-1	<0.00655	0.0384	0.00655	mg/kg	08.19.2019 20:42	U	19
o-Xylene	95-47-6	<0.00655	0.0192	0.00655	mg/kg	08.19.2019 20:42	U	19
Xylenes, Total	1330-20-7	<0.00655		0.00655	mg/kg	08.19.2019 20:42	U	
Total BTEX		<0.00449		0.00449	mg/kg	08.19.2019 20:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	101	68 - 120	%		
a,a,a-Trifluorotoluene	95	71 - 121	%		





# Certificate of Analytical Results

## 634062

**Tasman Geosciences, LLC, Hobbs, NM**  
NM Moore Sweet

Sample Id: **TT2-Comp 4 @ 5'** Matrix: Soil Sample Depth: 5 ft  
Lab Sample Id: 634062-004 Date Collected: 08.14.2019 12:45 Date Received: 08.14.2019 15:13  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3098689 Date Prep: 08.15.2019 10:59  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	24.5	9.92	0.351	mg/kg	08.15.2019 17:29		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005  
Analyst: ISU % Moist: Tech: ISU  
Seq Number: 3098797 Date Prep: 08.16.2019 10:05  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684305

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.0	50.0	9.99	mg/kg	08.16.2019 18:39	J	1
Diesel Range Organics (DRO)	C10C28DRO	1900	50.0	9.99	mg/kg	08.16.2019 18:39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	376	50.0	9.99	mg/kg	08.16.2019 18:39		1
Total TPH	PHC635	2290		9.99	mg/kg	08.16.2019 18:39		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	81	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B  
Analyst: MIT % Moist: Tech: MIT  
Seq Number: 3098990 Date Prep: 08.19.2019 14:00  
Prep seq: 7684501

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00799	0.0177	0.00799	mg/kg	08.19.2019 21:09	U	18
Toluene	108-88-3	<0.00413	0.0177	0.00413	mg/kg	08.19.2019 21:09	U	18
Ethylbenzene	100-41-4	<0.00544	0.0177	0.00544	mg/kg	08.19.2019 21:09	U	18
m,p-Xylenes	179601-23-1	<0.00602	0.0353	0.00602	mg/kg	08.19.2019 21:09	U	18
o-Xylene	95-47-6	<0.00602	0.0177	0.00602	mg/kg	08.19.2019 21:09	U	18
Xylenes, Total	1330-20-7	<0.00602		0.00602	mg/kg	08.19.2019 21:09	U	
Total BTEX		<0.00413		0.00413	mg/kg	08.19.2019 21:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	99	68 - 120	%		
a,a,a-Trifluorotoluene	95	71 - 121	%		





# Certificate of Analytical Results

## 634062

**Tasman Geosciences, LLC, Hobbs, NM**  
NM Moore Sweet

Sample Id: **7684283-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7684283-1-BLK Date Collected: Date Received:  
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: SW9056P  
Analyst: JYM % Moist: Tech: JYM  
Seq Number: 3098689 Date Prep: 08.15.2019 10:59  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	08.15.2019 15:08	U	1

Sample Id: **7684305-1-BLK** Matrix: Solid Sample Depth:  
Lab Sample Id: 7684305-1-BLK Date Collected: Date Received:  
Analytical Method: TPH by SW8015 Mod Prep Method: 1005  
Analyst: ISU % Moist: Tech: ISU  
Seq Number: 3098797 Date Prep: 08.15.2019 16:30  
Subcontractor: SUB: T104704215-19-29 Prep seq: 7684305

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.15.2019 17:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.15.2019 17:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.15.2019 17:54	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.15.2019 17:54	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	88	70 - 135	%		





# Certificate of Analytical Results

## 634062

**Tasman Geosciences, LLC, Hobbs, NM**  
NM Moore Sweet

Sample Id: **7684501-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7684501-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3098990

Date Prep: 08.19.2019 14:00

Prep seq: 7684501

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	08.19.2019 18:00	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	08.19.2019 18:00	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	08.19.2019 18:00	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	08.19.2019 18:00	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	08.19.2019 18:00	U	20
Xylenes, Total	1330-20-7	<0.00682		0.00682	mg/kg	08.19.2019 18:00	U	
Total BTEX		<0.00468		0.00468	mg/kg	08.19.2019 18:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	90	68 - 120	%		
a,a,a-Trifluorotoluene	93	71 - 121	%		





## Flagging Criteria

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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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





## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 634062

Project ID:

Lab Batch #: 3098990

Sample: 7684501-1-BKS / BKS

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.19.2019 16:12

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0956	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.71	2.00	86	71-121	

Lab Batch #: 3098990

Sample: 7684501-1-BSD / BSD

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.19.2019 16:39

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0916	0.100	92	68-120	
a,a,a-Trifluorotoluene	1.73	2.00	87	71-121	

Lab Batch #: 3098990

Sample: 7684501-1-BLK / BLK

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.19.2019 18:00

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0895	0.100	90	68-120	
a,a,a-Trifluorotoluene	1.85	2.00	93	71-121	

Lab Batch #: 3098990

Sample: 634062-001 S / MS

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 08.19.2019 18:54

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0969	0.100	97	68-120	
a,a,a-Trifluorotoluene	1.70	1.96	87	71-121	

Lab Batch #: 3098990

Sample: 634062-001 SD / MSD

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 08.19.2019 19:21

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0964	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.54	1.82	85	71-121	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: NM Moore Sweet

Work Orders : 634062

Project ID:

Lab Batch #: 3098797

Sample: 7684305-1-BLK / BLK

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.15.2019 17:54

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.1	100	88	70-135	
o-Terphenyl	44.0	50.0	88	70-135	

Lab Batch #: 3098797

Sample: 7684305-1-BKS / BKS

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.15.2019 18:14

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.2	100	91	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 3098797

Sample: 7684305-1-BSD / BSD

Batch: 1 Matrix:Solid

Units: mg/kg

Date Analyzed: 08.15.2019 18:33

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	100	95	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

Lab Batch #: 3098797

Sample: 633722-001 SD / MSD

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 08.15.2019 19:31

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.3	95	70-135	
o-Terphenyl	37.6	49.7	76	70-135	

Lab Batch #: 3098797

Sample: 633722-001 S / MS

Batch: 1 Matrix:Soil

Units: mg/kg

Date Analyzed: 08.16.2019 12:32

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.6	87	70-135	
o-Terphenyl	35.1	49.8	70	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





# BS / BSD Recoveries

**Project Name:** NM Moore Sweet

**Work Order #:** 634062

**Project ID:**

**Analyst:** MIT

**Date Prepared:** 08.19.2019

**Date Analyzed:** 08.19.2019

**Lab Batch ID:** 3098990

**Sample:** 7684501-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	<0.00904	2.00	1.82	91	2.00	1.95	98	7	55-120	20	
Toluene	<0.00468	2.00	1.97	99	2.00	1.95	98	1	77-120	20	
Ethylbenzene	<0.00616	2.00	1.97	99	2.00	1.96	98	1	77-120	20	
m_p-Xylenes	<0.00682	4.00	3.95	99	4.00	3.91	98	1	78-120	20	
o-Xylene	<0.00682	2.00	1.96	98	2.00	1.96	98	0	78-120	20	

**Analyst:** JYM

**Date Prepared:** 08.15.2019

**Date Analyzed:** 08.15.2019

**Lab Batch ID:** 3098689

**Sample:** 7684283-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Inorganic Anions by EPA 300/300.1</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	<0.354	100	104	104	100	105	105	1	80-120	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes





# BS / BSD Recoveries

**Project Name:** NM Moore Sweet

**Work Order #:** 634062

**Project ID:**

**Analyst:** ISU

**Date Prepared:** 08.15.2019

**Date Analyzed:** 08.15.2019

**Lab Batch ID:** 3098797

**Sample:** 7684305-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<10.0	1000	915	92	1000	942	94	3	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	855	86	1000	868	87	2	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries

Project Name: NM Moore Sweet

Work Order #: 634062

Lab Batch ID: 3098990

Date Analyzed: 08.19.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 634062-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.19.2019

Analyst: MIT

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00885	1.96	1.81	92	1.82	1.63	90	10	54-120	25	
Toluene	<0.00458	1.96	2.04	104	1.82	1.82	100	11	57-120	25	
Ethylbenzene	<0.00603	1.96	2.15	110	1.82	1.91	105	12	58-131	25	
m_p-Xylenes	<0.00667	3.91	4.32	110	3.64	3.86	106	11	62-124	25	
o-Xylene	<0.00667	1.96	2.12	108	1.82	1.90	104	11	62-124	25	

Lab Batch ID: 3098689

QC- Sample ID: 634062-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.15.2019

Date Prepared: 08.15.2019

Analyst: JYM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	861	100	944	83	100	950	89	1	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

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

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





## Form 3 - MS / MSD Recoveries

Project Name: NM Moore Sweet

Work Order #: 634062

Lab Batch ID: 3098689

Date Analyzed: 08.15.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 634076-003 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.15.2019

Analyst: JYM

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	101	114	214	99	113	212	98	1	80-120	20	

Lab Batch ID: 3098797

QC- Sample ID: 633722-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.16.2019

Date Prepared: 08.15.2019

Analyst: ISU

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	15.5	1040	910	86	1030	1020	98	11	70-135	35	
Diesel Range Organics (DRO)	967	1040	1580	59	1030	1840	85	15	70-135	35	X

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

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

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







## Inter-Office Shipment

IOS Number : **46292**

Date/Time: 08.14.2019 16:39      Created by: Brenda Ward

Lab# From: **Lubbock**      Delivery Priority:

Lab# To: **Houston**      Air Bill No.: 775989156149


Please send report to: John Builes

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424


E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
634062-001	S	ETT-NW-D @ 2.5'	08.14.2019 12:00	E300	Inorganic Anions by EPA 300/300.1	08.20.2019	09.11.2019	JHB	CL	
634062-001	S	ETT-NW-D @ 2.5'	08.14.2019 12:00	SW8015MOD_NM	TPH by SW8015 Mod	08.20.2019	08.28.2019	JHB	PHCC10C28 PHCC28C3:	
634062-002	S	WTT-NW-D @ 2'	08.14.2019 12:15	E300	Inorganic Anions by EPA 300/300.1	08.20.2019	09.11.2019	JHB	CL	
634062-002	S	WTT-NW-D @ 2'	08.14.2019 12:15	SW8015MOD_NM	TPH by SW8015 Mod	08.20.2019	08.28.2019	JHB	PHCC10C28 PHCC28C3:	
634062-003	S	TT2-Comp 2 @ 5'	08.14.2019 12:30	SW8015MOD_NM	TPH by SW8015 Mod	08.20.2019	08.28.2019	JHB	PHCC10C28 PHCC28C3:	
634062-003	S	TT2-Comp 2 @ 5'	08.14.2019 12:30	E300	Inorganic Anions by EPA 300/300.1	08.20.2019	09.11.2019	JHB	CL	
634062-004	S	TT2-Comp 4 @ 5'	08.14.2019 12:45	SW8015MOD_NM	TPH by SW8015 Mod	08.20.2019	08.28.2019	JHB	PHCC10C28 PHCC28C3:	
634062-004	S	TT2-Comp 4 @ 5'	08.14.2019 12:45	E300	Inorganic Anions by EPA 300/300.1	08.20.2019	09.11.2019	JHB	CL	

## Inter Office Shipment or Sample Comments:

Relinquished By:   
Brenda Ward

Date Relinquished: 08.14.2019

Received By:   
Travis Simmons

Date Received: 08.15.2019 09:30

Cooler Temperature: 2.9





## XENCO Laboratories



## Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 46292

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brenda Ward

Date Sent: 08.14.2019 04.39 PM

Received By: Travis Simmons

Date Received: 08.15.2019 09.30 AM

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

## NonConformance:

## Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Travis Simmons

Date: 08.15.2019



## XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.14.2019 03.13.00 PM

Work Order #: 634062

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Chlorides & 8015 sent to Stafford
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

  
Brenda Ward

Date: 08.14.2019

Checklist reviewed by:

  
John Builes

Date: 08.16.2019



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9I27014



NELAP/TCEQ # T104704516-18-9

Report Date: 10/05/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MN-S1C #1	9I27014-01	Soil	09/24/19 08:10	09-26-2019 16:23
MW-S1C	9I27014-02	Soil	09/24/19 08:20	09-26-2019 16:23
MW-F1C #1@ 5'	9I27014-03	Soil	09/24/19 08:30	09-26-2019 16:23
MW-F1C #2@ 5'	9I27014-04	Soil	09/24/19 08:40	09-26-2019 16:23
MSW-S1C	9I27014-05	Soil	09/24/19 08:50	09-26-2019 16:23
MSW-F1C @ 5'	9I27014-06	Soil	09/24/19 09:00	09-26-2019 16:23
MS-S1C	9I27014-07	Soil	09/24/19 09:10	09-26-2019 16:23
MS-F1C @ 5'	9I27014-08	Soil	09/24/19 09:20	09-26-2019 16:23
ME-S1C	9I27014-09	Soil	09/24/19 09:30	09-26-2019 16:23
ME-F1C #1 @ 4'	9I27014-10	Soil	09/24/19 09:40	09-26-2019 16:23
ME-F1C #2 @ 4'	9I27014-11	Soil	09/24/19 09:50	09-26-2019 16:23
MN-S1C #2	9I27014-12	Soil	09/24/19 10:00	09-26-2019 16:23
MNW-S2	9I27014-13	Soil	09/24/19 10:10	09-26-2019 16:23
MNW-F2 @ 10'	9I27014-14	Soil	09/24/19 10:20	09-26-2019 16:23
MW-S2	9I27014-15	Soil	09/24/19 10:30	09-26-2019 16:23
MW-F2 @ 10'	9I27014-16	Soil	09/24/19 10:40	09-26-2019 16:23
MSW-S2	9I27014-17	Soil	09/24/19 10:50	09-26-2019 16:23
MSW-F2 @ 10'	9I27014-18	Soil	09/24/19 11:00	09-26-2019 16:23
MS-S2	9I27014-19	Soil	09/24/19 11:10	09-26-2019 16:23
MS-F2 @ 10'	9I27014-20	Soil	09/24/19 11:20	09-26-2019 16:23
ME-S2	9I27014-21	Soil	09/24/19 11:40	09-26-2019 16:23
ME-F2 @ 10'	9I27014-22	Soil	09/24/19 11:50	09-26-2019 16:23
MN-S2	9I27014-23	Soil	09/24/19 12:00	09-26-2019 16:23
MN-F2 @ 10'	9I27014-24	Soil	09/24/19 12:10	09-26-2019 16:23

Rerun of Chloride analysis for sample MEF1C #2 @ 4' (9I27014-11) was requested by client on 10-04-19. The results of the rerun are immediately following the results of the initial sample and are denoted by "RE1"



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MN-S1C #1**  
**9I27014-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B
Toluene	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B
Ethylbenzene	ND	0.00211	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B
Xylene (p/m)	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B
Xylene (o)	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B
Surrogate: 4-Bromofluorobenzene		103 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B
Surrogate: 1,4-Difluorobenzene		96.3 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	29.0	1.05	mg/kg dry	1	P9J0108	10/01/19	10/02/19	EPA 300.0
% Moisture	5.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M
>C12-C28	ND	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M
>C28-C35	ND	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M
Surrogate: 1-Chlorooctane		80.3 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M
Surrogate: o-Terphenyl		91.7 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc

Permian Basin Environmental Lab, L.P.

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.*

1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MW-S1C**  
**9I27014-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00204	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	695	1.02	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		82.5 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		94.5 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

*The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.*

1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MW-F1C #1@ 5'**  
**9I27014-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00213	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.8 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		95.5 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	59.2	1.06	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		83.0 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		95.4 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MW-F1C #2@ 5'**  
**9I27014-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00213	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.5 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	42.6	1.06	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		82.6 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		94.7 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MSW-S1C**  
**9127014-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00133	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00133	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00267	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00133	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00133	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		99.7 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	86.7	1.33	mg/kg dry	1	P910108	10/01/19	10/02/19	EPA 300.0	
% Moisture	25.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	33.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	33.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	33.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		84.8 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		100 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	33.3	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MSW-F1C @ 5'**  
**9I27014-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00204	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.5 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	42.4	1.02	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/04/19	TPH 8015M	
>C12-C28	186	25.5	mg/kg dry	1	P9I3004	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		106 %	70-130		P9I3004	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P9I3004	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	186	25.5	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-S1C**  
**9I27014-07 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00103	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00103	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00206	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00103	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		87.6 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	596	1.03	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		90.9 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		97.0 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-F1C @ 5'**

**9127014-08 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00217	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		105 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	124	1.09	mg/kg dry	1	P910108	10/01/19	10/02/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		79.3 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		95.2 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-S1C**  
**9I27014-09 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00211	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	2100	26.3	mg/kg dry	25	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	46.6	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		96.8 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	46.6	26.3	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F1C #1 @ 4'**  
**9I27014-10 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00112	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00112	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00225	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00112	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.8 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		89.2 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	603	1.12	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		93.4 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		109 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F1C #2 @ 4'**  
**9I27014-11 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00215	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.5 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	4050	26.9	mg/kg dry	25	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		92.6 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F1C #2 @ 4'**  
**9I27014-11RE1 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	3650	26.9	mg/kg dry	25	P9J0108	10/01/19	10/05/19	EPA 300.0	
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Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MN-S1C #2**  
**9127014-12 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00211	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00105	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.8 %	75-125		P912706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	197	1.05	mg/kg dry	1	P910108	10/01/19	10/02/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		89.9 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MNW-S2**  
**9I27014-13 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00101	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00101	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00202	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00101	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.0 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	214	1.01	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	1.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	87.0	25.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		93.2 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		100 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	87.0	25.3	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MNW-F2 @ 10'**  
**9I27014-14 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Ethylbenzene	ND	0.00217	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (p/m)	ND	0.00109	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.6 %	75-125		P9I2706	09/27/19	09/27/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	9.26	1.09	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		85.0 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		99.2 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MW-S2**  
**9I27014-15 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00204	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.2 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		114 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	109	1.02	mg/kg dry	1	P9I0108	10/01/19	10/02/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	61.1	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		89.8 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	61.1	25.5	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### MW-F2 @ 10'

### 9127014-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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#### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00217	mg/kg dry	1	P912706	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P912706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.8 %	75-125		P912706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P912706	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	33.7	1.09	mg/kg dry	1	P910108	10/01/19	10/02/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		120 %	70-130		P913004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MSW-S2**  
**9I27014-17 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00104	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00208	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00104	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.2 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	509	1.04	mg/kg dry	1	P9I0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.0	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		99.5 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MSW-F2 @ 10'**  
**9I27014-18 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00111	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00222	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00111	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		99.0 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	353	1.11	mg/kg dry	1	P9I0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: 1-Chlorooctane		105 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Surrogate: o-Terphenyl		122 %	70-130		P9I3004	09/30/19	10/03/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	09/30/19	10/03/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-S2**  
**9I27014-19 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00215	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		99.8 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		115 %	75-125		P9I2706	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	348	1.08	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		94.1 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-F2 @ 10'**  
**9127014-20 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00108	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00215	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00108	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.4 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	61.3	1.08	mg/kg dry	1	P910210	10/02/19	10/02/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	620	26.9	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	149	26.9	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		91.1 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	769	26.9	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-S2**  
**9I27014-21 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00122	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00122	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00244	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00122	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00122	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		105 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		117 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	1030	1.22	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		93.5 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F2 @ 10'**

**9I27014-22 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00112	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00112	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00225	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00112	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.1 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	372	1.12	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	11.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		95.5 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MN-S2**  
**9I27014-23 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00204	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00102	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		95.3 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	1080	1.02	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		97.9 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### MN-F2 @ 10'

### 9127014-24 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00208	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00104	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		115 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.6 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	138	1.04	mg/kg dry	1	P910210	10/02/19	10/02/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		80.9 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		94.2 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2706 - General Preparation (GC)**

**Blank (P9I2706-BLK1)**

Prepared & Analyzed: 09/27/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.129		"	0.120		107	75-125			
Surrogate: 1,4-Difluorobenzene	0.108		"	0.120		90.1	75-125			

**LCS (P9I2706-BS1)**

Prepared & Analyzed: 09/27/19

Benzene	0.0814	0.00100	mg/kg wet	0.100		81.4	80-120			
Toluene	0.109	0.00100	"	0.100		109	80-120			
Ethylbenzene	0.114	0.00200	"	0.100		114	80-120			
Xylene (p/m)	0.224	0.00100	"	0.200		112	80-120			
Xylene (o)	0.109	0.00100	"	0.100		109	80-120			
Surrogate: 4-Bromofluorobenzene	0.133		"	0.120		111	75-125			
Surrogate: 1,4-Difluorobenzene	0.142		"	0.120		118	75-125			

**LCS Dup (P9I2706-BS1)**

Prepared & Analyzed: 09/27/19

Benzene	0.0865	0.00100	mg/kg wet	0.100		86.5	80-120	6.10	20	
Toluene	0.105	0.00100	"	0.100		105	80-120	3.57	20	
Ethylbenzene	0.107	0.00200	"	0.100		107	80-120	6.54	20	
Xylene (p/m)	0.212	0.00100	"	0.200		106	80-120	5.77	20	
Xylene (o)	0.106	0.00100	"	0.100		106	80-120	2.85	20	
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		99.7	75-125			
Surrogate: 1,4-Difluorobenzene	0.127		"	0.120		106	75-125			

**Calibration Blank (P9I2706-CCB1)**

Prepared & Analyzed: 09/27/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.103		"	0.120		86.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.115		"	0.120		95.9	75-125			

Permian Basin Environmental Lab, L.P.

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Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2706 - General Preparation (GC)**

**Calibration Blank (P9I2706-CCB2)**

Prepared & Analyzed: 09/27/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.113		"	0.120		93.9	75-125			

**Calibration Blank (P9I2706-CCB3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.123		"	0.120		102	75-125			
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		91.0	75-125			

**Calibration Check (P9I2706-CCV1)**

Prepared & Analyzed: 09/27/19

Benzene	0.0832	0.00100	mg/kg wet				80-120			
Toluene	0.108	0.00100	"				80-120			
Ethylbenzene	0.108	0.00200	"				80-120			
Xylene (p/m)	0.237	0.00100	"				80-120			
Xylene (o)	0.106	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.139		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.133		"	0.120		111	75-125			

**Calibration Check (P9I2706-CCV2)**

Prepared & Analyzed: 09/27/19

Benzene	0.0967	0.00100	mg/kg wet				80-120			
Toluene	0.109	0.00100	"				80-120			
Ethylbenzene	0.119	0.00200	"				80-120			
Xylene (p/m)	0.215	0.00100	"				80-120			
Xylene (o)	0.106	0.00100	"				80-120			
Surrogate: 1,4-Difluorobenzene	0.135		"	0.120		112	75-125			
Surrogate: 4-Bromofluorobenzene	0.124		"	0.120		104	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P912706 - General Preparation (GC)**

**Calibration Check (P912706-CCV3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0950	0.00100	mg/kg wet				80-120			
Toluene	0.114	0.00100	"				80-120			
Ethylbenzene	0.124	0.00200	"				80-120			
Xylene (p/m)	0.218	0.00100	"				80-120			
Xylene (o)	0.120	0.00100	"				80-120			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			

**Matrix Spike (P912706-MS1)**

Source: 9127014-01

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0728	0.00105	mg/kg dry	0.105	ND	69.1	80-120			QM-05
Toluene	0.0803	0.00105	"	0.105	ND	76.3	80-120			QM-05
Ethylbenzene	0.0928	0.00211	"	0.105	ND	88.2	80-120			
Xylene (p/m)	0.155	0.00105	"	0.211	ND	73.4	80-120			QM-05
Xylene (o)	0.0733	0.00105	"	0.105	ND	69.6	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	0.139		"	0.126		110	75-125			
Surrogate: 4-Bromofluorobenzene	0.123		"	0.126		97.1	75-125			

**Matrix Spike Dup (P912706-MSD1)**

Source: 9127014-01

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0809	0.00105	mg/kg dry	0.105	ND	76.8	80-120	10.5	20	QM-05
Toluene	0.0882	0.00105	"	0.105	ND	83.8	80-120	9.38	20	
Ethylbenzene	0.100	0.00211	"	0.105	ND	95.0	80-120	7.41	20	
Xylene (p/m)	0.166	0.00105	"	0.211	ND	78.9	80-120	7.21	20	QM-05
Xylene (o)	0.0805	0.00105	"	0.105	ND	76.5	80-120	9.42	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.149		"	0.126		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.126		103	75-125			

**Batch P912707 - General Preparation (GC)**

**Blank (P912707-BLK1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.128		"	0.120		106	75-125			
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**LCS (P9I2707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0886	0.00100	mg/kg wet	0.100		88.6	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.103	0.00200	"	0.100		103	80-120			
Xylene (p/m)	0.189	0.00100	"	0.200		94.5	80-120			
Xylene (o)	0.0941	0.00100	"	0.100		94.1	80-120			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.132		"	0.120		110	75-125			

**LCS Dup (P9I2707-BSD1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120	1.47	20	
Toluene	0.110	0.00100	"	0.100		110	80-120	7.37	20	
Ethylbenzene	0.115	0.00200	"	0.100		115	80-120	11.0	20	
Xylene (p/m)	0.204	0.00100	"	0.200		102	80-120	7.54	20	
Xylene (o)	0.104	0.00100	"	0.100		104	80-120	10.2	20	
Surrogate: 1,4-Difluorobenzene	0.141		"	0.120		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.136		"	0.120		113	75-125			

**Calibration Blank (P9I2707-CCB1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		91.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.123		"	0.120		102	75-125			

**Calibration Blank (P9I2707-CCB2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
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Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Blank (P9I2707-CCB3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.7	75-125			

**Calibration Check (P9I2707-CCV1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0950	0.00100	mg/kg wet				80-120			
Toluene	0.114	0.00100	"				80-120			
Ethylbenzene	0.124	0.00200	"				80-120			
Xylene (p/m)	0.218	0.00100	"				80-120			
Xylene (o)	0.120	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			

**Calibration Check (P9I2707-CCV2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0972	0.00100	mg/kg wet				80-120			
Toluene	0.110	0.00100	"				80-120			
Ethylbenzene	0.112	0.00200	"				80-120			
Xylene (p/m)	0.203	0.00100	"				80-120			
Xylene (o)	0.113	0.00100	"				80-120			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			

**Calibration Check (P9I2707-CCV3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.107	0.00100	mg/kg wet				80-120			
Toluene	0.115	0.00100	"				80-120			
Ethylbenzene	0.110	0.00200	"				80-120			
Xylene (p/m)	0.206	0.00100	"				80-120			
Xylene (o)	0.116	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		116	75-125			

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Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

<b>Matrix Spike (P9I2707-MS1)</b>		<b>Source: 9I27014-20</b>		Prepared: 09/27/19		Analyzed: 09/28/19				
Benzene	0.0471	0.00108	mg/kg dry	0.108	ND	43.8	80-120			QM-05
Toluene	0.0531	0.00108	"	0.108	ND	49.4	80-120			QM-05
Ethylbenzene	0.0595	0.00215	"	0.108	ND	55.3	80-120			QM-05
Xylene (p/m)	0.107	0.00108	"	0.215	ND	49.6	80-120			QM-05
Xylene (o)	0.0521	0.00108	"	0.108	ND	48.4	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.128		"	0.129		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.150		"	0.129		116	75-125			

<b>Matrix Spike Dup (P9I2707-MSD1)</b>		<b>Source: 9I27014-20</b>		Prepared: 09/27/19		Analyzed: 09/28/19				
Benzene	0.0645	0.00108	mg/kg dry	0.108	ND	60.0	80-120	31.3	20	QM-05
Toluene	0.0737	0.00108	"	0.108	ND	68.6	80-120	32.5	20	QM-05
Ethylbenzene	0.0798	0.00215	"	0.108	ND	74.2	80-120	29.2	20	QM-05
Xylene (p/m)	0.117	0.00108	"	0.215	ND	54.3	80-120	9.00	20	QM-05
Xylene (o)	0.0564	0.00108	"	0.108	ND	52.4	80-120	7.99	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.151		"	0.129		117	75-125			
Surrogate: 4-Bromofluorobenzene	0.146		"	0.129		113	75-125			

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Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2901 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9I2901-BLK2)</b>				Prepared & Analyzed: 09/29/19						
% Moisture	ND	0.1	%							
<b>Duplicate (P9I2901-DUP1)</b>				Source: 9I27004-05 Prepared & Analyzed: 09/29/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
<b>Duplicate (P9I2901-DUP2)</b>				Source: 9I27005-24 Prepared & Analyzed: 09/29/19						
% Moisture	5.0	0.1	%		5.0			0.00	20	
<b>Duplicate (P9I2901-DUP3)</b>				Source: 9I27007-07 Prepared & Analyzed: 09/29/19						
% Moisture	2.0	0.1	%		3.0			40.0	20	
<b>Duplicate (P9I2901-DUP4)</b>				Source: 9I27009-14 Prepared & Analyzed: 09/29/19						
% Moisture	14.0	0.1	%		14.0			0.00	20	
<b>Duplicate (P9I2901-DUP5)</b>				Source: 9I27011-05 Prepared & Analyzed: 09/29/19						
% Moisture	7.0	0.1	%		6.0			15.4	20	
<b>Duplicate (P9I2901-DUP6)</b>				Source: 9I27014-11 Prepared & Analyzed: 09/29/19						
% Moisture	8.0	0.1	%		7.0			13.3	20	
<b>Duplicate (P9I2901-DUP7)</b>				Source: 9I27022-01 Prepared & Analyzed: 09/29/19						
% Moisture	12.0	0.1	%		19.0			45.2	20	

**Batch P9J0108 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J0108-BLK1)</b>				Prepared: 10/01/19 Analyzed: 10/02/19						
Chloride	ND	1.00	mg/kg wet							

Permian Basin Environmental Lab, L.P.

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Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0108 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P9J0108-BS1)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	430	1.00	mg/kg wet	400	108	80-120			
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**LCS Dup (P9J0108-BSD1)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	423	1.00	mg/kg wet	400	106	80-120	1.71	20	
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**Calibration Blank (P9J0108-CCB1)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	0.00		mg/kg wet						
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**Calibration Blank (P9J0108-CCB2)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	0.00		mg/kg wet						
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**Calibration Check (P9J0108-CCV1)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	20.6		mg/kg	20.0	103	0-200			
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**Calibration Check (P9J0108-CCV2)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	19.3		mg/kg	20.0	96.7	0-200			
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**Calibration Check (P9J0108-CCV3)**

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	22.1		mg/kg	20.0	110	0-200			
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**Matrix Spike (P9J0108-MS1)**

Source: 9127010-14

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	1360	6.10	mg/kg dry	610	728	104	80-120		
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**Matrix Spike (P9J0108-MS2)**

Source: 9127014-09

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	5000	26.3	mg/kg dry	2630	2100	110	80-120		
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**Matrix Spike Dup (P9J0108-MSD1)**

Source: 9127010-14

Prepared: 10/01/19 Analyzed: 10/02/19

Chloride	1350	6.10	mg/kg dry	610	728	102	80-120	0.711	20
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Permian Basin Environmental Lab, L.P.

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0108 - \*\*\* DEFAULT PREP \*\*\***

<b>Matrix Spike Dup (P9J0108-MSD2)</b>	<b>Source: 9127014-09</b>			Prepared: 10/01/19		Analyzed: 10/02/19				
Chloride	5110	26.3	mg/kg dry	2630	2100	114	80-120	2.21	20	

**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J0210-BLK1)</b>	Prepared & Analyzed: 10/02/19									
Chloride	ND	1.00	mg/kg wet							

<b>LCS (P9J0210-BS1)</b>	Prepared & Analyzed: 10/02/19									
Chloride	420	1.00	mg/kg wet	400		105	80-120			

<b>LCS Dup (P9J0210-BSD1)</b>	Prepared & Analyzed: 10/02/19									
Chloride	439	1.00	mg/kg wet	400		110	80-120	4.46	20	

<b>Calibration Blank (P9J0210-CCB1)</b>	Prepared & Analyzed: 10/02/19									
Chloride	0.00		mg/kg wet							

<b>Calibration Blank (P9J0210-CCB2)</b>	Prepared & Analyzed: 10/02/19									
Chloride	0.00		mg/kg wet							

<b>Calibration Check (P9J0210-CCV1)</b>	Prepared & Analyzed: 10/02/19									
Chloride	22.1		mg/kg	20.0		110	0-200			

<b>Calibration Check (P9J0210-CCV2)</b>	Prepared & Analyzed: 10/02/19									
Chloride	21.5		mg/kg	20.0		107	0-200			

<b>Calibration Check (P9J0210-CCV3)</b>	Prepared: 10/02/19 Analyzed: 10/03/19									
Chloride	21.4		mg/kg	20.0		107	0-200			

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Midland TX, 79705

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Project Manager: Curt Stanley

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

<b>Matrix Spike (P9J0210-MS1)</b>		<b>Source: 9127014-17</b>			Prepared & Analyzed: 10/02/19					
Chloride	1040	1.04	mg/kg dry	521	509	101	80-120			
<b>Matrix Spike (P9J0210-MS2)</b>		<b>Source: 9127015-03</b>			Prepared & Analyzed: 10/02/19					
Chloride	1180	1.01	mg/kg dry	505	741	86.8	80-120			
<b>Matrix Spike Dup (P9J0210-MSD1)</b>		<b>Source: 9127014-17</b>			Prepared & Analyzed: 10/02/19					
Chloride	969	1.04	mg/kg dry	521	509	88.2	80-120	6.87	20	
<b>Matrix Spike Dup (P9J0210-MSD2)</b>		<b>Source: 9127015-03</b>			Prepared & Analyzed: 10/02/19					
Chloride	1230	1.01	mg/kg dry	505	741	96.1	80-120	3.88	20	

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Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I3004 - TX 1005**

**Blank (P9I3004-BLK1)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	151		"	140		108	70-130			
Surrogate: o-Terphenyl	85.3		"	70.0		122	70-130			

**LCS (P9I3004-BS1)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	945	25.0	mg/kg wet	1000		94.5	75-125			
>C12-C28	1010	25.0	"	1000		101	75-125			
Surrogate: 1-Chlorooctane	126		"	140		90.3	70-130			
Surrogate: o-Terphenyl	63.0		"	70.0		90.1	70-130			

**LCS Dup (P9I3004-BSD1)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	1150	25.0	mg/kg wet	1000		115	75-125	19.5	20	
>C12-C28	1160	25.0	"	1000		116	75-125	13.6	20	
Surrogate: 1-Chlorooctane	145		"	140		103	70-130			
Surrogate: o-Terphenyl	80.5		"	70.0		115	70-130			

**Calibration Blank (P9I3004-CCB1)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	4.77		mg/kg wet							
>C12-C28	6.00		"							
Surrogate: 1-Chlorooctane	133		"	140		95.1	70-130			
Surrogate: o-Terphenyl	74.2		"	70.0		106	70-130			

**Calibration Blank (P9I3004-CCB2)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	7.16		mg/kg wet							
>C12-C28	12.2		"							
Surrogate: 1-Chlorooctane	136		"	140		97.4	70-130			
Surrogate: o-Terphenyl	77.2		"	70.0		110	70-130			

Permian Basin Environmental Lab, L.P.

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Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I3004 - TX 1005**

**Calibration Check (P9I3004-CCV1)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	483	25.0	mg/kg wet	500		96.5	85-115			
>C12-C28	518	25.0	"	500		104	85-115			
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	52.5		"	50.0		105	70-130			

**Calibration Check (P9I3004-CCV2)**

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	487	25.0	mg/kg wet	500		97.4	85-115			
>C12-C28	519	25.0	"	500		104	85-115			
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	50.8		"	50.0		102	70-130			

**Calibration Check (P9I3004-CCV3)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	516	25.0	mg/kg wet	500		103	85-115			
>C12-C28	561	25.0	"	500		112	85-115			
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	55.2		"	50.0		110	70-130			

**Matrix Spike (P9I3004-MS1)**

Source: 9I27014-18

Prepared: 09/30/19 Analyzed: 10/03/19

C6-C12	1020	27.8	mg/kg dry	1110	ND	92.2	75-125			
>C12-C28	1080	27.8	"	1110	17.7	96.0	75-125			
Surrogate: 1-Chlorooctane	123		"	111		111	70-130			
Surrogate: o-Terphenyl	61.2		"	55.6		110	70-130			

**Matrix Spike Dup (P9I3004-MSD1)**

Source: 9I27014-18

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	1020	27.8	mg/kg dry	1110	ND	91.4	75-125	0.911	20	
>C12-C28	1050	27.8	"	1110	17.7	93.0	75-125	3.14	20	
Surrogate: 1-Chlorooctane	119		"	111		107	70-130			
Surrogate: o-Terphenyl	62.8		"	55.6		113	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch P9J0206 - TX 1005**

**Blank (P9J0206-BLK1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	98.4		"	140		70.3	70-130			
Surrogate: o-Terphenyl	52.8		"	70.0		75.4	70-130			

**LCS (P9J0206-BS1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	936	25.0	mg/kg wet	1000		93.6	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	127		"	140		90.7	70-130			
Surrogate: o-Terphenyl	50.6		"	70.0		72.3	70-130			

**LCS Dup (P9J0206-BSD1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	954	25.0	mg/kg wet	1000		95.4	75-125	1.92	20	
>C12-C28	1020	25.0	"	1000		102	75-125	2.05	20	
Surrogate: 1-Chlorooctane	125		"	140		89.2	70-130			
Surrogate: o-Terphenyl	51.0		"	70.0		72.8	70-130			

**Calibration Blank (P9J0206-CCB1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	10.9		mg/kg wet							
>C12-C28	11.5		"							
Surrogate: 1-Chlorooctane	95.9		"	140		68.5	70-130			S-GC
Surrogate: o-Terphenyl	51.4		"	70.0		73.4	70-130			

**Calibration Blank (P9J0206-CCB2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	5.35		mg/kg wet							
>C12-C28	13.6		"							
Surrogate: 1-Chlorooctane	102		"	140		72.6	70-130			
Surrogate: o-Terphenyl	53.9		"	70.0		77.0	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0206 - TX 1005**

**Calibration Check (P9J0206-CCV1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	536	25.0	mg/kg wet	500		107	85-115			
>C12-C28	547	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	122		"	140		87.3	70-130			
Surrogate: o-Terphenyl	56.0		"	70.0		80.0	70-130			

**Calibration Check (P9J0206-CCV2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	544	25.0	mg/kg wet	500		109	85-115			
>C12-C28	546	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	124		"	140		88.9	70-130			
Surrogate: o-Terphenyl	55.1		"	70.0		78.7	70-130			

**Matrix Spike (P9J0206-MS1)**

Source: 9127014-23

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	834	25.5	mg/kg dry	1020	10.5	80.7	75-125			
>C12-C28	881	25.5	"	1020	10.2	85.3	75-125			
Surrogate: 1-Chlorooctane	125		"	143		87.8	70-130			
Surrogate: o-Terphenyl	51.5		"	71.4		72.1	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ROI Received on Ice

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/5/2019

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Plains - Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

Permian Basin Environmental Lab, L.P.

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**PBMLAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-661-4184

Page 1 of 3

Project Manager: Curt StanleyProject Name: Moore SweetCompany Name: TRC Environmental CorporationProject #: Moore Sweet HistoricalCompany Address: 10 Desta Drive, Ste 150EProject Loc: Lea County, New MexicoCity/State/Zip: Midland/TX/79703

PO #:

Telephone No: (432) 6207729Report Format: ☒ Standard ☐ TRRP ☐ NPDESSampler Signature: Curt Stanleye-mail: cdstanley@trcsolutions.com  
clbryan@paalp.com  
algroves@paalp.com

(lab use only)

ORDER #: 9I27014

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	MN-S1C #1			9/24/2019	810		1	X									Soil	X															X
2	MW-S1C			9/24/2019	820		1	X									Soil	X															X
3	MW-F1C #1 @ 5'			9/24/2019	830		1	X									Soil	X															X
4	MW-F1C #2 @ 5'			9/24/2019	840		1	X									Soil	X															X
5	MSW-S1C			9/24/2019	850		1	X									Soil	X															X
6	MSW-F1C @ 5'			9/24/2019	900		1	X									Soil	X															X
7	MS-S1C			9/24/2019	910		1	X									Soil	X															X
8	MS-F1C @ 5'			9/24/2019	920		1	X									Soil	X															X
9	ME-S1C			9/24/2019	930		1	X									Soil	X															X
10	ME-F1C #1 @ 4'			9/24/2019	940		1	X									Soil	X															X

Special Instructions:

Balletto PlansRelinquished by: 9-26 4:23Relinquished by: 9-26 4:23Relinquished by: 9-26 4:23

Received by:

Received by:

Received by:

Date

Date

Date

Time

Time

Time

Laboratory Comments:

Sample Containers Intact? Y

VOCs Free of HeadSpace? Y

Labels (pre-container)? Y

Custody seals on container(s)? Y

Custody seals on cooler(s)? Y

Sample Hand Delivered by Sampler/Client Rep? Y

by Courier? Y

Temperature Upon Receipt: 60-1

Adjusted: 60-70

°C Factor 1.2



**PERM LAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-661-4184

Page 2 of 3

Project Manager: Curt Stanley

Project Name: Moore Sweet

Company Name: TRC Environmental Corporation

Project #: Moore Sweet Historical

Company Address: 10 Desta Drive, Ste 150E

Project Loc: Lea County, New Mexico

City/State/Zip: Midland/TX/79703

PO #:

Telephone No: (432) 227-7790

Fax No:

Report Format: ☒ Standard ☐ TRRP ☐ NPDESSampler Signature: *C. Stanley*e-mail: cstanley@trcsolutions.com  
clbryant@paalp.com  
algroves@paalp.com

(lab use only)

ORDER #: 9127014

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
11	ME-F1C #2 @ 4'			9/24/2019	950		1	X									Soil	X															X
12	MN-S1C #2			9/24/2019	1000		1	X									Soil	X															X
13	MNW-S2			9/24/2019	1010		1	X									Soil	X															X
14	MNW-F2 @ 10'			9/24/2019	1020		1	X									Soil	X															X
15	MW-S2			9/24/2019	1030		1	X									Soil	X															X
16	MW-F2 @ 10'			9/24/2019	1040		1	X									Soil	X															X
17	MSW-S2			9/24/2019	1050		1	X									Soil	X															X
18	MSW-F2 @ 10'			9/24/2019	1100		1	X									Soil	X															X
19	MS-S2			9/24/2019	1110		1	X									Soil	X															X
20	MS-F2 @ 10'			9/24/2019	1120		1	X									Soil	X															X

## Special Instructions:

9/26/2019  
4:23  
Received by: *Paula*

eliquished by: *Paula*  
Date: 9/26  
Time: 4:23  
Received by: *Paula*

eliquished by: *Paula*  
Date: 9/26  
Time: 4:23  
Received by: *Paula*

## Laboratory Comments:

Sample Containers Initialed? *Y*  
VOCs Free of Headspace? *Y*  
Labels on containers? *Y*  
Custody seals on container(s)? *Y*  
Custody seals on cooler(s)? *Y*  
Sample Hand Delivered by Sampler/Client Rep.? *Y*  
by Courier? *Y*  
Temperature Upon Receipt: *24-1*  
Adjusted: *60-70*

UPS *Y*  
DHL *Y*  
FedEx *Y*  
Lone Star *Y*

Adjusted: *60-70*







**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea Co NM  
Lab Order Number: 9I27016



NELAP/TCEQ # T104704516-18-9

Report Date: 10/05/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sample #1 @ 17'	9I27016-01	Soil	09/24/19 16:00	09-26-2019 16:23
Sample #2 @ 17'	9I27016-02	Soil	09/24/19 16:15	09-26-2019 16:23
Sample #3 @ 17'	9I27016-03	Soil	09/24/19 16:30	09-26-2019 16:23
Sample #4 @ 17'	9I27016-04	Soil	09/24/19 16:45	09-26-2019 16:23
Sample #5 @ 17'	9I27016-05	Soil	09/24/19 17:00	09-26-2019 16:23

Rerun of Chloride analysis for Sample #5 @ 17' (9I27016-05) was requested by client on 10-04-19. The results of the rerun are immediately following the results of the initial sample and are denoted by "RE1"



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Sample #1 @ 17'

### 9I27016-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00222	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00111	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	83.5	1.11	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		88.1 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		97.7 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #2 @ 17'**  
**9127016-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00217	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.9 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	46.4	1.09	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		88.7 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #3 @ 17'**  
**9I27016-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00110	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00110	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00220	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00110	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00110	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.4 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	383	1.10	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	9.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	27.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		104 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		123 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #4 @ 17'**  
**9127016-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00222	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		115 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.0 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	150	1.11	mg/kg dry	1	P9J0211	10/02/19	10/03/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		87.7 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		101 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #5 @ 17'**  
**9127016-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00217	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.1 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	801	1.09	mg/kg dry	1	P9J0211	10/02/19	10/03/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		89.7 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #5 @ 17'**  
**9I27016-05RE1 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	1040	1.09	mg/kg dry	1	P9J0211	10/02/19	10/05/19	EPA 300.0	
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Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P912707 - General Preparation (GC)**

**Blank (P912707-BLK1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.128		"	0.120		106	75-125			
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			

**LCS (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0886	0.00100	mg/kg wet	0.100		88.6	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.103	0.00200	"	0.100		103	80-120			
Xylene (p/m)	0.189	0.00100	"	0.200		94.5	80-120			
Xylene (o)	0.0941	0.00100	"	0.100		94.1	80-120			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.132		"	0.120		110	75-125			

**LCS Dup (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120	1.47	20	
Toluene	0.110	0.00100	"	0.100		110	80-120	7.37	20	
Ethylbenzene	0.115	0.00200	"	0.100		115	80-120	11.0	20	
Xylene (p/m)	0.204	0.00100	"	0.200		102	80-120	7.54	20	
Xylene (o)	0.104	0.00100	"	0.100		104	80-120	10.2	20	
Surrogate: 4-Bromofluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.141		"	0.120		118	75-125			

**Calibration Blank (P912707-CCB1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.123		"	0.120		102	75-125			
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		91.0	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Blank (P9I2707-CCB2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			

**Calibration Blank (P9I2707-CCB3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.7	75-125			

**Calibration Check (P9I2707-CCV1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0950	0.00100	mg/kg wet				80-120			
Toluene	0.114	0.00100	"				80-120			
Ethylbenzene	0.124	0.00200	"				80-120			
Xylene (p/m)	0.218	0.00100	"				80-120			
Xylene (o)	0.120	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			

**Calibration Check (P9I2707-CCV2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0972	0.00100	mg/kg wet				80-120			
Toluene	0.110	0.00100	"				80-120			
Ethylbenzene	0.112	0.00200	"				80-120			
Xylene (p/m)	0.203	0.00100	"				80-120			
Xylene (o)	0.113	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Check (P9I2707-CCV3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.107	0.00100	mg/kg wet				80-120			
Toluene	0.115	0.00100	"				80-120			
Ethylbenzene	0.110	0.00200	"				80-120			
Xylene (p/m)	0.206	0.00100	"				80-120			
Xylene (o)	0.116	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		116	75-125			

**Matrix Spike (P9I2707-MS1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0471	0.00108	mg/kg dry	0.108	ND	43.8	80-120			QM-05
Toluene	0.0531	0.00108	"	0.108	ND	49.4	80-120			QM-05
Ethylbenzene	0.0595	0.00215	"	0.108	ND	55.3	80-120			QM-05
Xylene (p/m)	0.107	0.00108	"	0.215	ND	49.6	80-120			QM-05
Xylene (o)	0.0521	0.00108	"	0.108	ND	48.4	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	0.150		"	0.129		116	75-125			
Surrogate: 4-Bromofluorobenzene	0.128		"	0.129		99.3	75-125			

**Matrix Spike Dup (P9I2707-MSD1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0645	0.00108	mg/kg dry	0.108	ND	60.0	80-120	31.3	20	QM-05
Toluene	0.0737	0.00108	"	0.108	ND	68.6	80-120	32.5	20	QM-05
Ethylbenzene	0.0798	0.00215	"	0.108	ND	74.2	80-120	29.2	20	QM-05
Xylene (p/m)	0.117	0.00108	"	0.215	ND	54.3	80-120	9.00	20	QM-05
Xylene (o)	0.0564	0.00108	"	0.108	ND	52.4	80-120	7.99	20	QM-05
Surrogate: 4-Bromofluorobenzene	0.146		"	0.129		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.151		"	0.129		117	75-125			

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I3005 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9I3005-BLK1)**

Prepared & Analyzed: 09/30/19

% Moisture	ND	0.1	%
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**Duplicate (P9I3005-DUP2)**

Source: 9127030-02

Prepared & Analyzed: 09/30/19

% Moisture	19.0	0.1	%	19.0	0.00	20
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**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9J0210-BLK1)**

Prepared & Analyzed: 10/02/19

Chloride	ND	1.00	mg/kg wet
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**LCS (P9J0210-BS1)**

Prepared & Analyzed: 10/02/19

Chloride	420	1.00	mg/kg wet	400	105	80-120
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**LCS Dup (P9J0210-BSD1)**

Prepared & Analyzed: 10/02/19

Chloride	439	1.00	mg/kg wet	400	110	80-120	4.46	20
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**Calibration Blank (P9J0210-CCB1)**

Prepared & Analyzed: 10/02/19

Chloride	0.00		mg/kg wet
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**Calibration Blank (P9J0210-CCB2)**

Prepared & Analyzed: 10/02/19

Chloride	0.00		mg/kg wet
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**Calibration Check (P9J0210-CCV1)**

Prepared & Analyzed: 10/02/19

Chloride	22.1		mg/kg	20.0	110	0-200
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**Calibration Check (P9J0210-CCV2)**

Prepared & Analyzed: 10/02/19

Chloride	21.5		mg/kg	20.0	107	0-200
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Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

<b>Calibration Check (P9J0210-CCV3)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	21.4		mg/kg	20.0		107	0-200			
<b>Matrix Spike (P9J0210-MS1)</b>				Source: 9I27014-17 Prepared & Analyzed: 10/02/19						
Chloride	1040	1.04	mg/kg dry	521	509	101	80-120			
<b>Matrix Spike (P9J0210-MS2)</b>				Source: 9I27015-03 Prepared & Analyzed: 10/02/19						
Chloride	1180	1.01	mg/kg dry	505	741	86.8	80-120			
<b>Matrix Spike Dup (P9J0210-MSD1)</b>				Source: 9I27014-17 Prepared & Analyzed: 10/02/19						
Chloride	969	1.04	mg/kg dry	521	509	88.2	80-120	6.87	20	
<b>Matrix Spike Dup (P9J0210-MSD2)</b>				Source: 9I27015-03 Prepared & Analyzed: 10/02/19						
Chloride	1230	1.01	mg/kg dry	505	741	96.1	80-120	3.88	20	

**Batch P9J0211 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J0211-BLK1)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P9J0211-BS1)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	438	1.00	mg/kg wet	400		109	80-120			
<b>LCS Dup (P9J0211-BSD1)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	428	1.00	mg/kg wet	400		107	80-120	2.27	20	
<b>Calibration Blank (P9J0211-CCB1)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	0.00		mg/kg wet							

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Project: Moore Sweet  
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Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J0211 - *** DEFAULT PREP ***</b>										
<b>Calibration Blank (P9J0211-CCB2)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	0.00		mg/kg wet							
<b>Calibration Check (P9J0211-CCV1)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	21.4		mg/kg	20.0		107	0-200			
<b>Calibration Check (P9J0211-CCV2)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	21.5		mg/kg	20.0		107	0-200			
<b>Calibration Check (P9J0211-CCV3)</b>				Prepared: 10/02/19 Analyzed: 10/03/19						
Chloride	19.7		mg/kg	20.0		98.3	0-200			
<b>Matrix Spike (P9J0211-MS1)</b>				<b>Source: 9I27017-03</b>		Prepared: 10/02/19 Analyzed: 10/03/19				
Chloride	1380	5.10	mg/kg dry	510	962	81.9	80-120			
<b>Matrix Spike (P9J0211-MS2)</b>				<b>Source: 9I27020-01</b>		Prepared: 10/02/19 Analyzed: 10/03/19				
Chloride	4030	12.5	mg/kg dry	1250	2900	90.1	80-120			
<b>Matrix Spike Dup (P9J0211-MSD1)</b>				<b>Source: 9I27017-03</b>		Prepared: 10/02/19 Analyzed: 10/03/19				
Chloride	1390	5.10	mg/kg dry	510	962	83.6	80-120	0.623	20	
<b>Matrix Spike Dup (P9J0211-MSD2)</b>				<b>Source: 9I27020-01</b>		Prepared: 10/02/19 Analyzed: 10/03/19				
Chloride	4040	12.5	mg/kg dry	1250	2900	90.6	80-120	0.171	20	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0206 - TX 1005**

**Blank (P9J0206-BLK1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	98.4		"	140		70.3	70-130			
Surrogate: o-Terphenyl	52.8		"	70.0		75.4	70-130			

**LCS (P9J0206-BS1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	936	25.0	mg/kg wet	1000		93.6	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	127		"	140		90.7	70-130			
Surrogate: o-Terphenyl	50.6		"	70.0		72.3	70-130			

**LCS Dup (P9J0206-BSD1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	954	25.0	mg/kg wet	1000		95.4	75-125	1.92	20	
>C12-C28	1020	25.0	"	1000		102	75-125	2.05	20	
Surrogate: 1-Chlorooctane	125		"	140		89.2	70-130			
Surrogate: o-Terphenyl	51.0		"	70.0		72.8	70-130			

**Calibration Blank (P9J0206-CCB1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	10.9		mg/kg wet							
>C12-C28	11.5		"							
Surrogate: 1-Chlorooctane	95.9		"	140		68.5	70-130			S-GC
Surrogate: o-Terphenyl	51.4		"	70.0		73.4	70-130			

**Calibration Blank (P9J0206-CCB2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	5.35		mg/kg wet							
>C12-C28	13.6		"							
Surrogate: 1-Chlorooctane	102		"	140		72.6	70-130			
Surrogate: o-Terphenyl	53.9		"	70.0		77.0	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0206 - TX 1005**

**Calibration Check (P9J0206-CCV1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	536	25.0	mg/kg wet	500		107	85-115			
>C12-C28	547	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	122		"	140		87.3	70-130			
Surrogate: o-Terphenyl	56.0		"	70.0		80.0	70-130			

**Calibration Check (P9J0206-CCV2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	544	25.0	mg/kg wet	500		109	85-115			
>C12-C28	546	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	124		"	140		88.9	70-130			
Surrogate: o-Terphenyl	55.1		"	70.0		78.7	70-130			

**Matrix Spike (P9J0206-MS1)**

Source: 9127014-23

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	834	25.5	mg/kg dry	1020	10.5	80.7	75-125			
>C12-C28	881	25.5	"	1020	10.2	85.3	75-125			
Surrogate: 1-Chlorooctane	125		"	143		87.8	70-130			
Surrogate: o-Terphenyl	51.5		"	71.4		72.1	70-130			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date: 10/5/2019

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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**PBETLAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-661-4184

Page 1 of 1

Project Manager: Curt Stanley

Company Name: TRC Environmental Corporation

Company Address: 10 Destia Drive, Ste 150E

City/State/Zip: Midland/TX/79703

Telephone No: (432) 5207720

Sampler Signature: *Curt Stanley*

Fax No:

e-mail: cdstanley@trcsolutions.com

clbryan@paalp.com  
algroves@paalp.com

Report Format:

☒ Standard☐ TRRP☐ NPDES

Project Name: Moore Sweet

Project #: Moore Sweet Historical

Project Loc: Lea County, New Mexico

PO #:

(lab use only)

ORDER #: 9121016

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/8030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	
1	Sample #1 @ 17			9/24/2019	1600		1	X									Soil	X																
2	Sample #2 @ 17			9/24/2019	1615		1	X									Soil	X																
3	Sample #3 @ 17			9/24/2019	1630		1	X									Soil	X																
4	Sample #4 @ 17			9/24/2019	1645		1	X									Soil	X																
5	Sample #5 @ 17			9/24/2019	1700		1	X									Soil	X																

## Special Instructions:

*Bill Hoffman*eliquished by: *Bill Hoffman* Date: 9/26 Time: 4:15 Received by: *Bill Hoffman*eliquished by: *Bill Hoffman* Date: 9/26 Time: 4:15 Received by: *Bill Hoffman*eliquished by: *Bill Hoffman* Date: 9/26 Time: 4:15 Received by: *Bill Hoffman*

## Laboratory Comments:

Sample Containers Initialed?

VOCs Free of Headspace?

Labels on Containers?

Custody seals on containers?

Custody seals on cooler(s)?

Sample Hand Delivered by Sampler/Client Rep?

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 60-70 °C Factor

Adjusted: 60-70



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea Co NM  
Lab Order Number: 9I27015



NELAP/TCEQ # T104704516-18-9

Report Date: 10/04/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M Ramp ES2	9I27015-01	Soil	09/24/19 13:00	09-26-2019 16:23
M Ramp E FL @ 10'	9I27015-02	Soil	09/24/19 13:10	09-26-2019 16:23
M Ramp ES3	9I27015-03	Soil	09/24/19 13:20	09-26-2019 16:23
M Ramp WS3	9I27015-04	Soil	09/24/19 13:30	09-26-2019 16:23
M Ramp WS2	9I27015-05	Soil	09/24/19 13:40	09-26-2019 16:23
M Ramp W FL @ 10'	9I27015-06	Soil	09/24/19 13:50	09-26-2019 16:23
M Ramp Floor #1 Comp	9I27015-07	Soil	09/24/19 14:00	09-26-2019 16:23
M Ramp Floor #2 Comp	9I27015-08	Soil	09/24/19 14:10	09-26-2019 16:23
M Ramp Floor #3 Comp	9I27015-09	Soil	09/24/19 14:20	09-26-2019 16:23



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

## M Ramp ES2

### 9I27015-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00208	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00104	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.2 %		75-125	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.8 %		75-125	P9I2707	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	31.2	1.04	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9I2901	09/29/19	09/29/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		99.2 %		70-130	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		111 %		70-130	P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp E FL @ 10'**  
**9127015-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00213	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.8 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	36.3	1.06	mg/kg dry	1	P910210	10/02/19	10/02/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		93.6 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		110 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp ES3**  
**9127015-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00202	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	741	1.01	mg/kg dry	1	P9J0210	10/02/19	10/02/19	EPA 300.0	
% Moisture	1.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		114 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		118 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.3	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### M Ramp WS3

#### 9127015-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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#### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00202	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		95.2 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	304	1.01	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	1.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		99.9 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.3	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

## M Ramp WS2

### 9127015-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00213	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	9.69	1.06	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	136	26.6	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		110 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		124 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	136	26.6	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp W FL @ 10'**  
**9127015-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00213	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.9 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		117 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	34.5	1.06	mg/kg dry	1	P910210	10/02/19	10/03/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		86.1 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		99.3 %	70-130		P910206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #1 Comp**  
**9127015-07 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00222	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00111	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.9 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	165	1.11	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	10.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	108	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		90.3 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	108	27.8	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #2 Comp**  
**9127015-08 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00105	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00211	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00105	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		84.5 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	288	1.05	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	179	26.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		101 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		115 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	179	26.3	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #3 Comp**  
**9127015-09 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00204	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00102	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		101 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.0 %	75-125		P912707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	149	1.02	mg/kg dry	1	P9J0210	10/02/19	10/03/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P912901	09/29/19	09/29/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C12-C28	117	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: 1-Chlorooctane		89.8 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Surrogate: o-Terphenyl		98.3 %	70-130		P9J0206	09/30/19	10/04/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	117	25.5	mg/kg dry	1	[CALC]	09/30/19	10/04/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P912707 - General Preparation (GC)**

**Blank (P912707-BLK1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.128		"	0.120		106	75-125			

**LCS (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0886	0.00100	mg/kg wet	0.100		88.6	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.103	0.00200	"	0.100		103	80-120			
Xylene (p/m)	0.189	0.00100	"	0.200		94.5	80-120			
Xylene (o)	0.0941	0.00100	"	0.100		94.1	80-120			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.132		"	0.120		110	75-125			

**LCS Dup (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120	1.47	20	
Toluene	0.110	0.00100	"	0.100		110	80-120	7.37	20	
Ethylbenzene	0.115	0.00200	"	0.100		115	80-120	11.0	20	
Xylene (p/m)	0.204	0.00100	"	0.200		102	80-120	7.54	20	
Xylene (o)	0.104	0.00100	"	0.100		104	80-120	10.2	20	
Surrogate: 1,4-Difluorobenzene	0.141		"	0.120		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.136		"	0.120		113	75-125			

**Calibration Blank (P912707-CCB1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		91.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.123		"	0.120		102	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Blank (P9I2707-CCB2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			

**Calibration Blank (P9I2707-CCB3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.7	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			

**Calibration Check (P9I2707-CCV1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0950	0.00100	mg/kg wet				80-120			
Toluene	0.114	0.00100	"				80-120			
Ethylbenzene	0.124	0.00200	"				80-120			
Xylene (p/m)	0.218	0.00100	"				80-120			
Xylene (o)	0.120	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			

**Calibration Check (P9I2707-CCV2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0972	0.00100	mg/kg wet				80-120			
Toluene	0.110	0.00100	"				80-120			
Ethylbenzene	0.112	0.00200	"				80-120			
Xylene (p/m)	0.203	0.00100	"				80-120			
Xylene (o)	0.113	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Check (P9I2707-CCV3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.107	0.00100	mg/kg wet				80-120			
Toluene	0.115	0.00100	"				80-120			
Ethylbenzene	0.110	0.00200	"				80-120			
Xylene (p/m)	0.206	0.00100	"				80-120			
Xylene (o)	0.116	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		116	75-125			

**Matrix Spike (P9I2707-MS1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0471	0.00108	mg/kg dry	0.108	ND	43.8	80-120			QM-05
Toluene	0.0531	0.00108	"	0.108	ND	49.4	80-120			QM-05
Ethylbenzene	0.0595	0.00215	"	0.108	ND	55.3	80-120			QM-05
Xylene (p/m)	0.107	0.00108	"	0.215	ND	49.6	80-120			QM-05
Xylene (o)	0.0521	0.00108	"	0.108	ND	48.4	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.128		"	0.129		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.150		"	0.129		116	75-125			

**Matrix Spike Dup (P9I2707-MSD1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0645	0.00108	mg/kg dry	0.108	ND	60.0	80-120	31.3	20	QM-05
Toluene	0.0737	0.00108	"	0.108	ND	68.6	80-120	32.5	20	QM-05
Ethylbenzene	0.0798	0.00215	"	0.108	ND	74.2	80-120	29.2	20	QM-05
Xylene (p/m)	0.117	0.00108	"	0.215	ND	54.3	80-120	9.00	20	QM-05
Xylene (o)	0.0564	0.00108	"	0.108	ND	52.4	80-120	7.99	20	QM-05
Surrogate: 4-Bromofluorobenzene	0.146		"	0.129		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.151		"	0.129		117	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2901 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9I2901-BLK2)</b>				Prepared & Analyzed: 09/29/19						
% Moisture	ND	0.1	%							
<b>Duplicate (P9I2901-DUP1)</b>				Source: 9I27004-05 Prepared & Analyzed: 09/29/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
<b>Duplicate (P9I2901-DUP2)</b>				Source: 9I27005-24 Prepared & Analyzed: 09/29/19						
% Moisture	5.0	0.1	%		5.0			0.00	20	
<b>Duplicate (P9I2901-DUP3)</b>				Source: 9I27007-07 Prepared & Analyzed: 09/29/19						
% Moisture	2.0	0.1	%		3.0			40.0	20	
<b>Duplicate (P9I2901-DUP4)</b>				Source: 9I27009-14 Prepared & Analyzed: 09/29/19						
% Moisture	14.0	0.1	%		14.0			0.00	20	
<b>Duplicate (P9I2901-DUP5)</b>				Source: 9I27011-05 Prepared & Analyzed: 09/29/19						
% Moisture	7.0	0.1	%		6.0			15.4	20	
<b>Duplicate (P9I2901-DUP6)</b>				Source: 9I27014-11 Prepared & Analyzed: 09/29/19						
% Moisture	8.0	0.1	%		7.0			13.3	20	
<b>Duplicate (P9I2901-DUP7)</b>				Source: 9I27022-01 Prepared & Analyzed: 09/29/19						
% Moisture	12.0	0.1	%		19.0			45.2	20	

**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J0210-BLK1)</b>				Prepared & Analyzed: 10/02/19						
Chloride	ND	1.00	mg/kg wet							

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P9J0210-BS1)** Prepared & Analyzed: 10/02/19

Chloride	420	1.00	mg/kg wet	400		105	80-120			
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**LCS Dup (P9J0210-BSD1)** Prepared & Analyzed: 10/02/19

Chloride	439	1.00	mg/kg wet	400		110	80-120	4.46	20	
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**Calibration Blank (P9J0210-CCB1)** Prepared & Analyzed: 10/02/19

Chloride	0.00		mg/kg wet							
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**Calibration Blank (P9J0210-CCB2)** Prepared & Analyzed: 10/02/19

Chloride	0.00		mg/kg wet							
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**Calibration Check (P9J0210-CCV1)** Prepared & Analyzed: 10/02/19

Chloride	22.1		mg/kg	20.0		110	0-200			
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**Calibration Check (P9J0210-CCV2)** Prepared & Analyzed: 10/02/19

Chloride	21.5		mg/kg	20.0		107	0-200			
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**Calibration Check (P9J0210-CCV3)** Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	21.4		mg/kg	20.0		107	0-200			
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**Matrix Spike (P9J0210-MS1)** Source: 9127014-17 Prepared & Analyzed: 10/02/19

Chloride	1040	1.04	mg/kg dry	521	509	101	80-120			
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**Matrix Spike (P9J0210-MS2)** Source: 9127015-03 Prepared & Analyzed: 10/02/19

Chloride	1180	1.01	mg/kg dry	505	741	86.8	80-120			
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**Matrix Spike Dup (P9J0210-MSD1)** Source: 9127014-17 Prepared & Analyzed: 10/02/19

Chloride	969	1.04	mg/kg dry	521	509	88.2	80-120	6.87	20	
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Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0210 - \*\*\* DEFAULT PREP \*\*\***

**Matrix Spike Dup (P9J0210-MSD2)**

**Source: 9127015-03**

Prepared & Analyzed: 10/02/19

Chloride	1230	1.01	mg/kg dry	505	741	96.1	80-120	3.88	20	
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Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0206 - TX 1005**

**Blank (P9J0206-BLK1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	98.4		"	140		70.3	70-130			
Surrogate: o-Terphenyl	52.8		"	70.0		75.4	70-130			

**LCS (P9J0206-BS1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	936	25.0	mg/kg wet	1000		93.6	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	127		"	140		90.7	70-130			
Surrogate: o-Terphenyl	50.6		"	70.0		72.3	70-130			

**LCS Dup (P9J0206-BSD1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	954	25.0	mg/kg wet	1000		95.4	75-125	1.92	20	
>C12-C28	1020	25.0	"	1000		102	75-125	2.05	20	
Surrogate: 1-Chlorooctane	125		"	140		89.2	70-130			
Surrogate: o-Terphenyl	51.0		"	70.0		72.8	70-130			

**Calibration Blank (P9J0206-CCB1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	10.9		mg/kg wet							
>C12-C28	11.5		"							
Surrogate: 1-Chlorooctane	95.9		"	140		68.5	70-130			S-GC
Surrogate: o-Terphenyl	51.4		"	70.0		73.4	70-130			

**Calibration Blank (P9J0206-CCB2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	5.35		mg/kg wet							
>C12-C28	13.6		"							
Surrogate: 1-Chlorooctane	102		"	140		72.6	70-130			
Surrogate: o-Terphenyl	53.9		"	70.0		77.0	70-130			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0206 - TX 1005**

**Calibration Check (P9J0206-CCV1)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	536	25.0	mg/kg wet	500		107	85-115			
>C12-C28	547	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	122		"	140		87.3	70-130			
Surrogate: o-Terphenyl	56.0		"	70.0		80.0	70-130			

**Calibration Check (P9J0206-CCV2)**

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	544	25.0	mg/kg wet	500		109	85-115			
>C12-C28	546	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	124		"	140		88.9	70-130			
Surrogate: o-Terphenyl	55.1		"	70.0		78.7	70-130			

**Matrix Spike (P9J0206-MS1)**

Source: 9127014-23

Prepared: 09/30/19 Analyzed: 10/04/19

C6-C12	834	25.5	mg/kg dry	1020	10.5	80.7	75-125			
>C12-C28	881	25.5	"	1020	10.2	85.3	75-125			
Surrogate: 1-Chlorooctane	125		"	143		87.8	70-130			
Surrogate: o-Terphenyl	51.5		"	71.4		72.1	70-130			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/4/2019

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

**Phone: 432-661-4184**

Page 1 of 1


**Project Manager:** Curt Stanley

**Company Name** TRC Environmental Corporation

**Company Address:** 10 Desla Drive, Ste 150E

City/State/Zip: Midland/TX 79703

Telephone No: (432) 6207720

Sampler Signature: 

Fax No:

e-mail: [cdstanley@trcsolutions.com](mailto:cdstanley@trcsolutions.com)  
[cibruant@nasa.gov](mailto:cibruant@nasa.gov)

cibryant@paalp.com  
algroves@paalp.com

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**PO#:**

**Project Loc:** Lea County, New Mexico

<b>Project Name:</b>	<b>Moore Sweet</b>
<b>Project #:</b>	<b>Moore Sweet Historical</b>

Page 21 of 21

LAB # (lab use only)		Beginning Depth		Ending Depth		Date Sampled		Time Sampled		Field Filtered		Total #. of Containers		Preservation & # of Containers		Matrix		TCLP		TOTAL		Analyze For:	
1	M Ramp ES2					9/24/2019	1300			1	X												
2	M Ramp E FL @ 10'					9/24/2019	1310			1	X												
3	M Ramp ES3					9/24/2019	1320			1	X												
4	M Ramp WS3					9/24/2019	1330			1	X												
5	M Ramp WS2					9/24/2019	1340			1	X												
6	M Ramp W FL @ 10'					9/24/2019	1350			1	X												
7	M Ramp Floor #1 Comp					9/24/2019	1400			1	X												
8	M Ramp Floor #2 Comp					9/24/2019	1410			1	X												
9	M Ramp Floor #3 Comp					9/24/2019	1420			1	X												
Special Instructions:		Bulldozer Pan																					
Relinquished by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
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**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



## Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea Co NM  
Lab Order Number: 9I27017



NELAP/TCEQ # T104704516-18-9

Report Date: 10/05/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MS3 #1	9I27017-01	Soil	09/24/19 15:00	09-26-2019 16:23
MS3 #2	9I27017-02	Soil	09/24/19 15:15	09-26-2019 16:23
MS3 #3	9I27017-03	Soil	09/24/19 15:30	09-26-2019 16:23



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS3 #1**  
**9I27017-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00101	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Toluene	ND	0.00101	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Ethylbenzene	ND	0.00202	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (p/m)	ND	0.00101	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.2 %	75-125		P9I2707	09/27/19	09/28/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	48.8	1.01	mg/kg dry	1	P9J0211	10/02/19	10/03/19	EPA 300.0	
% Moisture	1.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.3	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C12-C28	ND	25.3	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: 1-Chlorooctane		95.3 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: o-Terphenyl		97.3 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.3	mg/kg dry	1	[CALC]	10/01/19	10/05/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS3 #2**  
**9I27017-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00106	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.0 %	75-125		P9J0106	10/01/19	10/01/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		117 %	75-125		P9J0106	10/01/19	10/01/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	551	1.06	mg/kg dry	1	P9J0211	10/02/19	10/03/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: 1-Chlorooctane		94.2 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: o-Terphenyl		109 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/01/19	10/05/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS3 #3**  
**9I27017-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**Organics by GC**

Benzene	ND	0.00102	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Toluene	ND	0.00102	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Ethylbenzene	ND	0.00102	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Xylene (p/m)	ND	0.00204	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P9J0106	10/01/19	10/01/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		114 %	75-125		P9J0106	10/01/19	10/01/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.4 %	75-125		P9J0106	10/01/19	10/01/19	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	962	5.10	mg/kg dry	5	P9J0211	10/02/19	10/03/19	EPA 300.0	
% Moisture	2.0	0.1	%	1	P9I3005	09/30/19	09/30/19	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	25.5	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: 1-Chlorooctane		107 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-130		P9J0207	10/01/19	10/05/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	10/01/19	10/05/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P912707 - General Preparation (GC)**

**Blank (P912707-BLK1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.128		"	0.120		106	75-125			

**LCS (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0886	0.00100	mg/kg wet	0.100		88.6	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.103	0.00200	"	0.100		103	80-120			
Xylene (p/m)	0.189	0.00100	"	0.200		94.5	80-120			
Xylene (o)	0.0941	0.00100	"	0.100		94.1	80-120			
Surrogate: 4-Bromofluorobenzene	0.126		"	0.120		105	75-125			
Surrogate: 1,4-Difluorobenzene	0.132		"	0.120		110	75-125			

**LCS Dup (P912707-BS1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120	1.47	20	
Toluene	0.110	0.00100	"	0.100		110	80-120	7.37	20	
Ethylbenzene	0.115	0.00200	"	0.100		115	80-120	11.0	20	
Xylene (p/m)	0.204	0.00100	"	0.200		102	80-120	7.54	20	
Xylene (o)	0.104	0.00100	"	0.100		104	80-120	10.2	20	
Surrogate: 4-Bromofluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.141		"	0.120		118	75-125			

**Calibration Blank (P912707-CCB1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.123		"	0.120		102	75-125			
Surrogate: 1,4-Difluorobenzene	0.109		"	0.120		91.0	75-125			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Blank (P9I2707-CCB2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			
Surrogate: 1,4-Difluorobenzene	0.105		"	0.120		87.6	75-125			

**Calibration Blank (P9I2707-CCB3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.7	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			

**Calibration Check (P9I2707-CCV1)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0950	0.00100	mg/kg wet				80-120			
Toluene	0.114	0.00100	"				80-120			
Ethylbenzene	0.124	0.00200	"				80-120			
Xylene (p/m)	0.218	0.00100	"				80-120			
Xylene (o)	0.120	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.140		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.144		"	0.120		120	75-125			

**Calibration Check (P9I2707-CCV2)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0972	0.00100	mg/kg wet				80-120			
Toluene	0.110	0.00100	"				80-120			
Ethylbenzene	0.112	0.00200	"				80-120			
Xylene (p/m)	0.203	0.00100	"				80-120			
Xylene (o)	0.113	0.00100	"				80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I2707 - General Preparation (GC)**

**Calibration Check (P9I2707-CCV3)**

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.107	0.00100	mg/kg wet				80-120			
Toluene	0.115	0.00100	"				80-120			
Ethylbenzene	0.110	0.00200	"				80-120			
Xylene (p/m)	0.206	0.00100	"				80-120			
Xylene (o)	0.116	0.00100	"				80-120			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.120		116	75-125			
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.3	75-125			

**Matrix Spike (P9I2707-MS1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0471	0.00108	mg/kg dry	0.108	ND	43.8	80-120			QM-05
Toluene	0.0531	0.00108	"	0.108	ND	49.4	80-120			QM-05
Ethylbenzene	0.0595	0.00215	"	0.108	ND	55.3	80-120			QM-05
Xylene (p/m)	0.107	0.00108	"	0.215	ND	49.6	80-120			QM-05
Xylene (o)	0.0521	0.00108	"	0.108	ND	48.4	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.128		"	0.129		99.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.150		"	0.129		116	75-125			

**Matrix Spike Dup (P9I2707-MSD1)**

Source: 9I27014-20

Prepared: 09/27/19 Analyzed: 09/28/19

Benzene	0.0645	0.00108	mg/kg dry	0.108	ND	60.0	80-120	31.3	20	QM-05
Toluene	0.0737	0.00108	"	0.108	ND	68.6	80-120	32.5	20	QM-05
Ethylbenzene	0.0798	0.00215	"	0.108	ND	74.2	80-120	29.2	20	QM-05
Xylene (p/m)	0.117	0.00108	"	0.215	ND	54.3	80-120	9.00	20	QM-05
Xylene (o)	0.0564	0.00108	"	0.108	ND	52.4	80-120	7.99	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.151		"	0.129		117	75-125			
Surrogate: 4-Bromofluorobenzene	0.146		"	0.129		113	75-125			

**Batch P9J0106 - General Preparation (GC)**

**Blank (P9J0106-BLK1)**

Prepared & Analyzed: 10/01/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.107		"	0.120		89.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.138		"	0.120		115	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0106 - General Preparation (GC)**

**LCS (P9J0106-BS1)**

Prepared & Analyzed: 10/01/19

Benzene	0.0968	0.00100	mg/kg wet	0.100		96.8	70-130			
Toluene	0.112	0.00100	"	0.100		112	70-130			
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130			
Xylene (p/m)	0.237	0.00200	"	0.200		119	70-130			
Xylene (o)	0.115	0.00100	"	0.100		115	70-130			
Surrogate: 4-Bromofluorobenzene	0.112		"	0.120		93.6	75-125			
Surrogate: 1,4-Difluorobenzene	0.112		"	0.120		93.2	75-125			

**LCS Dup (P9J0106-BSD1)**

Prepared & Analyzed: 10/01/19

Benzene	0.0948	0.00100	mg/kg wet	0.100		94.8	70-130	2.06	20	
Toluene	0.110	0.00100	"	0.100		110	70-130	1.03	20	
Ethylbenzene	0.115	0.00100	"	0.100		115	70-130	1.63	20	
Xylene (p/m)	0.226	0.00200	"	0.200		113	70-130	4.74	20	
Xylene (o)	0.110	0.00100	"	0.100		110	70-130	4.33	20	
Surrogate: 4-Bromofluorobenzene	0.103		"	0.120		86.1	75-125			
Surrogate: 1,4-Difluorobenzene	0.107		"	0.120		89.2	75-125			

**Calibration Blank (P9J0106-CCB1)**

Prepared & Analyzed: 10/01/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.106		"	0.120		88.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.111		"	0.120		92.4	75-125			

**Calibration Blank (P9J0106-CCB2)**

Prepared & Analyzed: 10/01/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.132		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.102		"	0.120		85.3	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0106 - General Preparation (GC)**

**Calibration Blank (P9J0106-CCB3)**

Prepared: 10/01/19 Analyzed: 10/02/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.121		"	0.120		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.128		"	0.120		107	75-125			

**Calibration Check (P9J0106-CCV1)**

Prepared & Analyzed: 10/01/19

Benzene	0.110	0.00100	mg/kg wet	0.100		110	80-120			
Toluene	0.109	0.00100	"	0.100		109	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.228	0.00200	"	0.200		114	80-120			
Xylene (o)	0.118	0.00100	"	0.100		118	80-120			
Surrogate: 4-Bromofluorobenzene	0.116		"	0.120		97.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.124		"	0.120		104	75-125			

**Calibration Check (P9J0106-CCV2)**

Prepared & Analyzed: 10/01/19

Benzene	0.0940	0.00100	mg/kg wet	0.100		94.0	80-120			
Toluene	0.116	0.00100	"	0.100		116	80-120			
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120			
Xylene (p/m)	0.207	0.00200	"	0.200		103	80-120			
Xylene (o)	0.103	0.00100	"	0.100		103	80-120			
Surrogate: 4-Bromofluorobenzene	0.139		"	0.120		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.123		"	0.120		103	75-125			

**Calibration Check (P9J0106-CCV3)**

Prepared: 10/01/19 Analyzed: 10/02/19

Benzene	0.0914	0.00100	mg/kg wet	0.100		91.4	80-120			
Toluene	0.108	0.00100	"	0.100		108	80-120			
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120			
Xylene (p/m)	0.208	0.00200	"	0.200		104	80-120			
Xylene (o)	0.113	0.00100	"	0.100		113	80-120			
Surrogate: 1,4-Difluorobenzene	0.122		"	0.120		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.130		"	0.120		108	75-125			

Permian Basin Environmental Lab, L.P.

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**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0106 - General Preparation (GC)**

<b>Matrix Spike (P9J0106-MS1)</b>		<b>Source: 9127017-02</b>		<b>Prepared: 10/01/19</b>		<b>Analyzed: 10/02/19</b>				
Benzene	0.0611	0.00106	mg/kg dry	0.106	ND	57.4	80-120			QM-07
Toluene	0.0848	0.00106	"	0.106	ND	79.7	80-120			QM-07
Ethylbenzene	0.113	0.00106	"	0.106	ND	107	80-120			
Xylene (p/m)	0.173	0.00213	"	0.213	ND	81.5	80-120			
Xylene (o)	0.0867	0.00106	"	0.106	ND	81.5	80-120			
Surrogate: 1,4-Difluorobenzene	0.139		"	0.128		109	75-125			
Surrogate: 4-Bromofluorobenzene	0.147		"	0.128		115	75-125			

<b>Matrix Spike Dup (P9J0106-MSD1)</b>		<b>Source: 9127017-02</b>		<b>Prepared: 10/01/19</b>		<b>Analyzed: 10/02/19</b>				
Benzene	0.0785	0.00106	mg/kg dry	0.106	ND	73.8	80-120	25.0	20	QM-07
Toluene	0.0960	0.00106	"	0.106	ND	90.2	80-120	12.3	20	
Ethylbenzene	0.121	0.00106	"	0.106	ND	114	80-120	6.38	20	
Xylene (p/m)	0.196	0.00213	"	0.213	ND	91.9	80-120	12.0	20	
Xylene (o)	0.102	0.00106	"	0.106	ND	96.1	80-120	16.5	20	
Surrogate: 1,4-Difluorobenzene	0.147		"	0.128		115	75-125			
Surrogate: 4-Bromofluorobenzene	0.144		"	0.128		113	75-125			

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9I3005 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9I3005-BLK1)**

Prepared & Analyzed: 09/30/19

% Moisture	ND	0.1	%
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**Duplicate (P9I3005-DUP2)**

Source: 9127030-02

Prepared & Analyzed: 09/30/19

% Moisture	19.0	0.1	%	19.0	0.00	20
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**Batch P9J0211 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9J0211-BLK1)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	ND	1.00	mg/kg wet
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**LCS (P9J0211-BS1)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	438	1.00	mg/kg wet	400	109	80-120
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**LCS Dup (P9J0211-BSD1)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	428	1.00	mg/kg wet	400	107	80-120	2.27	20
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**Calibration Blank (P9J0211-CCB1)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	0.00		mg/kg wet
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**Calibration Blank (P9J0211-CCB2)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	0.00		mg/kg wet
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**Calibration Check (P9J0211-CCV1)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	21.4		mg/kg	20.0	107	0-200
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**Calibration Check (P9J0211-CCV2)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	21.5		mg/kg	20.0	107	0-200
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Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0211 - \*\*\* DEFAULT PREP \*\*\***

**Calibration Check (P9J0211-CCV3)**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	19.7		mg/kg	20.0		98.3	0-200			
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**Matrix Spike (P9J0211-MS1)**

**Source: 9I27017-03**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	1380	5.10	mg/kg dry	510	962	81.9	80-120			
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**Matrix Spike (P9J0211-MS2)**

**Source: 9I27020-01**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	4030	12.5	mg/kg dry	1250	2900	90.1	80-120			
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**Matrix Spike Dup (P9J0211-MSD1)**

**Source: 9I27017-03**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	1390	5.10	mg/kg dry	510	962	83.6	80-120	0.623	20	
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**Matrix Spike Dup (P9J0211-MSD2)**

**Source: 9I27020-01**

Prepared: 10/02/19 Analyzed: 10/03/19

Chloride	4040	12.5	mg/kg dry	1250	2900	90.6	80-120	0.171	20	
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Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0207 - TX 1005**

**Blank (P9J0207-BLK1)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	54.2		"	50.0		108	70-130			

**LCS (P9J0207-BS1)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	992	25.0	mg/kg wet	1000		99.2	75-125			
>C12-C28	1070	25.0	"	1000		107	75-125			
Surrogate: 1-Chlorooctane	129		"	100		129	70-130			
Surrogate: o-Terphenyl	49.2		"	50.0		98.5	70-130			

**LCS Dup (P9J0207-BSD1)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	983	25.0	mg/kg wet	1000		98.3	75-125	0.908	20	
>C12-C28	1050	25.0	"	1000		105	75-125	2.11	20	
Surrogate: 1-Chlorooctane	127		"	100		127	70-130			
Surrogate: o-Terphenyl	49.4		"	50.0		98.8	70-130			

**Calibration Blank (P9J0207-CCB1)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	6.76		mg/kg wet							
>C12-C28	15.2		"							
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	53.8		"	50.0		108	70-130			

**Calibration Blank (P9J0207-CCB2)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	9.57		mg/kg wet							
>C12-C28	22.4		"							
Surrogate: 1-Chlorooctane	99.4		"	100		99.4	70-130			
Surrogate: o-Terphenyl	53.1		"	50.0		106	70-130			

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J0207 - TX 1005**

**Calibration Check (P9J0207-CCV1)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	515	25.0	mg/kg wet	500		103	85-115			
>C12-C28	537	25.0	"	500		107	85-115			
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	52.1		"	50.0		104	70-130			

**Calibration Check (P9J0207-CCV2)**

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	511	25.0	mg/kg wet	500		102	85-115			
>C12-C28	542	25.0	"	500		108	85-115			
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	51.8		"	50.0		104	70-130			

**Matrix Spike (P9J0207-MS1)**

Source: 9127017-01

Prepared: 10/01/19 Analyzed: 10/05/19

C6-C12	983	25.3	mg/kg dry	1010	10.5	96.2	75-125			
>C12-C28	1030	25.3	"	1010	12.2	101	75-125			
Surrogate: 1-Chlorooctane	121		"	101		120	70-130			
Surrogate: o-Terphenyl	64.3		"	50.5		127	70-130			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/5/2019

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9J21006



NELAP/TCEQ # T104704516-18-9

Report Date: 10/30/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-S1C-A	9J21006-01	Soil	10/17/19 10:40	10-21-2019 11:26
MSW-F1C @ 7'	9J21006-02	Soil	10/17/19 11:19	10-21-2019 11:26
MS-F2 @ 13'	9J21006-03	Soil	10/17/19 14:02	10-21-2019 11:26
ME-S1C-A	9J21006-04	Soil	10/18/19 15:00	10-21-2019 11:26
ME-F1C #2 @ 7'	9J21006-05	Soil	10/18/19 15:10	10-21-2019 11:26
ME-F1C #1 @ 7'	9J21006-06	Soil	10/18/19 15:20	10-21-2019 11:26
ME-S2-A	9J21006-07	Soil	10/18/19 15:30	10-21-2019 11:26



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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MW-S1C-A**  
**9J21006-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	114	1.12	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0
% Moisture	11.0	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MSW-F1C @ 7'**  
**9J21006-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
<b>&gt;C12-C28</b>	<b>83.6</b>	28.1	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		130 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: o-Terphenyl		143 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>83.6</b>	28.1	mg/kg dry	1	[CALC]	10/23/19	10/24/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-F2 @ 13'**

**9J21006-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
>C12-C28	<b>485</b>	28.7	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
>C28-C35	<b>65.0</b>	28.7	mg/kg dry	1	P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P9J2308	10/23/19	10/24/19	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>550</b>	28.7	mg/kg dry	1	[CALC]	10/23/19	10/24/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

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Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-S1C-A**  
**9J21006-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>439</b>	1.16	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0	
<b>% Moisture</b>	<b>14.0</b>	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F1C #2 @ 7'**  
**9J21006-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>158</b>	1.11	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ME-F1C #1 @ 7'**  
**9J21006-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	72.2	1.14	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0
% Moisture	12.0	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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Project Manager: Curt Stanley

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**ME-S2-A**  
**9J21006-07 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	285	1.12	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0
% Moisture	11.0	0.1	%	1	P9J2201	10/22/19	10/22/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J2201 - *** DEFAULT PREP ***</b>										
<b>Blank (P9J2201-BLK1)</b>	Prepared & Analyzed: 10/22/19									
% Moisture	ND	0.1	%							
<b>Duplicate (P9J2201-DUP1)</b>	Source: 9J19005-13 Prepared & Analyzed: 10/22/19									
% Moisture	8.0	0.1	%		10.0			22.2	20	R2
<b>Duplicate (P9J2201-DUP2)</b>	Source: 9J19003-09 Prepared & Analyzed: 10/22/19									
% Moisture	11.0	0.1	%		7.0			44.4	20	R2
<b>Duplicate (P9J2201-DUP3)</b>	Source: 9J19007-04 Prepared & Analyzed: 10/22/19									
% Moisture	4.0	0.1	%		4.0			0.00	20	
<b>Duplicate (P9J2201-DUP4)</b>	Source: 9J19008-11 Prepared & Analyzed: 10/22/19									
% Moisture	4.0	0.1	%		4.0			0.00	20	
<b>Duplicate (P9J2201-DUP5)</b>	Source: 9J19008-38 Prepared & Analyzed: 10/22/19									
% Moisture	7.0	0.1	%		8.0			13.3	20	
<b>Duplicate (P9J2201-DUP6)</b>	Source: 9J21001-17 Prepared & Analyzed: 10/22/19									
% Moisture	10.0	0.1	%		7.0			35.3	20	R2
<b>Duplicate (P9J2201-DUP7)</b>	Source: 9J21006-07 Prepared & Analyzed: 10/22/19									
% Moisture	11.0	0.1	%		11.0			0.00	20	
<b>Batch P9J2806 - *** DEFAULT PREP ***</b>										
<b>Blank (P9J2806-BLK1)</b>	Prepared: 10/28/19 Analyzed: 10/29/19									
Chloride	ND	0.100	mg/kg wet							

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Page 10 of 17



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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2806 - \*\*\* DEFAULT PREP \*\*\***

**LCS (P9J2806-BS1)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	433	1.00	mg/kg wet	400		108	80-120			
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**LCS Dup (P9J2806-BSD1)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	438	1.00	mg/kg wet	400		109	80-120	1.07	20	
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**Calibration Blank (P9J2806-CCB1)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet							
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**Calibration Blank (P9J2806-CCB2)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet							
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**Calibration Check (P9J2806-CCV1)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	20.7		mg/kg	20.0		104	0-200			
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**Calibration Check (P9J2806-CCV2)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	20.7		mg/kg	20.0		104	0-200			
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**Calibration Check (P9J2806-CCV3)** Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	21.2		mg/kg	20.0		106	0-200			
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**Matrix Spike (P9J2806-MS1)** Source: 9J28001-01 Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	519	1.00	mg/kg dry	500	37.9	96.2	80-120			
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**Matrix Spike (P9J2806-MS2)** Source: 9J22003-02 Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	12000	29.4	mg/kg dry	2940	8820	108	80-120			
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**Matrix Spike Dup (P9J2806-MSD1)** Source: 9J28001-01 Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	516	1.00	mg/kg dry	500	37.9	95.6	80-120	0.512	20	
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Permian Basin Environmental Lab, L.P.

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Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2806 - \*\*\* DEFAULT PREP \*\*\***

**Matrix Spike Dup (P9J2806-MSD2)**

**Source: 9J22003-02**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	11700	29.4	mg/kg dry	2940	8820	98.2	80-120	2.50	20	
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Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch P9J2308 - TX 1005**

**Blank (P9J2308-BLK1)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	64.4		"	50.0		129	70-130			

**LCS (P9J2308-BS1)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	893	25.0	mg/kg wet	1000		89.3	75-125			
>C12-C28	882	25.0	"	1000		88.2	75-125			
Surrogate: 1-Chlorooctane	99.0		"	100		99.0	70-130			
Surrogate: o-Terphenyl	51.7		"	50.0		103	70-130			

**LCS Dup (P9J2308-BS1)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	933	25.0	mg/kg wet	1000		93.3	75-125	4.41	20	
>C12-C28	925	25.0	"	1000		92.5	75-125	4.71	20	
Surrogate: 1-Chlorooctane	105		"	100		105	70-130			
Surrogate: o-Terphenyl	54.6		"	50.0		109	70-130			

**Calibration Blank (P9J2308-CCB1)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	7.29		mg/kg wet							
>C12-C28	5.45		"							
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	60.2		"	50.0		120	70-130			

**Calibration Blank (P9J2308-CCB2)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	8.19		mg/kg wet							
>C12-C28	15.3		"							
Surrogate: 1-Chlorooctane	106		"	100		106	70-130			
Surrogate: o-Terphenyl	56.6		"	50.0		113	70-130			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch P9J2308 - TX 1005**

**Calibration Check (P9J2308-CCV1)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	491	25.0	mg/kg wet	500		98.3	85-115			
>C12-C28	484	25.0	"	500		96.7	85-115			
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	54.5		"	50.0		109	70-130			

**Calibration Check (P9J2308-CCV2)**

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	438	25.0	mg/kg wet	500		87.5	85-115			
>C12-C28	446	25.0	"	500		89.1	85-115			
Surrogate: 1-Chlorooctane	92.9		"	100		92.9	70-130			
Surrogate: o-Terphenyl	49.6		"	50.0		99.2	70-130			

**Matrix Spike (P9J2308-MS1)**

Source: 9J22001-09

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	871	25.0	mg/kg dry	1000	ND	87.1	75-125			
>C12-C28	862	25.0	"	1000	461	40.1	75-125			QM-05
Surrogate: 1-Chlorooctane	91.1		"	100		91.1	70-130			
Surrogate: o-Terphenyl	46.0		"	50.0		92.1	70-130			

**Matrix Spike Dup (P9J2308-MSD1)**

Source: 9J22001-09

Prepared: 10/23/19 Analyzed: 10/24/19

C6-C12	879	25.0	mg/kg dry	1000	ND	87.9	75-125	0.900	20	
>C12-C28	898	25.0	"	1000	461	43.7	75-125	8.45	20	QM-05
Surrogate: 1-Chlorooctane	92.5		"	100		92.5	70-130			
Surrogate: o-Terphenyl	46.5		"	50.0		92.9	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ROI Received on Ice

R2 The RPD exceeded the acceptance limit.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/30/2019

Brent Barron, Laboratory Director/Technical Director

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

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Permian Basin Environmental Lab, L.P.

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**PBHLAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-661-4184

Page 2 of 2

Project Manager: Curt Stanley

Company Name: TRC Environmental Corporation

Company Address: 10 Desta Drive, Ste 150E

City/State/Zip: Midland/TX/79706

Telephone No: (432) 5207720

Sampler Signature: *Curt Stanley*

e-mail: cdstanley@trcsolutions.com

clbrvant@paalp.com  
algroves@paalp.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

PO #:

Project Name: Moore Sweet

Project #: Moore Sweet Historical

Project Loc: Lea County, New Mexico

Page 17 of 17

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 46, 72 hrs	Standard TAT	
1	MW-S1C-A			10/17/2019	1040		1	X									Soil																
2	MSW-F1C @ 7'			10/17/2019	1119		1	X									Soil	X															
3	MSF2 @ 13'			10/17/2019	1402		1	X									Soil	X															
4	ME-S1C-A			10/18/2019	1500		1	X									Soil																
5	ME-F1C #2 @ 7'			10/18/2019	1510		1	X									Soil																
6	ME-F1C #1 @ 7'			10/18/2019	1520		1	X									Soil																
	ME-S2-A			10/18/2019	1530		1	X									Soil																

## Special Instructions:

Received by: *Paula Blodine*  
Date: 10/21/19  
Time: 11:00  
Received by: *Paula Blodine*  
Date: 10/21/19  
Time: 11:26

## Laboratory Comments:

Sample Containers, Inlets? ☒ Y ☐ N  
VOCs Free of Headspace? ☒ Y ☐ N  
Labels on containers? ☒ Y ☐ N  
Custody seals on containers? ☒ Y ☐ N  
Custody seals on bottles? ☒ Y ☐ N  
Sample Hand Delivered ☒ Y ☐ N  
by Sampler/Client Rep.? ☒ Y ☐ N  
by Courier? ☒ Y ☐ N  
UPS ☒ Y ☐ N  
DHL ☒ Y ☐ N  
FedEx ☒ Y ☐ N  
Lone Star ☒ Y ☐ N  
Temperature Upon Receipt: *5.2* °C *CF+1*  
Adjusted: *-1.2* °C Factor *C2*



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



## Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9J22004



NELAP/TCEQ # T104704516-18-9

Report Date: 10/30/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MN-S2-A	9J22004-01	Soil	10/21/19 11:32	10-22-2019 15:34
MS3 #3-A	9J22004-02	Soil	10/21/19 12:31	10-22-2019 15:34
Sample #5A @ 17'	9J22004-03	Soil	10/21/19 14:02	10-22-2019 15:34



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MN-S2-A**  
**9J22004-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	78.1	1.04	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0
% Moisture	4.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS3 #3-A**  
**9J22004-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	75.1	1.12	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0
% Moisture	11.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Sample #5A @ 17'**  
**9J22004-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>13.9</b>	1.14	mg/kg dry	1	P9J2806	10/28/19	10/29/19	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2403 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9J2403-BLK1)**

Prepared & Analyzed: 10/24/19

% Moisture	ND	0.1	%
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**Duplicate (P9J2403-DUP1)**

Source: 9J23001-09

Prepared & Analyzed: 10/24/19

% Moisture	8.0	0.1	%	8.0	0.00	20
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**Duplicate (P9J2403-DUP2)**

Source: 9J23006-03

Prepared & Analyzed: 10/24/19

% Moisture	8.0	0.1	%	8.0	0.00	20
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**Duplicate (P9J2403-DUP3)**

Source: 9J23006-05

Prepared & Analyzed: 10/24/19

% Moisture	10.0	0.1	%	9.0	10.5	20
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**Batch P9J2806 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P9J2806-BLK1)**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	ND	0.100	mg/kg wet
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**LCS (P9J2806-BS1)**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	433	1.00	mg/kg wet	400	108	80-120
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**LCS Dup (P9J2806-BSD1)**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	438	1.00	mg/kg wet	400	109	80-120	1.07	20
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**Calibration Blank (P9J2806-CCB1)**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet
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**Calibration Blank (P9J2806-CCB2)**

Prepared: 10/28/19 Analyzed: 10/29/19

Chloride	0.00		mg/kg wet
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Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J2806 - *** DEFAULT PREP ***</b>										
<b>Calibration Check (P9J2806-CCV1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	20.7		mg/kg	20.0		104	0-200			
<b>Calibration Check (P9J2806-CCV2)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	20.7		mg/kg	20.0		104	0-200			
<b>Calibration Check (P9J2806-CCV3)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	21.2		mg/kg	20.0		106	0-200			
<b>Matrix Spike (P9J2806-MS1)</b>				<b>Source: 9J28001-01</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	519	1.00	mg/kg dry	500	37.9	96.2	80-120			
<b>Matrix Spike (P9J2806-MS2)</b>				<b>Source: 9J22003-02</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	12000	29.4	mg/kg dry	2940	8820	108	80-120			
<b>Matrix Spike Dup (P9J2806-MSD1)</b>				<b>Source: 9J28001-01</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	516	1.00	mg/kg dry	500	37.9	95.6	80-120	0.512	20	
<b>Matrix Spike Dup (P9J2806-MSD2)</b>				<b>Source: 9J22003-02</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	11700	29.4	mg/kg dry	2940	8820	98.2	80-120	2.50	20	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

ROI Received on Ice  
BULK Samples received in Bulk soil containers  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date: 10/30/2019

Brent Barron, Laboratory Director/Technical Director

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Permian Basin Environmental Lab, L.P.

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## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

**Phone: 432-661-4184**

Page 1 of 1

**Project Manager:** Curt Stanley

**Company Name** TRC Environmental Corporation

**Company Address:** 10 Desta Drive, Ste 150E

City/State/Zip: Midland/TX/79703

Telephone No: (432) 520 7720

**Sampler Signature:**

Fax No:

e-mail: [cdstanley@trcsolutions.com](mailto:cdstanley@trcsolutions.com)

[cibryant@paalp.com](mailto:cibryant@paalp.com)  
[algroves@paalp.com](mailto:algroves@paalp.com)

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**PO#:**

**Project Loc:** Lea County, New Mexico

**Project Name:** Moore Sweet

**Project#:** Moore Sweet Historical

Page 9 of 9

[illegible]



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9J23006



**NELAP/TCEQ # T104704516-17-8**

Report Date: 10/30/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M Ramp ES3-A	9J23006-01	Soil	10/22/19 12:30	10-23-2019 11:11
M Ramp WS2-A	9J23006-02	Soil	10/22/19 12:35	10-23-2019 11:11
M Ramp Floor #1A Comp.	9J23006-03	Soil	10/22/19 14:10	10-23-2019 11:11
M Ramp Floor #2A Comp.	9J23006-04	Soil	10/22/19 14:15	10-23-2019 11:11
M Ramp Floor #3A Comp.	9J23006-05	Soil	10/22/19 14:20	10-23-2019 11:11



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### M Ramp ES3-A

#### 9J23006-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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#### Permian Basin Environmental Lab, L.P.

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	21.8	1.10	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0
% Moisture	9.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp WS2-A**  
**9J23006-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

% Moisture	10.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M
>C12-C28	ND	27.8	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M
>C28-C35	ND	27.8	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M
Surrogate: 1-Chlorooctane		102 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M
Surrogate: o-Terphenyl		124 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	10/24/19	10/30/19	calc

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #1A Comp.**  
**9J23006-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

% Moisture	8.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	10/24/19	10/30/19	calc	

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #2A Comp.**  
**9J23006-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>% Moisture</b>	<b>8.0</b>	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
>C12-C28	<b>115</b>	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J2401	10/24/19	10/30/19	TPH 8015M	
Surrogate: 1-Chlorooctane		107 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M	
Surrogate: o-Terphenyl		131 %	70-130		P9J2401	10/24/19	10/30/19	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>115</b>	27.2	mg/kg dry	1	[CALC]	10/24/19	10/30/19	calc	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #3A Comp.**  
**9J23006-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

% Moisture	9.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P9J2404	10/24/19	10/30/19	TPH 8015M
>C12-C28	ND	27.5	mg/kg dry	1	P9J2404	10/24/19	10/30/19	TPH 8015M
>C28-C35	ND	27.5	mg/kg dry	1	P9J2404	10/24/19	10/30/19	TPH 8015M
Surrogate: 1-Chlorooctane		119 %	70-130		P9J2404	10/24/19	10/30/19	TPH 8015M
Surrogate: o-Terphenyl		129 %	70-130		P9J2404	10/24/19	10/30/19	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	27.5	mg/kg dry	1	[CALC]	10/24/19	10/30/19	calc

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J2403 - *** DEFAULT PREP ***</b>										
<b>Blank (P9J2403-BLK1)</b>				Prepared & Analyzed: 10/24/19						
% Moisture	ND	0.1	%							
<b>Duplicate (P9J2403-DUP1)</b>				Source: 9J23001-09 Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
<b>Duplicate (P9J2403-DUP2)</b>				Source: 9J23006-03 Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
<b>Duplicate (P9J2403-DUP3)</b>				Source: 9J23006-05 Prepared & Analyzed: 10/24/19						
% Moisture	10.0	0.1	%		9.0			10.5	20	
<b>Batch P9J2807 - *** DEFAULT PREP ***</b>										
<b>Blank (P9J2807-BLK1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	ND	0.100	mg/kg wet							
<b>LCS (P9J2807-BS1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	436	1.00	mg/kg wet	400		109	80-120			
<b>LCS Dup (P9J2807-BSD1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	442	1.00	mg/kg wet	400		110	80-120	1.25	20	
<b>Calibration Blank (P9J2807-CCB1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	0.00		mg/kg wet							
<b>Calibration Blank (P9J2807-CCB2)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	0.00		mg/kg wet							

Permian Basin Environmental Lab, L.P.

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J2807 - *** DEFAULT PREP ***</b>										
<b>Calibration Check (P9J2807-CCV1)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	21.2		mg/kg	20.0		106	0-200			
<b>Calibration Check (P9J2807-CCV2)</b>				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	20.5		mg/kg	20.0		103	0-200			
<b>Calibration Check (P9J2807-CCV3)</b>				Prepared: 10/28/19 Analyzed: 10/30/19						
Chloride	20.9		mg/kg	20.0		105	0-200			
<b>Matrix Spike (P9J2807-MS1)</b>				<b>Source: 9J22005-04</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	1190	11.2	mg/kg dry	1120	2.84	105	80-120			
<b>Matrix Spike (P9J2807-MS2)</b>				<b>Source: 9J22005-13</b>		Prepared: 10/28/19 Analyzed: 10/30/19				
Chloride	745	5.38	mg/kg dry	538	223	97.2	80-120			
<b>Matrix Spike Dup (P9J2807-MSD1)</b>				<b>Source: 9J22005-04</b>		Prepared: 10/28/19 Analyzed: 10/29/19				
Chloride	1140	11.2	mg/kg dry	1120	2.84	101	80-120	4.32	20	
<b>Matrix Spike Dup (P9J2807-MSD2)</b>				<b>Source: 9J22005-13</b>		Prepared: 10/28/19 Analyzed: 10/30/19				
Chloride	765	5.38	mg/kg dry	538	223	101	80-120	2.66	20	

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2401 - TX 1005**

**Blank (P9J2401-BLK1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	70.4		"	50.0		141	70-130			S-GC

**LCS (P9J2401-BS1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	895	25.0	mg/kg wet	1000		89.5	75-125			
>C12-C28	1010	25.0	"	1000		101	75-125			
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	58.9		"	50.0		118	70-130			

**LCS Dup (P9J2401-BSD1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	883	25.0	mg/kg wet	1000		88.3	75-125	1.34	20	
>C12-C28	994	25.0	"	1000		99.4	75-125	1.89	20	
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	58.5		"	50.0		117	70-130			

**Calibration Blank (P9J2401-CCB1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	0.00		mg/kg wet							
>C12-C28	0.00		"							
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	62.7		"	50.0		125	70-130			

**Calibration Blank (P9J2401-CCB2)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	0.00		mg/kg wet							
>C12-C28	0.00		"							
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	65.7		"	50.0		131	70-130			S-GC

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2401 - TX 1005**

**Calibration Check (P9J2401-CCV1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	490	25.0	mg/kg wet	500		97.9	85-115			
>C12-C28	549	25.0	"	500		110	85-115			
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	60.8		"	50.0		122	70-130			

**Calibration Check (P9J2401-CCV2)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	506	25.0	mg/kg wet	500		101	85-115			
>C12-C28	557	25.0	"	500		111	85-115			
Surrogate: 1-Chlorooctane	117		"	100		117	70-130			
Surrogate: o-Terphenyl	63.4		"	50.0		127	70-130			

**Matrix Spike (P9J2401-MS1)**

Source: 9J23004-02

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	882	26.0	mg/kg dry	1040	ND	84.7	75-125			
>C12-C28	964	26.0	"	1040	ND	92.5	75-125			
Surrogate: 1-Chlorooctane	111		"	104		106	70-130			
Surrogate: o-Terphenyl	50.0		"	52.1		96.1	70-130			

**Matrix Spike Dup (P9J2401-MSD1)**

Source: 9J23004-02

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	901	26.0	mg/kg dry	1040	ND	86.5	75-125	2.12	20	
>C12-C28	978	26.0	"	1040	ND	93.9	75-125	1.46	20	
Surrogate: 1-Chlorooctane	101		"	104		96.8	70-130			
Surrogate: o-Terphenyl	50.1		"	52.1		96.2	70-130			

**Batch P9J2404 - TX 1005**

**Blank (P9J2404-BLK1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	0.00		"	140			70-130			
Surrogate: o-Terphenyl	0.00		"	70.0			70-130			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2404 - TX 1005**

**LCS (P9J2404-BS1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet	1000			75-125			
>C12-C28	ND	25.0	"	1000			75-125			
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

**LCS Dup (P9J2404-BSD1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet	1000			75-125		20	
>C12-C28	ND	25.0	"	1000			75-125		20	
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

**Calibration Blank (P9J2404-CCB1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	0.00		mg/kg wet							
>C12-C28	0.00		"							
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

**Calibration Check (P9J2404-CCV1)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet	500			85-115			
>C12-C28	ND	25.0	"	500			85-115			
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

**Calibration Check (P9J2404-CCV2)**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg wet	500			85-115			
>C12-C28	ND	25.0	"	500			85-115			
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2404 - TX 1005**

**Matrix Spike (P9J2404-MS1)**

**Source: 9J24001-04**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg dry	1000	ND		75-125			
>C12-C28	ND	25.0	"	1000	ND		75-125			
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

**Matrix Spike Dup (P9J2404-MSD1)**

**Source: 9J24001-04**

Prepared: 10/24/19 Analyzed: 10/30/19

C6-C12	ND	25.0	mg/kg dry	1000	ND		75-125		20	
>C12-C28	ND	25.0	"	1000	ND		75-125		20	
Surrogate: 1-Chlorooctane	0.00		"	100			70-130			
Surrogate: o-Terphenyl	0.00		"	50.0			70-130			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ROI Received on Ice

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/30/2019

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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**PBBLAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Pemian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-661-4184

Page 2 of 2

Project Manager: Curt StanleyProject Name: Moore SweetCompany Name: TRC Environmental CorporationProject #: Moore Sweet HistoricalCompany Address: 10 Desia Drive Suite 150EProject Loc: Lea County, NMCity/State/Zip: Midland/TX/79705

PO #:

Telephone No: (432)5207720

Fax No:

Report Format:

☒ Standard☐ TRRP☐ NPDESSampler Signature: [Signature]

e-mail:

cdstanley@trcsolutions.com

(lab use only)

ORDER #: 9J23006clbryant@paalp.com  
algroves@paalp.com  
ssstanley@trcsolutions.com

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 6021B/5030 or BTEX 8280	RCl	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pro-Schedule) 24, 48, 72 hrs	Standard TAT	
1	M Ramp ES3-A			10/22/2019	12:30		1	X																											
2	M Ramp WS2-A			10/22/2019	12:35		1	X																											
3	M Ramp Floor #1A Comp.			10/22/2019	14:10		1	X																											
4	M Ramp Floor #2A Comp.			10/22/2019	14:15		1	X																											
5	M Ramp Floor #3A Comp.			10/22/2019	14:20		1	X																											

Special Instructions:  
Bill to PlainsRelinquished by: [Signature] Date: 10/23/19 Time: 11:11 Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Date: 10-23-19 Time: 1111

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on Containers?

Custody seals on container(s)?

Custody seals on cooler(s)?

Sample Hand Delivered

by Courier? UPS DHL FedEx

Temperature Upon Receipt:

Adjusted: 45.9 °C Factor 1.12



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9J25005



NELAP/TCEQ # T104704516-17-8

Report Date: 10/31/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
South Stockpile	9J25005-01	Soil	10/23/19 11:50	10-25-2019 12:08
North Stockpile	9J25005-02	Soil	10/23/19 12:00	10-25-2019 12:08



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### South Stockpile

#### 9J25005-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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#### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		97.0 %		75-125	P9J2504	10/25/19	10/25/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.9 %		75-125	P9J2504	10/25/19	10/25/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	209	1.06	mg/kg dry	1	P9J3010	10/30/19	10/31/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2802	10/28/19	10/28/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
>C12-C28	74.6	26.6	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
Surrogate: 1-Chlorooctane		80.5 %		70-130	P9J2513	10/25/19	10/28/19	TPH 8015M	
Surrogate: o-Terphenyl		103 %		70-130	P9J2513	10/25/19	10/28/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	74.6	26.6	mg/kg dry	1	[CALC]	10/25/19	10/28/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### North Stockpile

### 9J25005-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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### Permian Basin Environmental Lab, L.P.

#### Organics by GC

Benzene	ND	0.00103	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Toluene	ND	0.00103	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Ethylbenzene	ND	0.00103	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Xylene (p/m)	ND	0.00206	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Xylene (o)	ND	0.00103	mg/kg dry	1	P9J2504	10/25/19	10/25/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-125		P9J2504	10/25/19	10/25/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		106 %	75-125		P9J2504	10/25/19	10/25/19	EPA 8021B	

#### General Chemistry Parameters by EPA / Standard Methods

Chloride	164	1.03	mg/kg dry	1	P9J3010	10/30/19	10/31/19	EPA 300.0	
% Moisture	3.0	0.1	%	1	P9J2802	10/28/19	10/28/19	ASTM D2216	

#### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
>C12-C28	50.9	25.8	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P9J2513	10/25/19	10/28/19	TPH 8015M	
Surrogate: 1-Chlorooctane		89.1 %	70-130		P9J2513	10/25/19	10/28/19	TPH 8015M	
Surrogate: o-Terphenyl		111 %	70-130		P9J2513	10/25/19	10/28/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	50.9	25.8	mg/kg dry	1	[CALC]	10/25/19	10/28/19	calc	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2504 - General Preparation (GC)**

**Blank (P9J2504-BLK1)**

Prepared & Analyzed: 10/25/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.143		"	0.120		120	75-125			
Surrogate: 1,4-Difluorobenzene	0.128		"	0.120		107	75-125			

**LCS (P9J2504-BS1)**

Prepared & Analyzed: 10/25/19

Benzene	0.102	0.00100	mg/kg wet	0.100		102	70-130			
Toluene	0.109	0.00100	"	0.100		109	70-130			
Ethylbenzene	0.119	0.00100	"	0.100		119	70-130			
Xylene (p/m)	0.206	0.00200	"	0.200		103	70-130			
Xylene (o)	0.0966	0.00100	"	0.100		96.6	70-130			
Surrogate: 1,4-Difluorobenzene	0.123		"	0.120		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.127		"	0.120		106	75-125			

**LCS Dup (P9J2504-BSD1)**

Prepared & Analyzed: 10/25/19

Benzene	0.0985	0.00100	mg/kg wet	0.100		98.5	70-130	3.37	20	
Toluene	0.105	0.00100	"	0.100		105	70-130	3.58	20	
Ethylbenzene	0.108	0.00100	"	0.100		108	70-130	9.45	20	
Xylene (p/m)	0.208	0.00200	"	0.200		104	70-130	0.647	20	
Xylene (o)	0.110	0.00100	"	0.100		110	70-130	13.1	20	
Surrogate: 1,4-Difluorobenzene	0.120		"	0.120		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.106		"	0.120		88.0	75-125			

**Calibration Blank (P9J2504-CCB1)**

Prepared & Analyzed: 10/25/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.132		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.116		"	0.120		96.6	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2504 - General Preparation (GC)**

**Calibration Blank (P9J2504-CCB3)**

Prepared: 10/25/19 Analyzed: 10/26/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.112		"	0.120		93.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.125		"	0.120		105	75-125			

**Calibration Check (P9J2504-CCV1)**

Prepared & Analyzed: 10/25/19

Benzene	0.109	0.00100	mg/kg wet	0.100		109	80-120			
Toluene	0.113	0.00100	"	0.100		113	80-120			
Ethylbenzene	0.119	0.00100	"	0.100		119	80-120			
Xylene (p/m)	0.213	0.00200	"	0.200		106	80-120			
Xylene (o)	0.117	0.00100	"	0.100		117	80-120			
Surrogate: 1,4-Difluorobenzene	0.135		"	0.120		113	75-125			
Surrogate: 4-Bromofluorobenzene	0.115		"	0.120		96.1	75-125			

**Calibration Check (P9J2504-CCV3)**

Prepared: 10/25/19 Analyzed: 10/26/19

Benzene	0.101	0.00100	mg/kg wet	0.100		101	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120			
Xylene (p/m)	0.186	0.00200	"	0.200		93.1	80-120			
Xylene (o)	0.105	0.00100	"	0.100		105	80-120			
Surrogate: 4-Bromofluorobenzene	0.132		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			

**Matrix Spike (P9J2504-MS1)**

Source: 9J25001-01

Prepared: 10/25/19 Analyzed: 10/26/19

Benzene	0.0784	0.00104	mg/kg dry	0.104	ND	75.2	80-120			QM-05
Toluene	0.0745	0.00104	"	0.104	ND	71.5	80-120			QM-05
Ethylbenzene	0.0676	0.00104	"	0.104	ND	64.9	80-120			QM-05
Xylene (p/m)	0.0981	0.00208	"	0.208	ND	47.1	80-120			QM-05
Xylene (o)	0.0486	0.00104	"	0.104	ND	46.6	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	0.122		"	0.125		97.5	75-125			
Surrogate: 4-Bromofluorobenzene	0.104		"	0.125		83.1	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Organics by GC - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2504 - General Preparation (GC)**

Matrix Spike Dup (P9J2504-MSD1)		Source: 9J25001-01		Prepared: 10/25/19		Analyzed: 10/26/19				
Benzene	0.0805	0.00104	mg/kg dry	0.104	ND	77.2	80-120	2.65	20	QM-05
Toluene	0.0794	0.00104	"	0.104	ND	76.3	80-120	6.39	20	QM-05
Ethylbenzene	0.0920	0.00104	"	0.104	ND	88.3	80-120	30.5	20	QM-05
Xylene (p/m)	0.135	0.00208	"	0.208	ND	64.6	80-120	31.4	20	QM-05
Xylene (o)	0.0662	0.00104	"	0.104	ND	63.5	80-120	30.7	20	QM-05
Surrogate: 4-Bromofluorobenzene	0.114		"	0.125		91.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.137		"	0.125		109	75-125			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2802 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J2802-BLK1)</b>				Prepared & Analyzed: 10/28/19						
% Moisture	ND	0.1	%							
<b>Duplicate (P9J2802-DUP1)</b>				Source: 9J25004-16 Prepared & Analyzed: 10/28/19						
% Moisture	2.0	0.1	%		2.0			0.00	20	
<b>Duplicate (P9J2802-DUP2)</b>				Source: 9J25009-10 Prepared & Analyzed: 10/28/19						
% Moisture	5.0	0.1	%		6.0			18.2	20	

**Batch P9J3010 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P9J3010-BLK1)</b>				Prepared & Analyzed: 10/30/19						
Chloride	ND	0.100	mg/kg wet							
<b>LCS (P9J3010-BS1)</b>				Prepared & Analyzed: 10/30/19						
Chloride	424	1.00	mg/kg wet	400		106	80-120			
<b>LCS Dup (P9J3010-BSD1)</b>				Prepared & Analyzed: 10/30/19						
Chloride	418	1.00	mg/kg wet	400		105	80-120	1.45	20	
<b>Calibration Blank (P9J3010-CCB1)</b>				Prepared & Analyzed: 10/30/19						
Chloride	0.00		mg/kg wet							
<b>Calibration Blank (P9J3010-CCB2)</b>				Prepared: 10/30/19 Analyzed: 10/31/19						
Chloride	0.00		mg/kg wet							
<b>Calibration Check (P9J3010-CCV1)</b>				Prepared & Analyzed: 10/30/19						
Chloride	19.8		mg/kg	20.0		98.9	0-200			

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9J3010 - *** DEFAULT PREP ***</b>										
<b>Calibration Check (P9J3010-CCV2)</b>				Prepared: 10/30/19 Analyzed: 10/31/19						
Chloride	19.7		mg/kg	20.0		98.6	0-200			
<b>Calibration Check (P9J3010-CCV3)</b>				Prepared: 10/30/19 Analyzed: 10/31/19						
Chloride	18.8		mg/kg	20.0		93.8	0-200			
<b>Matrix Spike (P9J3010-MS1)</b>				<b>Source: 9J30005-01</b>		Prepared & Analyzed: 10/30/19				
Chloride	1560	11.6	mg/kg dry	1160	402	99.4	80-120			
<b>Matrix Spike (P9J3010-MS2)</b>				<b>Source: 9J25001-02</b>		Prepared: 10/30/19 Analyzed: 10/31/19				
Chloride	17700	54.9	mg/kg dry	5490	12400	97.4	80-120			
<b>Matrix Spike Dup (P9J3010-MSD1)</b>				<b>Source: 9J30005-01</b>		Prepared & Analyzed: 10/30/19				
Chloride	1500	11.6	mg/kg dry	1160	402	94.5	80-120	3.77	20	
<b>Matrix Spike Dup (P9J3010-MSD2)</b>				<b>Source: 9J25001-02</b>		Prepared: 10/30/19 Analyzed: 10/31/19				
Chloride	17300	54.9	mg/kg dry	5490	12400	90.6	80-120	2.14	20	

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9J2513 - TX 1005**

**Blank (P9J2513-BLK1)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	96.8		"	100		96.8	70-130			
Surrogate: o-Terphenyl	57.8		"	50.0		116	70-130			

**LCS (P9J2513-BS1)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	1090	25.0	mg/kg wet	1000		109	75-125			
>C12-C28	1180	25.0	"	1000		118	75-125			
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	57.6		"	50.0		115	70-130			

**LCS Dup (P9J2513-BS1)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	1070	25.0	mg/kg wet	1000		107	75-125	2.38	20	
>C12-C28	1170	25.0	"	1000		117	75-125	0.608	20	
Surrogate: 1-Chlorooctane	107		"	100		107	70-130			
Surrogate: o-Terphenyl	56.2		"	50.0		112	70-130			

**Calibration Blank (P9J2513-CCB1)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	19.8		mg/kg wet							
>C12-C28	22.4		"							
Surrogate: 1-Chlorooctane	99.9		"	100		99.9	70-130			
Surrogate: o-Terphenyl	59.3		"	50.0		119	70-130			

**Calibration Blank (P9J2513-CCB2)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	23.0		mg/kg wet							
>C12-C28	18.2		"							
Surrogate: 1-Chlorooctane	98.1		"	100		98.1	70-130			
Surrogate: o-Terphenyl	58.7		"	50.0		117	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch P9J2513 - TX 1005**

**Calibration Check (P9J2513-CCV1)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	541	25.0	mg/kg wet	500		108	85-115			
>C12-C28	536	25.0	"	500		107	85-115			
Surrogate: 1-Chlorooctane	98.2		"	100		98.2	70-130			
Surrogate: o-Terphenyl	54.4		"	50.0		109	70-130			

**Calibration Check (P9J2513-CCV2)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	527	25.0	mg/kg wet	500		105	85-115			
>C12-C28	547	25.0	"	500		109	85-115			
Surrogate: 1-Chlorooctane	95.7		"	100		95.7	70-130			
Surrogate: o-Terphenyl	53.2		"	50.0		106	70-130			

**Calibration Check (P9J2513-CCV3)**

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	523	25.0	mg/kg wet	500		105	85-115			
>C12-C28	558	25.0	"	500		112	85-115			
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	58.5		"	50.0		117	70-130			

**Matrix Spike (P9J2513-MS1)**

Source: 9J25006-04

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	7170	145	mg/kg dry	1160	1820	460	75-125			QM-07
>C12-C28	7570	145	"	1160	4260	285	75-125			QM-07
Surrogate: 1-Chlorooctane	145		"	116		125	70-130			
Surrogate: o-Terphenyl	70.5		"	58.1		121	70-130			

**Matrix Spike Dup (P9J2513-MSD1)**

Source: 9J25006-04

Prepared: 10/25/19 Analyzed: 10/28/19

C6-C12	7230	145	mg/kg dry	1160	1820	465	75-125	1.03	20	QM-07
>C12-C28	10500	145	"	1160	4260	536	75-125	61.3	20	QM-07
Surrogate: 1-Chlorooctane	145		"	116		125	70-130			
Surrogate: o-Terphenyl	65.1		"	58.1		112	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

ROI Received on Ice

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/31/2019

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

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**PBBLAB**

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP  
10014 S. County Road 1213  
Midland, Texas 79706

Phone: 432-861-4184

Page 1 of 14

Project Manager: Curt Stanley

Project Name: Moore Sweet

Company Name: TRC Environmental Corporation

Project #: Moore Sweet Historical

Company Address: 10 Desta Drive, Ste 150E

Project Loc: Lea County, New Mexico

City/State/Zip: Midland/TX/79703

PO #:

Telephone No: (432) 207-7710

Report Format: ☒ Standard ☐ TRRP ☐ NPDESSampler Signature: *Curt Stanley*

e-mail: cstanley@trcsolutions.com

clbryan@paalp.com  
algroves@paalp.com

ORDER #: 9125005

(lab use only)

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8D15M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B 5030 or BTEX 6260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP Benzene	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	South Stockpile			10/23/2019	1150		1	X									Soil	X														X
2	North Stockpile			10/23/2019	1200		1	X									Soil	X														X

## Special Instructions:

Burl to Plains

Relinquished by: *St. Stanley* Date: 10/25/19 Time: 1208

Relinquished by: Date: Time:

Received by: Date: Time:

Received by: Date: Time:

**Laboratory Comments:**  
Sample Containers Initialed? *Yes*  
VOCs Free of Headspace? *Yes*  
Labels on containers? *Yes*  
Custody seals on containers? *Yes*  
Custody seals on cooler(s)? *Yes*  
Sample Hand Delivered by Sampler/Client Rep.? *Yes*  
by Courier? *Yes*  
Temperature Upon Receipt: *4.9* °C  
Adjusted: *5.9* °C  
Factor: *0.112*



**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



## Revised Analytical Report

**Prepared for:**

Curt Stanley  
TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland, TX 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Location: Lea County, NM  
Lab Order Number: 9K08002



NELAP/TCEQ # T104704516-17-8

Report Date: 11/14/19



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M Ramp Floor #2B Comp	9K08002-01	Soil	11/07/19 11:05	11-07-2019 16:20
MS-F2 @ 14'	9K08002-02	Soil	11/07/19 09:30	11-07-2019 16:20



TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**M Ramp Floor #2B Comp  
9K08002-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

% Moisture	16.0	0.1	%	1	P9K1202	11/12/19	11/12/19	ASTM D2216
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
>C12-C28	ND	29.8	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
>C28-C35	ND	29.8	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
Surrogate: 1-Chlorooctane		113 %	70-130		P9K0806	11/08/19	11/11/19	TPH 8015M
Surrogate: o-Terphenyl		117 %	70-130		P9K0806	11/08/19	11/11/19	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	11/08/19	11/11/19	calc

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**MS-F2 @ 14'**  
**9K08002-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P9K1202	11/12/19	11/12/19	ASTM D2216
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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
<b>&gt;C12-C28</b>	<b>38.3</b>	27.5	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
>C28-C35	ND	27.5	mg/kg dry	1	P9K0806	11/08/19	11/11/19	TPH 8015M
Surrogate: 1-Chlorooctane		114 %	70-130		P9K0806	11/08/19	11/11/19	TPH 8015M
Surrogate: o-Terphenyl		121 %	70-130		P9K0806	11/08/19	11/11/19	TPH 8015M
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>38.3</b>	27.5	mg/kg dry	1	[CALC]	11/08/19	11/11/19	calc

Permian Basin Environmental Lab, L.P.

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P9K1202 - *** DEFAULT PREP ***</b>										
<b>Blank (P9K1202-BLK1)</b>				Prepared & Analyzed: 11/12/19						
% Moisture	ND	0.1	%							
<b>Duplicate (P9K1202-DUP1)</b>				Source: 9K08011-12 Prepared & Analyzed: 11/12/19						
% Moisture	7.0	0.1	%		20.0			96.3	20	
<b>Duplicate (P9K1202-DUP2)</b>				Source: 9K08006-04 Prepared & Analyzed: 11/12/19						
% Moisture	18.0	0.1	%		6.0			100	20	
<b>Duplicate (P9K1202-DUP3)</b>				Source: 9K08012-24 Prepared & Analyzed: 11/12/19						
% Moisture	11.0	0.1	%		9.0			20.0	20	
<b>Duplicate (P9K1202-DUP4)</b>				Source: 9K08019-01 Prepared & Analyzed: 11/12/19						
% Moisture	14.0	0.1	%		15.0			6.90	20	
<b>Duplicate (P9K1202-DUP5)</b>				Source: 9K08023-18 Prepared & Analyzed: 11/12/19						
% Moisture	5.0	0.1	%		11.0			75.0	20	
<b>Duplicate (P9K1202-DUP6)</b>				Source: 9K11001-06 Prepared & Analyzed: 11/12/19						
% Moisture	3.0	0.1	%		3.0			0.00	20	

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TRC Solutions- Midland, Texas  
10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9K0806 - TX 1005**

**Blank (P9K0806-BLK1)**

Prepared: 11/08/19 Analyzed: 11/10/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	113		"	100		113	70-130			
Surrogate: o-Terphenyl	57.9		"	50.0		116	70-130			

**LCS (P9K0806-BS1)**

Prepared: 11/08/19 Analyzed: 11/10/19

C6-C12	1060	25.0	mg/kg wet	1000		106	75-125			
>C12-C28	1070	25.0	"	1000		107	75-125			
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	53.1		"	50.0		106	70-130			

**LCS Dup (P9K0806-BSD1)**

Prepared: 11/08/19 Analyzed: 11/10/19

C6-C12	995	25.0	mg/kg wet	1000		99.5	75-125	6.37	20	
>C12-C28	988	25.0	"	1000		98.8	75-125	7.94	20	
Surrogate: 1-Chlorooctane	103		"	100		103	70-130			
Surrogate: o-Terphenyl	51.2		"	50.0		102	70-130			

**Calibration Blank (P9K0806-CCB1)**

Prepared: 11/08/19 Analyzed: 11/10/19

C6-C12	7.69		mg/kg wet							
>C12-C28	42.0		"							
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	60.6		"	50.0		121	70-130			

**Calibration Blank (P9K0806-CCB2)**

Prepared: 11/08/19 Analyzed: 11/11/19

C6-C12	9.12		mg/kg wet							
>C12-C28	53.9		"							
Surrogate: 1-Chlorooctane	119		"	100		119	70-130			
Surrogate: o-Terphenyl	61.7		"	50.0		123	70-130			

Permian Basin Environmental Lab, L.P.

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Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P9K0806 - TX 1005**

**Calibration Check (P9K0806-CCV1)**

Prepared: 11/08/19 Analyzed: 11/10/19

C6-C12	562	25.0	mg/kg wet	500		112	85-115			
>C12-C28	563	25.0	"	500		113	85-115			
Surrogate: 1-Chlorooctane	107		"	100		107	70-130			
Surrogate: o-Terphenyl	53.5		"	50.0		107	70-130			

**Calibration Check (P9K0806-CCV2)**

Prepared: 11/08/19 Analyzed: 11/11/19

C6-C12	524	25.0	mg/kg wet	500		105	85-115			
>C12-C28	558	25.0	"	500		112	85-115			
Surrogate: 1-Chlorooctane	101		"	100		101	70-130			
Surrogate: o-Terphenyl	52.4		"	50.0		105	70-130			

**Calibration Check (P9K0806-CCV3)**

Prepared: 11/08/19 Analyzed: 11/11/19

C6-C12	561	25.0	mg/kg wet	500		112	85-115			
>C12-C28	556	25.0	"	500		111	85-115			
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	55.3		"	50.0		111	70-130			

**Matrix Spike (P9K0806-MS1)**

Source: 9K08004-02

Prepared: 11/08/19 Analyzed: 11/11/19

C6-C12	987	27.2	mg/kg dry	1090	ND	90.8	75-125			
>C12-C28	921	27.2	"	1090	14.0	83.5	75-125			
Surrogate: 1-Chlorooctane	102		"	109		93.5	70-130			
Surrogate: o-Terphenyl	52.9		"	54.3		97.3	70-130			

**Matrix Spike Dup (P9K0806-MSD1)**

Source: 9K08004-02

Prepared: 11/08/19 Analyzed: 11/11/19

C6-C12	996	27.2	mg/kg dry	1090	ND	91.7	75-125	0.974	20	
>C12-C28	960	27.2	"	1090	14.0	87.0	75-125	4.21	20	
Surrogate: 1-Chlorooctane	102		"	109		94.3	70-130			
Surrogate: o-Terphenyl	53.9		"	54.3		99.2	70-130			

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10 Desta Dr STE 150E  
Midland TX, 79705

Project: Moore Sweet  
Project Number: Moore Sweet Historical  
Project Manager: Curt Stanley

Fax: (432) 520-7701

### Notes and Definitions

ROI Received on Ice  
BULK Samples received in Bulk soil containers  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date:

11/14/2019

Brent Barron, Laboratory Director/Technical Director

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1400 Rankin HWY Midland, TX 79701 432-686-7235







Appendix F  
Request for Approval to Accept Solid Waste  
(NMOCD Form C-138)



1025 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

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

\*Surface Waste Management Facility Operator  
and Generator shall maintain and make this  
documentation available for Division inspection.

## REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

### 1. Generator Name and Address:

Plains Marketing, LP  
505 Big Spring St, Suite 600  
Midland, Texas 79701

### 2. Originating Site:

Moore Sweet Historical

### 3. Location of Material (Street Address, City, State or ULSTR):

UL "A&H", Sec. 13, T11S, R32E

### 4. Source and Description of Waste:

Waste was generated due to a crude oil release.

Estimated Volume 2,500 yd<sup>3</sup> / bbls Known Volume (to be entered by the operator at the end of the haul) \_\_\_\_\_ yd<sup>3</sup> / bbls

### 5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Amber Groves, representative or authorized agent for Plains Marketing, LP do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

### GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Amber Groves, representative for Plains Marketing, LP do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

### 5. Transporter:

Gandy, Corp.

### OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Gandy Marley, Inc. – NMOCDD Permit #NM-1-019

Address of Facility: Section 4, T11S, R31E

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☒ Landfill ☐ Other

### Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME:

Kimberly Murphy

TITLE:

GMI

DATE: 1/2-18

SIGNATURE:

Kimberly Murphy

TELEPHONE NO.:

575-347-0434



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 3685

CONDITIONS

Operator: PLAINS MARKETING L.P. 333 Clay St, Ste 1600 Houston, TX 77002	OGRID: 34053
	Action Number: 3685
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	None	7/29/2021