

A spill calculation worksheet was not prepared for this spill.



November 21, 2025

New Mexico Oil Conservation Division  
District II  
506 W. Texas Street  
Artesia, New Mexico, 88240

Attn: Mike Bratcher

**Re: Closure – XTO Energy, Inc. Nash 42 CTB (nAB1630929291) and Nash Unit #42H (nAB1717131002)**

Dear Mr. Bratcher,

Larson & Associates, Inc. (LAI) on behalf of XTO Energy, Inc. (XTO) an ExxonMobil company submits this request for the New Mexico Oil and Conservation (NMOCD) to complete closure of two (2) releases at the Nash Draw CTB (nAB1630929291) and Nash Draw Unit 42H (nAB1717131002). Both releases are located Unit E (SW/4, NW/4), Section 18, Township 23 South, Range 30 East, in Eddy County, New Mexico. The geodetic position in 32.30651 and -103.92784. Closure of both releases were approved by NMOCD on January 18, 2018, however the NMOCD web portal shows that both releases remain open.

#### **Background**

The release at Nash Draw CTB (nAB1630929291) occurred on October 27, 2016, due to overflow from a tank caused by mechanical failure of a valve. XTO reported that about 124.7 bbls of crude oil were released and that 121 bbls were recovered. The initial release covered an area of about 3,978 square feet. A second release (nAB1717131002) occurred on June 14, 2016, due to failure of a fiberglass line, causing approximately 456.13 bbls and 9.31 bbls of crude oil to be released that covered the same area as the initial release. Both releases occurred in a partially lined tank battery containment and migrated east into an unlined area. Both spills were contained on the pad. No offsite areas were impacted. The first release, Nash 42 CTB, was originally filed by NMOCD under 2RP-3976 and the second release, Nash Unit #42H, was originally filed by NMOCD under 2RP-4253.

#### **Delineation**

A delineation report and remediation plan titled *RP-3976 and 2RP-4235, Delineation Report and Remediation Plan, Nash Draw #42 CTB Crude Oil and Produced Water Spills*, dated June 30, 2017, was approved by the NMOCD on July 27, 2017. The report recommended the following remedial actions:

- Remediate both spills concurrently.
- Soil will be excavated to 1-foot bgs in the unlined areas.
- Additional soil will be removed around sample location DP-6 and DP-8 to a depth between two (2) and four (4) feet bgs.
- Dispose of impacted material at an NMOCD approved disposal facility.
- Collect confirmation samples have them analyzed for BTEX, TPH, and chloride by EPA-846 Method 8021B, EPA-846 Method 8015, and EPA Method 300, respectfully.
- Line the inside of tank battery with a spray in liner.
- Draft a closure report for submittal to the NMOCD.

507 North Marienfeld Street, Suite 201 ♦ Midland, Texas 79701 ♦ Ph. (432) 687-0901 ♦ Fax (432) 687-0456

**Remediation**

Remediation was completed for both releases between August 8 and 16, 2017. The remediation covered all areas impacted by the releases and about 805.82 cubic yards of impacted material was disposed of at the Lea Land Landfill. The excavation was backfilled between August 21 and 23, 2017 and a spray-in liner was installed inside of the containment. The NMOCD approved closure of both releases on January 18, 2018. ExxonMobil requests permanent closure for both spills. Attachment A provides NMOCD communications with NMOCD closure approval. Attachment B Presents the original closure report. Please contact R. Dale Woodall with ExxonMobil at (575) 988-4374 or email [Robert.D.Woodall@exxonmobil.com](mailto:Robert.D.Woodall@exxonmobil.com) or me at (432) 687-0901 or email [dstgermain@laenvironmental.com](mailto:dstgermain@laenvironmental.com), if you have questions.

Respectfully submitted,  
**Larson & Associates, Inc.**

*Daniel St. Germain*

Daniel St. Germain, P.G.  
Office: (432) 684-0901  
Cell: (432) 664-5357  
Encl.

## **Attachment A**

### **NMOCD Communications and Closure Approval**

## Littrell, Kyle

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**From:** Williams, Luke  
**Sent:** Monday, January 22, 2018 4:24 PM  
**To:** Littrell, Kyle  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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**From:** Weaver, Crystal, EMNRD [mailto:Crystal.Weaver@state.nm.us]  
**Sent:** Thursday, January 18, 2018 4:13 PM  
**To:** Mark Larson <Mark@laenvironmental.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; 'Groves, Amber' <agroves@slo.state.nm.us>  
**Cc:** Williams, Luke <Luke\_Williams@xtoenergy.com>; MNaranjo@slo.state.nm.us; Honea, Tammy <thonea@slo.state.nm.us>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Because Mark has attested to the integrity of the rest of the liner I will go ahead and move forward with the rest of this approval, however, if next time photos can be taken of the liner after the tanks are removed, gravel/fill material is removed etc. that would be very helpful. When secondary lined containment is said to have contained some or have fully contained all of a spill the integrity check efforts combined with the integrity statement as well as before (pics of standing fluid) after photos (pics of liner after secondary containment is cleaned out and inspection of liner is completed) are something we will need to see every time secondary containment is involved.

Also in order to achieve approval from the State Land Office, now that Amber Groves is no longer working there, I believe either Mark Naranjo or Tammy Honea may be members of the SLO who are helping out with that at the current moment. I am not certain so I made sure to at least tag them on this email so that you could figure it out with them from here.

Thank you.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Wednesday, December 27, 2017 11:47 AM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>

**Cc:** 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

First I want to apologize for not responding sooner as your email was caught up in our mail server and took IT to free up. The attached photographs were presented in the delineation report (June 30, 2017). The loose poly liner beneath the remediation area where large holes were observed was removed prior to performing remediation in the area east of the tanks. The liner under the tanks west of the remediation area appeared intact. Fluid was removed from the liner beneath the tanks with a vacuum truck. A roust-a-bout crew removed gravel from the liner with shovels, wheel borrows and a hydrovac truck. LAI inspected the liner after gravel was removed and observed a few small punctures where the roust-a-bout crew nicked the liner while removing gravel. Standing fluid was observed in the lined sumps between the tanks near the center of the battery and in the northeast corner of the battery prior to removing fluids with a vacuum truck. Standing fluid confirms liner integrity. No nicks or cuts were observed in the liner within the sumps. The liner appeared anchored on all sides. The spray-in liner was installed without removing the tanks. Please contact Luke Williams with XTO at (432) 682-8873 or email [Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, November 30, 2017 1:01 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Groves, Amber'  
**Cc:** Sarah Johnson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Mark,

I was just thinking about this one on the ride home yesterday after I sent the email below and I was wondering a few other things on it. I haven't closed it out in our system or anything yet so I wanted to get your answers on my questions below before I do.

I know there was breaks/tears in the liner in the area in between the battery tanks and that one overflow tank but I noticed all the rest of the area around the actual tanks of the battery no sampling or excavating was done. Those battery tanks were taken out so that the spray in secondary containment could be installed correct? So I am assuming then that no further issues were found with the liner in and around or under the battery tanks correct? Or anywhere else for that matter regarding that liner? I noticed also that once the liner went under all of the pipeline that are along side the battery tanks it looked really loose and not pulled tight or anything does it end up keying in at all or does it just stop existing once you get to the bermed edge of the well pad?

Please advise.

Thank you,

## Crystal Weaver

Environmental Specialist  
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811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Weaver, Crystal, EMNRD  
**Sent:** Wednesday, November 29, 2017 2:00 PM  
**To:** 'Mark Larson' <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'Dudley\_McMinn@xtoenergy.com' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>; Sarah Johnson <[SJohnson@laenvironmental.com](mailto:SJohnson@laenvironmental.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Dudley/Mark,

Your request for closure of the above referenced releases are approved. State Land Office locations will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

**\*\*As a side note item doing a delineation on the fly during excavation efforts is not something that OCD is prone to regularly agree to. OCD would prefer to have the impacted areas fully delineated prior to implementation of remedial actions.\*\***

## Crystal Weaver

Environmental Specialist  
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Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

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**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Friday, August 25, 2017 12:23 PM

**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>

**Cc:** 'Dudley\_McMinn@xtoenergy.com' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>; Sarah Johnson <[SJohnson@laenvironmental.com](mailto:SJohnson@laenvironmental.com)>

**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

All,

Please use the link below to download the remediation reports for 2RP-3976 and 2RP-4253 relating to the crude oil and produced water spills at the XTO Energy, Inc., Nash Draw #42 CTB in Eddy County, New Mexico. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/882fafa7-e31b-4edd-b47d-2fefae38aa11>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205



Midland, Texas 79701  
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Cell – 432- 556-8656  
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**From:** Bratcher, Mike, EMNRD [<mailto:mike.bratcher@state.nm.us>]  
**Sent:** Friday, August 18, 2017 4:39 PM  
**To:** Mark Larson; Weaver, Crystal, EMNRD; 'Groves, Amber'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

RE: **2RP-3976 & 2RP-4235**

Mark,

Based on data provided, you are approved to commence backfill operations. Sorry for a perceived delayed response, but if we actually worked everything in the order received, it would be at least a few weeks before you got a response. We do appreciate the thorough job and uncomplicated reporting you provide, along with XTO's willingness and cooperation in maintaining an environmentally solid operation. I do understand the urgency for this particular project and apologize for any inconvenience.

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Friday, August 18, 2017 8:27 AM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Mike,

This summary is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of XTO Energy Inc. (XTO) to present the delineation and remediation of two (2) spills (2RP-3976 and 2RP-4253) at the Nash Draw CTB #42. LAI

requests approval to backfill the excavations so that XTO may install a spray-in liner and resume production. The final reports for 2RP-3976 and 2RP-4253 will be submitted after the excavations area backfilled along with the final C-141s.

On August 8 - 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO had the gun barrel and overflow tanks removed from the remediation area. Immediately following removal of the tanks, Scarborough Drilling mobilized an air rotary rig to DP-11 for the purpose of delineating chloride as requested by OCD. Soil samples were collected with a jam tube sampler at 10, 15, 20, 25 and 30 feet below ground surface (bgs) and were analyzed for chloride by EPA Method 300. Chloride was below 250 mg/Kg in all samples concluding successful vertical delineation. The poly liner was removed from the remediation area and disposed at Lea Land Landfill. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Additional soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner and from areas beneath the tanks and where staining was observed beneath the liner. The area around DP-8 was excavated to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the area north of DP-12 where the recent produced water spill (2RP-4253) had encroached. On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by Methods SW-846--8021B, SW-846-8015M and 300, respectively.

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

S-5, 5.0' – 5.5' (5,450 mg/Kg)  
S-6, 4.5' – 5.0' (9,780 mg/Kg)  
S-10, 1.5' – 2.0' (3,953 mg/Kg)  
S-14, 1.5' – 2.0' (1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

S-5, 2' East (3,580 mg/Kg)  
S-6, 4' North (1,310 mg/Kg)  
S-6, 2' South (18,450 mg/Kg)  
S-6, 2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

S-13, 1.5' – 2.0' (8,210 mg/Kg)  
S-14, 1.5' – 2.0' (1,050 mg/Kg)  
S-16, 0.5' – 1.0' (3,810 mg/Kg)

Between August 14 – 16, 2017, additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom sample (5.0' – 5.5') at S-14. Scarborough Drilling collected samples every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet at S-13 and 20 feet at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Please refer to Table 2. The excavation and sample location drawing is presented as Figure 2. Photographs are attached. Approximately 525.5 tons/cubic yards of contaminated soil was hauled to Le Land Landfill, LLC. Clean caliche was hauled back from Lea Land for backfilling the excavations. LAI, on behalf of XTO, requests OCD approval to backfill the excavations so that XTO may begin installing the spray-in liner and resume production. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701

Office – 432-687-0901  
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Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Mark Larson  
**Sent:** Wednesday, August 09, 2017 7:01 PM  
**To:** 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,  
The tanks (gun barrel and overflow) were emptied today and will be removed on Thursday morning to allow access for equipment to perform remediation. We plan to collect additional samples tomorrow from SB-11 for vertical delineation.  
Mark

---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Monday, August 07, 2017 9:27 AM  
**To:** Mark Larson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Good morning,

Thank you Mark. I may try to make it out to this one if Amber can not.

**Crystal Weaver**  
Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
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---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Sunday, August 6, 2017 6:58 PM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Amber,

This is to inform you that remediation of 2RP-3976 and 2RO-4253 will commence on Monday, August 9, 2017. Please contact Dudley McMinn with XTO Energy, Inc., at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
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*“Serving the Permian Basin Since 2000”*

---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 27, 2017 5:21 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'McMinn, Dudley'; 'Williams, Luke'  
**Cc:** 'Tucker, Shelly'; Groves, Amber  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

First off thank you Mark for your answers to my questions.

I was checking a few clerical details and I wanted to bring a few more things to all of your attention. On the first spill, given case number 2RP-3976, there was no API number provided on the initial C-141 and since it was mentioned that the release was involving a battery our administrative personnel entered this in our system and gave it a facility number instead of relating it to the API for this location. However, on the second spill, given case number 2RP-4253, an API number was provided on the initial C-141 so our administrative personnel entered this one into our system under the API number. So now we have records for two spills recorded in two different places in our system that in fact actually happened at this same site. Please try to remain consistent on what you go with for C-141 documentation and of course for any documentation.

Also I show in my records that this site is on State Land Office administered service but when I look back in the well file history for this site I see documents being provided to the BLM for this facility. Since I have this site as SLO land I am adding Amber Groves, from the State Land Office, to this email chain and I am thus requesting that someone please help to clarify this matter. **So Shelly or Amber can you all please clear up who is the surface owner for this location?**

Finally, getting back to Mark’s answers to my questions.

OCD accepts your proposal for remediation of the above mentioned releases (2RP-3976 and 2RP-4235) with the following conditions:

- Within the answers provided below it is stated that Larson Associates Inc. on behalf of XTO will be submitting samples for laboratory testing of *“total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.”* However, OCD notes that testing for BTEX was not mentioned in either of these statements. OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- Since the second release spanned beyond the extent of the first release it is OCD’s understanding that all impacted areas will be delineated during remedial activities. Excavation depths may vary based on new analytical data.
- Again as mentioned above in bullet point 1, because your response statement below, to my sampling request for areas where there are holes in the liner, does not include the mentioning of sampling for BTEX I want to make it clear that OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- OCD concurs with the answer provided below regarding sampling point DP-11.

Please advise once remedial activities have been scheduled. If this is Federal surface then it will require like approval from BLM, if this is State Land Office surface than it will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## Crystal Weaver

Environmental Specialist

OCD – Artesia District II

811 S. 1<sup>st</sup> Street

Artesia, NM 88210

Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Friday, July 21, 2017 7:24 AM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The following is submitted on behalf of XTO Energy, Inc. (XTO) in response to your questions below:

**Question:** All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?

**Response:** *it is my opinion that the depth of excavation will be similar to what is proposed since the initial spill was mostly crude oil with an small amount of produced water and the recent spill is mostly produced water with a small amount of crude oil. Soil will be excavated until total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

**Response:** *The area east of the tank battery covered by the initial spill is unlined. The recent spill east of the tank battery occurred the lined area where holes are shown in the liner. Soil samples will be collected from the lined area covered by the spill where holes are observed. The soil samples will be analyzed for TPH as determined by EPA SW-846 Method 8015 for GR, DRO and ORO and chloride by Method 300. Soil will be excavated until TPH in bottom sample and sidewall samples where the excavation exceeds 2 feet is below the RRAL (1,000 mg/Kg). Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

**Response:** *A backhoe may be used to confirmed the chloride concentration in soil at DP-11, 5 – 6 feet. The sample will be analyzed by Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** also just noticed one last thing, the label on your Table 1 says that the table is for 2RP-1486, is that a typo?

**Response:** *Good catch! I used an earlier table as a template and didn't change the remediation permit number. Please find the corrected table attached.*

**Question:** also just noticed one last thing, the remediation permit number you refer to for the recent spill (2RP-4235), is that a typo?

**Response:** *This remediation permit (2RP-4235) is for a release at the Devon Energy Production Company Cotton Draw Unit 84! It appears the 3 and 5 were juxtaposed and should be 2RP-4253.*

Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Mark J. Larson, P.G.  
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**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 13, 2017 2:07 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Tucker, Shelly'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Thank you for the submission of this most recent plan and for the submission of the prior one as well. OCD is fine with the idea of remediating both spills at the same time while you have equipment and workers mobilized, etc. and we are fine with both releases being written about in the same work plan and closure report etc., however, the spills will still be treated as separate cases as far as each will be referred to by its individual tracking number and DOR, and each will have to be closed out on our end as individual incidents. So each will need final C-141s.

With that being said, I have looked things over and I have a few questions for you all:

- All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?
- Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

- Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

I look forward to receiving a response to my questions/requests.

If you have any need for clarification or have any questions of your own please contact myself or Mike Bratcher here at the District II Office.

Thank you,

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Monday, July 3, 2017 4:06 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Tucker, Shelly' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** Re: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Mike/Crystal/Shelly,  
Larson & Associates, Inc. (LAI) submits the delineation report and remediation plan for a crude oil spill at the XTO Energy, Inc. (XTO) Nash Draw 42 CTB. Since submitting the plan on May 23, 2017, XTO reported another spill at the facility on June 14, 2017, prior to receiving OCD approval of the remediation plan for the crude oil spill. XTO would like the OCD to consider allowing remediation of both spills under the remediation plan presented herein. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/aac0757d-4e60-4e7d-b88c-f8ac9693cab9>

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**From:** Mark Larson  
**Sent:** Tuesday, May 23, 2017 8:24 AM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** Re: XTO CTB 42 Revised Delineation Report

Mike/Crystal,

Please use the link below to download the revised delineation report for 2RP-3976. The report was revised to include additional photographs for exposing the liner inside the firewall. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/af3a731c-13d6-4830-8201-6944cbd5f9aa>

Respectfully,

Mark J. Larson, P.G.  
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## **Attachment B Remediation Report**

**2RP-3976**  
**Remediation Report**  
**Nash Draw Tank Battery #42 CTB Crude Oil Spill**  
**Eddy County, New Mexico**

LAI Project No. 17-0124-02

August 24, 2017

Prepared for:

XTO Energy, Inc.

500 W. Illinois Ave., Suite 100

Midland, Texas 79707

Prepared by:

Larson & Associates, Inc.


507 North Marienfeld Street, Suite 205

Midland, Texas 79701



Mark J. Larson, P.G.

Certified Professional Geologist #10490



Sarah R. Johnson

Staff Geologist

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## 1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this remediation report on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) District 2, in Artesia, New Mexico and New Mexico State Land Office (SLO), to document remediation of a crude oil spill at the Nash Draw 42 Consolidated Tank Battery (Site). The legal description is Unit E (SW/4, NW/4), Section 18, Township 23 South, Range 30 East, in Eddy County, New Mexico. The geodetic position is North 32° 18' 23.14277" and West 103° 55' 29.89976". Figure 1 presents a topographic map. Figure 2 presents a detailed aerial map.

### 1.1 Background

On October 27, 2016, XTO reported a crude oil spill after a rod line failed at the free water knockout (FWKO) causing the FWKO to dome out and a 210 barrel (bbl) tank to overflow. Approximately 124.7 bbl of crude oil was released with approximately 121 bbl recovered. XTO personnel discovered the release on October 28, 2016. Verbal notification was provided to the OCD District 2 and BLM, on October 28, 2016. It was later determined the surface ownership was State of New Mexico rather than BLM therefore the SLO was notified. The initial C-141 was submitted on November 3, 2016 and approved by OCD District 2 on November 4, 2016, and was assigned remediation permit number 2RP-3976 with conditions.

The spill occurred in an unlined area west of the lined tank battery where the firewall was removed. The spill covered the unlined area and flowed west into the lined containment of the tank battery which was covered with a later of pea sized gravel. XTO contracted a roust-a-bout crew and hydrovac truck to remove oil contaminated pea sized gravel. The liner was pressure washed and inspected for integrity. The contaminated pea gravel was disposed at an OCD approved landfill. The wash water was recovered using the hydrovac truck and disposed in an OCD permitted Class II disposal well. The liner within the tank battery containment was not deteriorated and had a few small holes.

### 1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,020 feet above mean sea level (AMSL);
- Topography slopes toward the south-southeast;
- The nearest surface water feature is a playa lake (Salt Lake) located about 0.75 miles northwest of the Site;
- Surface geology is comprised of unconsolidated Holocene to mid-Pleistocene-age eolian and piedmont-slope deposits that are approximately 80 feet thick according to a log from a nearby well;

2RP-3976 Remediation Report  
Nash Draw Tank Battery #42 Crude Oil Spill  
August 24, 2017

- The Triassic-age Chinle formation of the Dockum group underlies the unconsolidated deposits and is comprised of interbedded sand, clay, and mudstone;
- According to New Mexico Office of the State Engineer (NMOSE) records a well is located about 1.5 miles south in Unit J, Section 24, Township 23 South, Range 29 East with groundwater reported at about 54 feet below ground surface (bgs).

### 1.3 Recommended Remediation Action Levels

Recommended remediation action levels (RRCL) were calculated for benzene, BTEX and TPH based on the following criteria by the OCD in "Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993":

Criteria	Result	Score
Depth-to-Groundwater	50 - 99 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1,000 Horizontal Feet	0

The following RRAL apply to the release for ranking score: 10

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

## 2.0 SPILL DELINEATION

On March 13 – 14, 2017, LAI personnel used direct push technology (DPT) to collect soil samples at twelve (12) locations (DP-1 through DP-12). Soil samples were collected in one foot increments (i.e., 0 to 1, 1 to 2, 2 to 3 feet, etc.) to approximately one (1) foot bgs at location DP-1, 2 feet bgs at locations DP-5 and DP-9, six (6) feet bgs at locations DP-2, DP-4, DP-8, and DP-11, seven (7) feet bgs at location DP-6 and eight (8) feet bgs at locations DP-3, DP-7, DP-10 and DP-12. The samples were screened for organic vapors using the ambient temperature headspace method and reported vapor concentrations above 100 parts per million (ppm) in the following samples:

- DP-2, 0 to 1 foot (1,380 ppm)
- DP-2, 1 to 2 feet (232.3 ppm)
- DP-3, 0 to 1 foot (1,236 ppm)
- DP-3, 3 to 4 feet (141.3 ppm)
- DP-3, 4 to 5 feet (198.3 ppm)
- DP-3, 7 to 8 feet (231.2 ppm)
- DP-3, 4 to 5 feet (198.3 ppm)
- DP-4, 0 to 1 foot (1,250 ppm)
- DP-6, 2 to 3 feet (1,622 ppm)
- DP-6, 3 to 4 feet (1,328 ppm)
- DP-6, 4 to 5 feet (841.9 ppm)
- DP-8, 0 to 1 foot (1,104 ppm)
- DP-8, 1 to 2 feet (1,334 ppm)
- DP-8, 2 to 3 feet (115.8 ppm)
- DP-10, 0 to 1 foot (116.7 ppm)
- DP-10, 1 to 2 feet (590.5 ppm)

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- DP-4, 1 to 2 feet (118.6 ppm)
- DP-6, 0 to 1 foot (1,155 ppm)
- DP-6, 1 to 2 feet (1,836 ppm)
- DP-10, 4 to 5 feet (367.4 ppm)
- DP-11, 5 to 6 feet (101.3 ppm)
- DP-12, 7 to 8 feet (103 ppm)

Laboratory samples were collected in 4 ounce jars that were hand delivered under preservation and chain of custody to Permian Basin Environmental Laboratory (PBEL), a National Laboratory Accreditation Program (NELAP) certified laboratory, located in Midland, Texas. PBEL analyzed samples exhibiting headspace readings above 100 ppm for benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA SW-846 Method 8021B. The laboratory analyzed samples for total petroleum hydrocarbons (TPH) by SW-846 Method 8015M, including gasoline range organics, diesel range organics and oil range organics and chloride by Method 300. Table 1 presents the delineation soil sample analytical data summary. Figure 3 present the DPT sample locations and approximate spill area.

Benzene exceeded the RRAL (10 mg/Kg) in soil samples DP-6, 1 to 2 feet (18.9 mg/Kg). BTEX exceeded the RRAL (50 mg/Kg) in soil samples DP-2, 0 to 1 foot (147.75 mg/Kg), DP-3, 0 to 1 foot (140.53 mg/Kg), DP-6, 0 to 1 foot (230.27 mg/Kg), DP-6, 1 to 2 feet (439.6 mg/Kg), DP-6, 2 to 3 feet (254.36 mg/Kg) and DP-8, 0 to 1 foot (110.56 mg/Kg). TPH exceeded the RRAL (1,000 mg/Kg) in the following soil samples:

- DP-2, 0 to 1 foot (25,400 mg/Kg)
- DP-3, 0 to 1 foot (17,800 mg/Kg)
- DP-4, 0 to 1 foot (6,900 mg/Kg)
- DP-6, 0 to 1 foot (31,700 mg/Kg)
- DP-6, 1 to 2 feet (30,800 mg/Kg)
- DP-6, 2 to 3 feet (25,100 mg/Kg)
- DP-6, 3 to 4 feet (3,720 mg/Kg)
- DP-7, 0 to 1 foot (4,160 mg/Kg)
- DP-8, 0 to 1 foot (23,100 mg/Kg)
- DP-8, 1 to 2 feet (21,300 mg/Kg)
- DP-10, 0 to 1 foot (37,000 mg/Kg)

The delineation report was submitted to the OCD on May 23, 2017 and later revised (July 28, 2017) to include remediation for a produced water spill that occurred on June 14, 2017 (1RP-4235).

### 3.0 SPILL REMEDIATION

On July 27, 2017, OCD District 2 approved the remediation plan for 2RP-3976 and 2RP-4253 (Appendix A). On August 8 – 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO removed the gun barrel and overflow tanks. Scarborough Drilling, Inc. (SDI) mobilized an air rotary rig immediately following removal of the tanks and used a jam tube sampler to collect soil samples for chloride delineation at DP-11, as requested by OCD District 2. Soil samples were collected every 5 feet (5, 10, 15, 20 feet etc.) to approximately 30 feet bgs. PBEL analyzed the samples for chloride by EPA Method 300 and reported chloride below 600



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mg/Kg in all samples. The poly liner was removed from the remediation area. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area measuring approximately 3,978 square feet was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner. The area around the gun barrel tank (S-15) was excavated to about 5 feet bgs. Additional soil was excavated near DP-8 and near the southwest corner of the excavation (S-14) to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the north of DP-12 where the recent produced water spill (2RP-4253) had encroached.

On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where soil was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by EPA SW-846 Methods 8021B (BTEX) 8015 (TPH) including GRO, DRO and ORO and chloride by Method 300.

The Laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

- S-5, 5.0' – 5.5' (5,450 mg/Kg)
- S-6, 4.5' – 5.0' (9,780 mg/Kg)
- S-10, 1.5' – 2.0' (3,953 mg/Kg)
- S-14 1.5' – 2.0' (1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

- S-5, 2' East (3,580 mg/Kg)
- S-6, 4' North (1,310 mg/Kg)
- S-6, 2' South (18,450 mg/Kg)
- S-6, 2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

- S-13, 1.5' – 2.0' (8,210 mg/Kg)
- S-14, 1.5' – 2.0' (1,050 mg/Kg)
- S-16, 0.5' – 1.0' (3,810 mg/Kg)

Additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom (5.0' – 5.5') at S-14.

On August 14, 2017, SDI collected samples for chloride delineation at locations S-13 and S-16. Soil samples were collected every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet bgs at S-13 and to 20 feet bgs at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Approximately 805.82 tons/ cubic yards of soil was excavated and hauled to Lea Land Landfill, LLC. Clean caliche was hauled back from Lea Land for backfilling the excavation. On August 18, 2017, OCD District 2 approved backfilling the excavation which occurred between August 21 – 23, 2017. Table 2 presents the confirmation soil sample analytical data summary. Figure 3 presents the excavation and confirmation sample location map. Appendix A presents OCD correspondence. Appendix B presents the

2RP-3976 Remediation Report  
Nash Draw Tank Battery #42 Crude Oil Spill  
August 24, 2017

laboratory reports. Appendix C presents the waste manifests. Appendix D presents photographs. Appendix E presents the initial and final C-141.

## **4.0 CONCLUSIONS**

XTO performed soil remediation according to the remediation plan approved by OCD District 2, on July 27, 2017 and XTO requests no further action for 2RP-3976.

**Tables**

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)		BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
					10	50						
<b>OCD RRAL:</b>												
DP-1	0 - 1	03/14/2017	In-situ	1.8	--	--	--	<27.5	<27.5	<27.5	<27.5	17.4
DP-2	0 - 1	03/14/2017	In-situ	1,380	4.75	<b>147.75</b>	5,730	16,900	2,760	<b>25,400</b>	62.9	
	1 - 2	03/14/2017	In-situ	232.3	0.00702	0.1863	72.9	614	102	788.9	53.9	
	2 - 3	03/14/2017	In-situ	16.3	--	--	<28.7	<28.7	<28.7	<28.7	33.9	
	3 - 4	03/14/2017	In-situ	2.9	--	--	--	--	--	--	--	
	4 - 5	03/14/2017	In-situ	1.8	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	1.8	<0.00116	<0.00794	<29.1	<29.1	<29.1	<29.1	<29.1	<1.16
DP-3	0 - 1	03/14/2017	In-situ	1,236	5.23	<b>140.53</b>	5,380	10,800	1,650	<b>17,800</b>	10.5	
	1 - 2	03/14/2017	In-situ	90.2	0.0127	0.1708	<30.1	112	<30.1	112	11.6	
	2 - 3	03/14/2017	In-situ	29.2	--	--	<29.4	<29.4	<29.4	<29.4	12.4	
	3 - 4	03/14/2017	In-situ	141.3	--	--	<29.1	<29.1	<29.1	<29.1	9.45	
	4 - 5	03/14/2017	In-situ	198.3	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	13.6	--	--	--	--	--	--	--	
	6 - 7	03/14/2017	In-situ	25	--	--	--	--	--	--	--	
	7 - 8	03/14/2017	In-situ	231.2	<0.00116	<0.00794	<29.1	<29.1	<29.1	<29.1	<29.1	8.31
DP-4	0 - 1	03/14/2017	In-situ	1,250	0.807	10.86	999	5,060	844	<b>6,900</b>	43.4	
	1 - 2	03/14/2017	In-situ	118.6	0.0056	0.0056	<29.8	<29.8	<29.8	<29.8	33.9	
	2 - 3	03/14/2017	In-situ	39.4	--	--	<28.4	<28.4	<28.4	<28.4	22.1	
	3 - 4	03/14/2017	In-situ	12.5	--	--	--	--	--	--	--	
	4 - 5	03/14/2017	In-situ	26.8	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	53.5	<0.00112	<0.00786	<28.1	<28.1	<28.1	<28.1	106	
DP-5	0 - 1	03/14/2017	In-situ	2.2	--	--	<27.5	<27.5	<27.5	<27.5	12.5	

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)		BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
					10	50						
<b>OCD RRAL:</b>												
	1 - 2	03/14/2017	In-situ	3.7	--	--	--	<27.8	<27.8	<27.8	1,000	*250
<b>DP-6</b>	0 - 1	03/13/2017	In-situ	1,155	8.87	230.27	7,900	20,400	3,330	31,700	145	
	1 - 2	03/13/2017	In-situ	1,836	18.9	439.6	12,800	15,200	2,780	30,800	9.57	
	2 - 3	03/13/2017	In-situ	1,622	9.16	254.36	10,500	12,300	2,240	25,100	9.72	
	3 - 4	03/13/2017	In-situ	1,328	0.54	19.414	1,160	2,210	358	3,720	8.75	
	4 - 5	03/13/2017	In-situ	841.9	<0.00115	0.05052	95.2	363	60.2	518.4	8.86	
	5 - 6	03/13/2017	In-situ	11.5	<0.00115	<0.04945	<28.7	129	47.3	176.3	<1.16	
	6 - 7	03/13/2017	In-situ	54	<0.00114	<0.00796	<28.4	<28.4	<28.4	<28.4	<1.14	
<b>DP-7</b>	0 - 1	03/13/2017	In-situ	4.1	--	--	239	3,300	625	4,160	22.4	
	1 - 2	03/13/2017	In-situ	1.9	--	--	<29.1	78.8	<29.1	78.8	19.3	
	2 - 3	03/13/2017	In-situ	1.9	--	--	--	--	--	--	--	
	3 - 4	03/13/2017	In-situ	4.2	--	--	--	--	--	--	--	
	4 - 5	03/13/2017	In-situ	4.7	--	--	--	--	--	--	--	
	5 - 6	03/13/2017	In-situ	12.2	--	--	--	--	--	--	--	
	6 - 7	03/13/2017	In-situ	5.6	--	--	--	--	--	--	--	
	7 - 8	03/13/2017	In-situ	39.5	<0.00111	<0.00777	<27.8	<27.8	<27.8	<27.8	<27.8	137
<b>DP-8</b>	0 - 1	03/13/2017	In-situ	1,104	4.16	110.56	7,320	13,600	2,190	23,100	32.1	
	1 - 2	03/13/2017	In-situ	1,334	1.42	28.47	8,260	11,100	1,910	21,300	13.5	
	2 - 3	03/13/2017	In-situ	115.8	--	--	38	238	58	334	6.29	
	3 - 4	03/13/2017	In-situ	43.1	--	--	--	--	--	--	--	
	4 - 5	03/13/2017	In-situ	86.2	--	--	--	--	--	--	--	
	5 - 6	03/13/2017	In-situ	8.5	<0.00111	<0.00777	<27.8	<27.8	<27.8	<27.8	<27.8	<1.11

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	OCD RRAL:					Chloride (mg/Kg)	
					Benzene (mg/kg)	BTEX (mg/Kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)		TPH (mg/kg)
DP-9	0 - 1	03/13/2017	In-situ	5.6	--	--	<27.2	<27.2	<27.2	<27.2	16.0
	1 - 2	03/13/2017	In-situ	4.5	--	--	<28.1	<28.1	<28.1	<28.1	9.15
DP-10	0 - 1	03/13/2017	In-situ	116.7	1.53	49.730	10,400	22,900	3,720	37,000	7.34
	1 - 2	03/13/2017	In-situ	590.5	0.195	4.571	152	531	<144	683	7.48
	2 - 3	03/13/2017	In-situ	48.7	--	--	<29.4	<29.4	<29.4	<29.4	5.28
	3 - 4	03/13/2017	In-situ	24	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	367.4	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	12.7	--	--	--	--	--	--	--
	6 - 7	03/13/2017	In-situ	20.3	--	--	--	--	--	--	--
	7 - 8	03/13/2017	In-situ	3.4	<0.00111	<0.00777	44.5	<27.8	<27.8	44.5	174
DP-11	0 - 1	03/13/2017	In-situ	11.2	--	--	<27.8	<27.8	<27.8	<27.8	14.8
	1 - 2	03/13/2017	In-situ	6.4	--	--	<29.4	<29.4	<29.4	<29.4	162
	2 - 3	03/13/2017	In-situ	6.4	--	--	--	--	--	--	--
	3 - 4	03/13/2017	In-situ	1.8	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	4.2	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	101.3	--	--	<27.8	156	50.3	206.3	702
DP-12	0 - 1	03/13/2017	In-situ	2.5	--	--	<27.2	122	45.1	167.1	104
	1 - 2	03/13/2017	In-situ	4.7	--	--	<28.1	49.1	<28.1	49.1	145
	2 - 3	03/13/2017	In-situ	21.9	--	--	--	--	--	--	--
	3 - 4	03/13/2017	In-situ	15.2	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	7	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	4.9	--	--	--	--	--	--	--
	6 - 7	03/13/2017	In-situ	27.6	--	--	--	--	--	--	--

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
<b>OCD RRAL:</b>											
	7 - 8	03/13/2017	In-situ	103	<0.00112	<0.0079	<28.1	<28.1	<28.1	1,000	*250
										<28.1	72.7

Notes: analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8021B (BTEX) and 8015M (TPH)

Depth in inches below ground surface (bgs)

mg/kg: milligrams per kilogram equivalent to parts per million (ppm)

\*: OCD delineation limit

P: Laboratory results pending

**Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)**

**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 1 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)		BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
					10	50						
<b>OCD RRAL:</b>												
<b>S-1</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0244	<0.1708	<30.5	<30.5	<30.5	<30.5	<30.5	62.7
<b>S-2</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0241	<0.1687	<30.1	57.4	<30.1	<30.1	57.4	103
<b>S-3</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1047	<29.4	<29.4	<29.4	<29.4	<29.4	13.7
<b>S-4</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0230	<0.161	<28.7	<28.7	<28.7	<28.7	<28.7	<1.15
<b>S-5</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	0.0664	13.7464	755	3,970	720	5,450	147	
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<28.7	209	84.9	293.9	19.3	
	2	08/14/2017	Side (N)	In-situ	--	--	43.1	764	152	959.1	48.0	
	2	08/14/2017	Side (S)	In-situ	--	--	<27.2	<27.2	<27.2	<27.2	<1.09	
	*2	08/14/2017	Side (E)	Excavated	--	--	356	2,700	524	3,580	161	
	2	08/14/2017	Side (W)	In-situ	--	--	<30.1	66.2	<30.1	66.2	16.8	
<b>S-6</b>	4.5 - 5.0	08/11/2017	Bottom	Excavated	0.199	9.889	2,850	5,710	1,210	9,780	<1.14	
	12.0 - 12.5	08/14/2017	Bottom	In-situ	--	--	<28.1	200	36.5	236.5	35.2	
	2	08/11/2017	Side (N)	In-situ	<0.0244	<0.1708	<30.5	131	38.8	169.8	<1.22	
	4	08/14/2017	Side (N)	Excavated	--	--	246	906	160	1,310	30.3	
	4	08/16/2017	Side (N)	In-situ	--	--	<26.9	<26.9	<26.9	<26.9	20.2	
	8	08/14/2017	Side (N)	In-situ	--	--	<29.8	<29.8	<29.8	<29.8	20.1	
	2	08/11/2017	Side (S)	Excavated	0.388	36.718	4,770	11,400	2,280	18,450	102	
	4	08/14/2017	Side (S)	In-situ	--	--	<28.1	<28.1	<28.2	<28.1	61.5	
8	08/14/2017	Side (S)	In-situ	--	--	<27.8	<27.8	<27.8	<27.8	954		
*2	08/11/2017	Side (W)	In-situ	<0.0227	<0.1591	42.7	534	122	698.7	15.0		



**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 2 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)			BTEX (mg/Kg)			ORO (mg/Kg)			Chloride (mg/Kg)
					10	50	1,000	10	50	1,000	10	50	1,000	
<b>OCD RRAL:</b>														
	4	08/14/2017	Side (W)	In-situ	--	--	<28.7	281	48.5	329.5	21.6			
	8	08/14/2017	Side (W)	In-situ	--	--	<28.7	61.4	<28.7	61.4	18.1			
	2	08/11/2017	Side (E)	Excavated	<0.0244	0.9416	358	1,830	370	<b>2,558</b>	780			
	4	08/14/2017	Side (E)	In-situ	--	--	<26.9	<26.9	<26.9	<26.9	13.8			
	8	08/14/2017	Side (E)	In-situ	--	--	<27.2	<27.2	<27.2	<27.2	43.8			
<b>S-7</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0227	.0568	<28.4	390	76.3	466.3	152			
<b>S-8</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0227	<0.1591	<28.4	66.8	<28.4	66.8	13.7			
<b>S-9</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0230	<0.161	<28.7	<28.7	<28.7	<28.7	<1.15			
<b>S-10</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	<0.0230	2.525	586	2,900	467	<b>3,953</b>	629			
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<27.5	177	32.1	209.1	4.88			
	2	08/14/2017	Side (N)	In-situ	--	--	<29.1	<29.1	<29.1	<29.1	99.7			
	2	08/14/2017	Side (S)	In-situ	--	--	33.2	553	95.2	681.4	68.4			
	2	08/14/2017	Side (E)	In-situ	--	--	<28.7	92.9	<28.7	92.9	79.3			
	2	08/14/2017	Side (W)	In-situ	--	--	<29.1	<29.1	<29.1	<29.1	19.4			
<b>S-11</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0238	<0.1666	<29.8	42.9	<29.8	42.9	53.3			
<b>S-12</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1047	<29.4	50.4	<29.4	50.4	459			
<b>S-13</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0233	<0.1629	<29.1	114	<29.4	114	8,210			

**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 3 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	10			50			1,000			Chloride (mg/Kg)
					Benzene (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)			
<b>OCD RRAL:</b>														
	5 - 6	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	169
	10 - 11	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	290
	15 - 16	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	520
	20 - 21	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	64.3
	25 - 26	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	21.2
	30 - 31	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	--	26.1
<b>S-14</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	<0.0225	<0.1573	44.7	1,270	284	1,598.7	1,050			
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<30.9	<30.9	<30.9	<30.9	247			
	2	08/14/2017	Side (N)	In-situ	--	--	<28.1	<28.1	<28.1	<28.1	105			
	2	08/14/2017	Side (S)	In-situ	--	--	<31.2	<31.2	<31.2	<31.2	192			
	2	08/14/2017	Side (E)	In-situ	--	--	<30.5	<30.5	<30.5	<30.5	139			
	2	08/14/2017	Side (W)	In-situ	--	--	<29.1	<29.1	<29.1	<29.1	412			
<b>S-15</b>	4.5 - 5.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1647	<29.4	<29.4	<29.4	<29.4	34.5			
	2	08/11/2017	Side (North)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	14.2			
	2	08/11/2017	Side (South)	In-situ	<0.0238	<0.1666	<29.8	<29.8	<29.8	<29.8	5.11			
	2	08/11/2017	Side (West)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	112			
	2	08/11/2017	Side (East)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	11.4			
	0.5 - 1.0	08/11/2017	Bottom	In-situ	<0.0213	<0.1278	<26.6	<26.6	<26.6	<26.6	3,810			
<b>S-16</b>	5 - 6	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	70.7			
	10 - 11	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	95.2			
	15 - 16	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--			
					--	--	--	--	--	--	413			

Table 2  
 2RP-3976 and 2RP-4253  
 Remediation Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Spills  
 UL E (SW/4, NW/4), S-18, T-23 South, R-30 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Page 4 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
<b>OCD RRAL:</b>											
	20 - 21	08/14/2017	Bottom	In-situ	10	50	--	--	--	1,000	**600
					--	--	--	--	--	--	63.8

Notes: analysis by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 Method 8021B (BTEX), Method 8015M (TPH) and Method 300 (chloride)

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

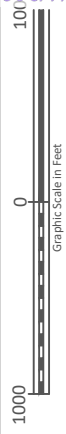
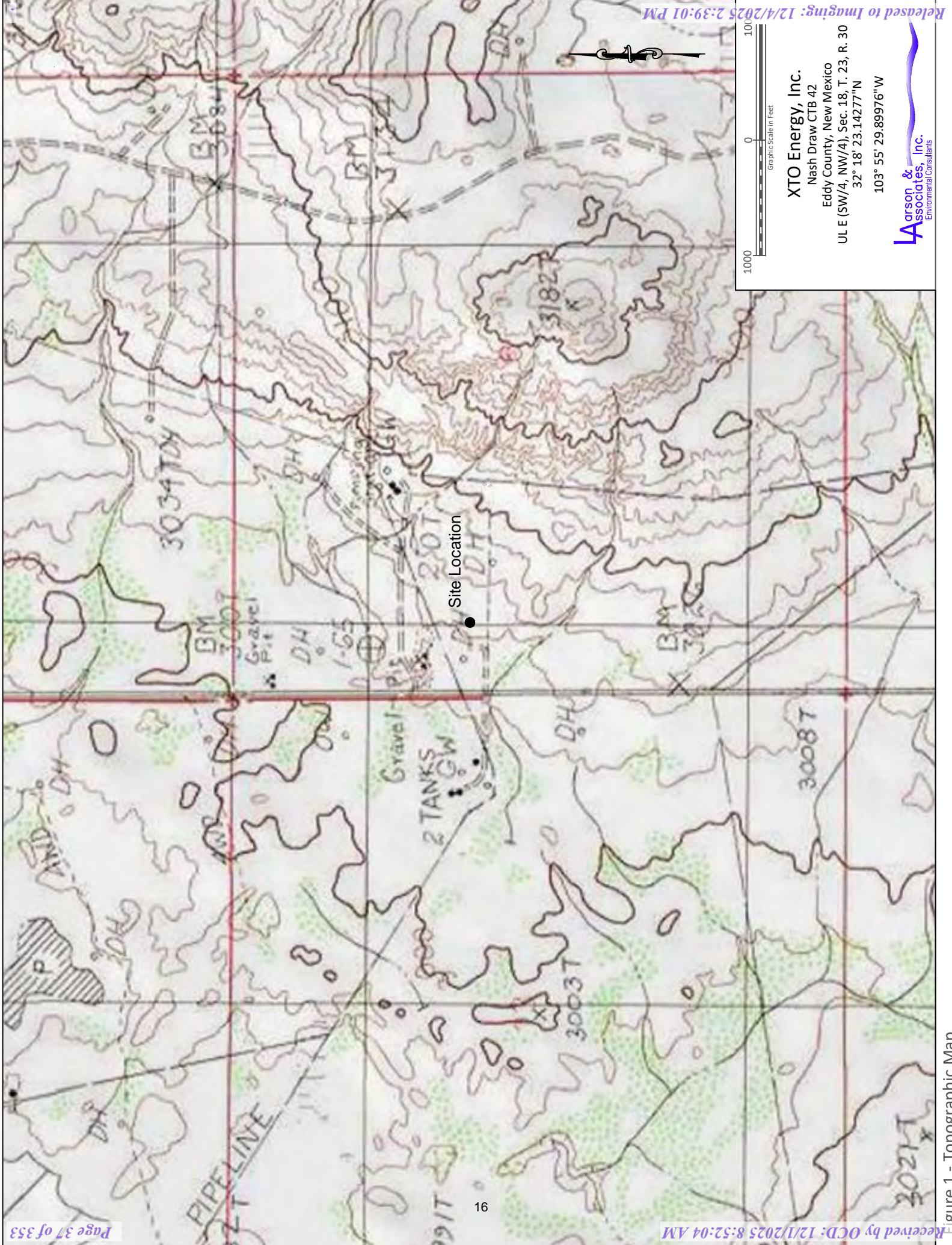
\* East side of excavation (S-5) joined to west side of adjoining excavation (S-6)

\*\* : OCD delineation limit

P Laboratory analysis pending

**Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)**

**Figures**



**XTO Energy, Inc.**  
 Nash Draw CTB 42  
 Eddy County, New Mexico  
 U1 E (SW/4, NW/4), Sec. 18, T. 23, R. 30  
 32° 18' 23.14277"N  
 103° 55' 29.89976"W



Figure 1 - Topographic Map



Released to Imaging: 12/4/2025 2:39:01 PM

30 0 30  
Graphic Scale in Feet

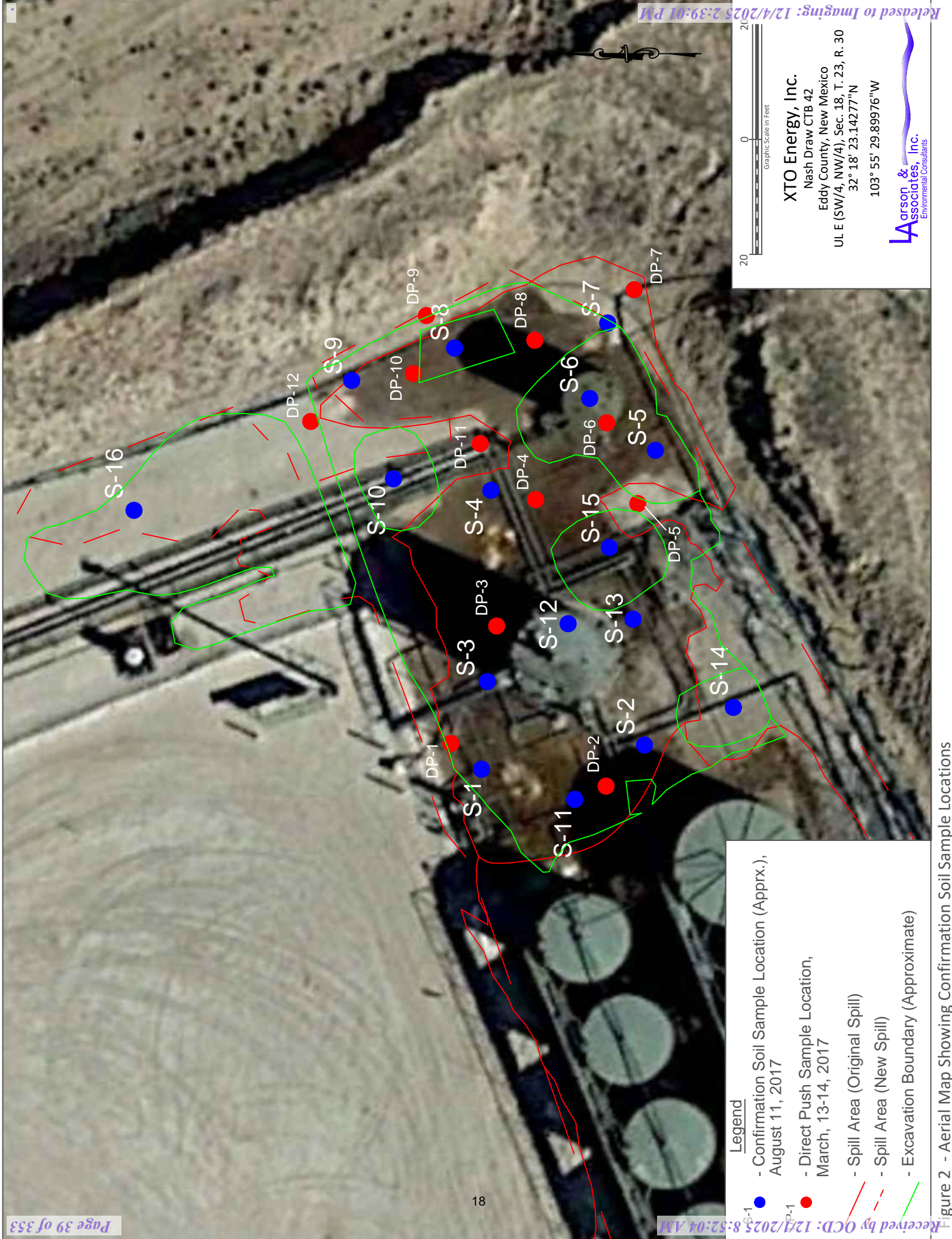
**XTO Energy, Inc.**  
Nash Draw CTB 42  
Eddy County, New Mexico  
UL E (SW/4, NW/4), Sec. 18, T. 23, R. 30  
32° 18' 23.14277"N  
103° 55' 29.89976"W

**Larson & Associates, Inc.**  
Environmental Consultants

**Legend**

- - Direct Push Sample Location, March, 13-14, 2017
- - Spill Area

Figure 2 - Site Map Showing Direct Push Sample Locations



- Legend**
- - Confirmation Soil Sample Location (Apprx.), August 11, 2017
  - - Direct Push Sample Location, March, 13-14, 2017
  - - Spill Area (Original Spill)
  - - - - Spill Area (New Spill)
  - - Excavation Boundary (Approximate)

Graphic Scale in Feet  
0 20

**XTO Energy, Inc.**  
Nash Draw CTB 42  
Eddy County, New Mexico  
UL E (SW/4, NW/4), Sec. 18, T. 23, R. 30  
32° 18' 23.14277"N  
103° 55' 29.89976"W

**Larson & Associates, Inc.**  
Environmental Consultants

Figure 2 - Aerial Map Showing Confirmation Soil Sample Locations

**Appendix A**

**OCD Approval**



**From:** [Mark Larson](#)  
**To:** [Sarah Johnson](#)  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017  
**Date:** Tuesday, August 22, 2017 8:03:50 AM  
**Attachments:** [Location Drawing for Berm.pdf](#)

---

Sarah,

Good morning! Here's the approval for backfilling the excavations. The attached drawing shows the location for the new berm on the north side of the excavation. Please have SDR build a berm from caliche to the same height as the existing berm on the north side of the tanks. Have SDR tie the west end of the berm into the berm on the north side of the tanks and on the east end where the berm turns north (east of DP-1). Please call me if you have questions.

Mark

---

**From:** Bratcher, Mike, EMNRD [mailto:mike.bratcher@state.nm.us]  
**Sent:** Friday, August 18, 2017 4:39 PM  
**To:** Mark Larson; Weaver, Crystal, EMNRD; 'Groves, Amber'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

RE: **2RP-3976 & 2RP-4235**

-

Mark,

Based on data provided, you are approved to commence backfill operations. Sorry for a perceived delayed response, but if we actually worked everything in the order received, it would be at least a few weeks before you got a response. We do appreciate the thorough job and uncomplicated reporting you provide, along with XTO's willingness and cooperation in maintaining an environmentally solid operation. I do understand the urgency for this particular project and apologize for any inconvenience.

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Friday, August 18, 2017 8:27 AM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; 'Groves, Amber' <agroves@slo.state.nm.us>

**Cc:** 'McMinn, Dudley' <Dudley\_McMinn@xtoenergy.com>; 'Williams, Luke' <Luke\_Williams@xtoenergy.com>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Mike,

This summary is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of XTO Energy Inc. (XTO) to present the delineation and remediation of two (2) spills (2RP-3976 and 2RP-4253) at the Nash Draw CTB #42. LAI requests approval to backfill the excavations so that XTO may install a spray-in liner and resume production. The final reports for 2RP-3976 and 2RP-4253 will be submitted after the excavations area backfilled along with the final C-141s.

On August 8 - 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO had the gun barrel and overflow tanks removed from the remediation area. Immediately following removal of the tanks, Scarborough Drilling mobilized an air rotary rig to DP-11 for the purpose of delineating chloride as requested by OCD. Soil samples were collected with a jam tube sampler at 10, 15, 20, 25 and 30 feet below ground surface (bgs) and were analyzed for chloride by EPA Method 300. Chloride was below 250 mg/Kg in all samples concluding successful vertical delineation. The ploy liner was removed from the remediation area and disposed at Lea Land Landfill. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Additional soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner and from areas beneath the tanks and where staining was observed beneath the liner. The area around DP-8 was excavated to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the area north of DP-12 where the recent produced water spill (2RP-4253) had encroached. On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by Methods SW-846=8021B, SW-846-8015M and 300, respectively.

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

- S-5, 5.0' – 5.5' (5,450 mg/Kg)
- S-6, 4.5' – 5.0' (9,780 mg/Kg)
- S-10, 1.5' – 2.0' (3,953 mg/Kg)
- S-14, 1.5' – 2.0'(1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

- S-5, 2' East (3,580 mg/Kg)
- S-6, 4' North (1,310 mg/Kg)
- S-6, 2' South (18,450 mg/Kg)
- S-6,2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

S-13, 1.5' – 2.0' (8,210 mg/Kg)  
S-14, 1.5' – 2.0' (1,050 mg/Kg)  
S-16, 0.5' – 1.0' (3,810 mg/Kg)

Between August 14 – 16, 2017, additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom sample (5.0' – 5.5') at S-14. Scarborough Drilling collected samples every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet at S-13 and 20 feet at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Please refer to Table 2. The excavation and sample location drawing is presented as Figure 2. Photographs are attached. Approximately 525.5 tons/cubic yards of contaminated soil was hauled to Le Land Landfill, LLC. Clean caliche was hauled back from Le Land for backfilling the excavations. LAI, on behalf of XTO, requests OCD approval to backfill the excavations so that XTO may begin installing the spray-in liner and resume production. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



*“Serving the Permian Basin Since 2000”*

---

**From:** Mark Larson  
**Sent:** Wednesday, August 09, 2017 7:01 PM  
**To:** 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,  
The tanks (gun barrel and overflow) were emptied today and will be removed on Thursday morning to allow access for equipment to perform remediation. We plan to collect additional samples tomorrow from SB-11 for vertical delineation.  
Mark

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Monday, August 07, 2017 9:27 AM  
**To:** Mark Larson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Good morning,

Thank you Mark. I may try to make it out to this one if Amber can not.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Sunday, August 6, 2017 6:58 PM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Amber,  
This is to inform you that remediation of 2RP-3976 and 2RO-4253 will commence on Monday, August 9, 2017. Please contact Dudley McMinn with XTO Energy, Inc., at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
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507 N. Marienfeld St., Suite 205  
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---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 27, 2017 5:21 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'McMinn, Dudley'; 'Williams, Luke'  
**Cc:** 'Tucker, Shelly'; Groves, Amber  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

First off thank you Mark for your answers to my questions.

I was checking a few clerical details and I wanted to bring a few more things to all of your attention. On the first spill, given case number 2RP-3976, there was no API number provided on the initial C-141 and since it was mentioned that the release was involving a battery our administrative personnel entered this in our system and gave it a facility number instead of relating it to the API for this location. However, on the second spill, given case number 2RP-4253, an API number was provided on the initial C-141 so our administrative personnel entered this one into our system under the API number. So now we have records for two spills recorded in two different places in our system that in fact actually happened at this same site. Please try to remain consistent on what you go with for C-141 documentation and of course for any documentation.

Also I show in my records that this site is on State Land Office administered service but when I look back in the well file history for this site I see documents being provided to the BLM for this facility. Since I have this site as SLO land I am adding Amber Groves, from the State Land Office, to this email chain and I am thus requesting that someone please help to clarify this matter. **So Shelly or Amber can you all please clear up who is the surface owner for this location?**

Finally, getting back to Mark's answers to my questions.

OCD accepts your proposal for remediation of the above mentioned releases (2RP-3976 and 2RP-4235) with the following conditions:

- Within the answers provided below it is stated that Larson Associates Inc. on behalf of XTO will be submitting samples for laboratory testing of *“total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples*

*will be collected to delineate chloride to 600 mg/Kg.”* However, OCD notes that testing for BTEX was not mentioned in either of these statements. OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.

- Since the second release spanned beyond the extent of the first release it is OCD's understanding that all impacted areas will be delineated during remedial activities. Excavation depths may vary based on new analytical data.
- Again as mentioned above in bullet point 1, because your response statement below, to my sampling request for areas where there are holes in the liner, does not include the mentioning of sampling for BTEX I want to make it clear that OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- OCD concurs with the answer provided below regarding sampling point DP-11.

Please advise once remedial activities have been scheduled. If this is Federal surface then it will require like approval from BLM, if this is State Land Office surface than it will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## **Crystal Weaver**

Environmental Specialist

OCD – Artesia District II

811 S. 1<sup>st</sup> Street

Artesia, NM 88210

Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Friday, July 21, 2017 7:24 AM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The following is submitted on behalf of XTO Energy, Inc. (XTO) in response to your questions below:

**Question:** All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?

**Response:** *it is my opinion that the depth of excavation will be similar to what is proposed since the initial spill was mostly crude oil with an small amount of produced water and the recent spill is mostly produced water with a small amount of crude oil. Soil will be excavated until total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg. The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

**Response:** *The area east of the tank battery covered by the initial spill is unlined. The recent spill east of the tank battery occurred the lined area where holes are shown in the liner. Soil samples will be collected from the lined area covered by the spill where holes are observed. The soil samples will be analyzed for TPH as determined by EPA SW-846 Method 8015 for GR, DRO and ORO and chloride by Method 300. Soil will be excavated until TPH in bottom sample and sidewall samples where the excavation exceeds 2 feet is below the RRAL (1,000 mg/Kg). Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

Response: *A backhoe may be used to confirmed the chloride concentration in soil at DP-11, 5 – 6 feet. The sample will be analyzed by Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: also just noticed one last thing, the label on your Table 1 says that the table is for 2RP-1486, is that a typo?

Response: *Good catch! I used an earlier table as a template and didn't change the remediation permit number. Please find the corrected table attached.*

Question: also just noticed one last thing, the remediation permit number you refer to for the recent spill (2RP-4235), is that a typo?

Response: *This remediation permit (2RP-4235) is for a release at the Devon Energy Production Company Cotton Draw Unit 84! It appears the 3 and 5 were juxtaposed and should be 2RP-4253.*

Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Mark J. Larson, P.G.  
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Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 13, 2017 2:07 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Tucker, Shelly'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Thank you for the submission of this most recent plan and for the submission of the prior one as well.

OCD is fine with the idea of remediating both spills at the same time while you have equipment and workers mobilized, etc. and we are fine with both releases being written about in the same work plan and closure report etc., however, the spills will still be treated as separate cases as far as each will be referred to by its individual tracking number and DOR, and each will have to be closed out on our end as individual incidents. So each will need final C-141s.

With that being said, I have looked things over and I have a few questions for you all:

- All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?
- Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.
- Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

I look forward to receiving a response to my questions/requests.

If you have any need for clarification or have any questions of your own please contact myself or Mike Bratcher here at the District II Office.

Thank you,

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
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---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Monday, July 3, 2017 4:06 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Tucker, Shelly' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** Re: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Mike/Crystal/Shelly,  
Larson & Associates, Inc. (LAI) submits the delineation report and remediation plan for a crude oil spill at the XTO Energy, Inc. (XTO) Nash Draw 42 CTB. Since submitting the plan on May 23, 2017, XTO reported another spill at the facility on June 14, 2017, prior to receiving OCD approval of the remediation plan for the crude oil spill. XTO would like the OCD to consider allowing remediation of both spills under the remediation plan presented herein. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/aac0757d-4e60-4e7d-b88c-f8ac9693cab9>

Mark J. Larson, P.G.  
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[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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**From:** Mark Larson  
**Sent:** Tuesday, May 23, 2017 8:24 AM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** Re: XTO CTB 42 Revised Delineation Report

Mike/Crystal,

Please use the link below to download the revised delineation report for 2RP-3976. The report was revised to include additional photographs for exposing the liner inside the firewall. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/af3a731c-13d6-4830-8201-6944cbd5f9aa>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
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[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

**Appendix B**  
**Laboratory Reports**

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



## Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Location: New Mexico  
Lab Order Number: 7H12002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/13/17

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 1.5-2'	7H12002-01	Soil	08/11/17 14:45	08-11-2017 20:00
S-2 1.5-2'	7H12002-02	Soil	08/11/17 14:46	08-11-2017 20:00
S-3 1.5-2'	7H12002-03	Soil	08/11/17 14:46	08-11-2017 20:00
S-4 1.5-2'	7H12002-04	Soil	08/11/17 14:50	08-11-2017 20:00
S-5 1.5-2'	7H12002-05	Soil	08/11/17 15:22	08-11-2017 20:00
S-6 4.5-5'	7H12002-06	Soil	08/11/17 15:25	08-11-2017 20:00
S-6 N-2'	7H12002-07	Soil	08/11/17 15:40	08-11-2017 20:00
S-6 S-2'	7H12002-08	Soil	08/11/17 15:44	08-11-2017 20:00
S-6 W-2'	7H12002-09	Soil	08/11/17 15:46	08-11-2017 20:00
S-6 E-2'	7H12002-10	Soil	08/11/17 15:47	08-11-2017 20:00
S-7 1.5-2'	7H12002-11	Soil	08/11/17 14:54	08-11-2017 20:00
S-8 1.5-2'	7H12002-12	Soil	08/11/17 14:57	08-11-2017 20:00
S-9 1.5-2'	7H12002-13	Soil	08/11/17 15:01	08-11-2017 20:00
S-10 1.5-2'	7H12002-14	Soil	08/11/17 15:05	08-11-2017 20:00
S-11 1.5-2'	7H12002-15	Soil	08/11/17 15:08	08-11-2017 20:00
S-12 1.5-2'	7H12002-16	Soil	08/11/17 15:10	08-11-2017 20:00
S-13 1.5-2'	7H12002-17	Soil	08/11/17 15:11	08-11-2017 20:00
S-14 1.5-2'	7H12002-18	Soil	08/11/17 15:13	08-11-2017 20:00
S-15 4.5-5'	7H12002-19	Soil	08/11/17 15:18	08-11-2017 20:00
S-15 N 2'	7H12002-20	Soil	08/11/17 15:36	08-11-2017 20:00
S-15 S 2'	7H12002-21	Soil	08/11/17 15:34	08-11-2017 20:00
S-15 W-2'	7H12002-22	Soil	08/11/17 15:38	08-11-2017 20:00
S-15 E 2'	7H12002-23	Soil	08/11/17 15:39	08-11-2017 20:00
S-16 0.5-1'	7H12002-24	Soil	08/11/17 15:27	08-11-2017 20:00

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-1 1.5-2'**  
**7H12002-01 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		45.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		104 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	30.5	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>18.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		110 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		138 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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.

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-2 1.5-2'**  
**7H12002-02 (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	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0482	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0482	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.7 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		48.8 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	139	30.1	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	17.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	57.4	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>57.4</b>	30.1	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-3 1.5-2'**  
**7H12002-03 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		37.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.4	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		108 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		136 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-4 1.5-2'**  
**7H12002-04 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		41.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.7	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	13.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		135 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

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**S-5 1.5-2'**  
**7H12002-05 (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**

<b>Benzene</b>	<b>0.0664</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>2.25</b>	0.0444	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>2.35</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>5.80</b>	0.0444	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>3.28</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		88.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		35.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	27.8	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>10.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>755</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>3970</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>720</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		114 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		125 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>5450</b>	139	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

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Larson & Associates, Inc.  
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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 4.5-5'**  
**7H12002-06 (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**

<b>Benzene</b>	<b>0.199</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>2.52</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>1.88</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>4.23</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>1.06</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		35.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		91.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>53.1</b>	28.4	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>2850</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>5710</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>1210</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		123 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>9780</b>	142	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

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**S-6 N-2'**  
**7H12002-07 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.9 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	30.5	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	18.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	131	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	38.8	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		130 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>170</b>	30.5	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

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**S-6 S-2'**  
**7H12002-08 (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**

<b>Benzene</b>	<b>0.338</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>7.71</b>	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>4.30</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>16.1</b>	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>8.27</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		44.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		97.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.1	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>11.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>4770</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>11400</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>2280</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		103 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		124 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>18400</b>	140	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

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**S-6 W-2'**  
**7H12002-09 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.0959</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0570</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		47.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		94.8 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>42.7</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>534</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>122</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		121 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		145 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>699</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

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**S-6 E-2'**  
**7H12002-10 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>0.0707</b>	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>0.0959</b>	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.582</b>	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.193</b>	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		66.7 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		91.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>780</b>	30.5	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>18.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>358</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>1830</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>370</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		111 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		128 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>2560</b>	152	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-7 1.5-2'**  
**7H12002-11 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0568</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		47.7 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		98.8 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>390</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>76.3</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>467</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-8 1.5-2'**  
**7H12002-12 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		56.8 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	66.8	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		106 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>66.8</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-9 1.5-2'**  
**7H12002-13 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		52.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		100 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.7	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	13.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-10 1.5-2'**  
**7H12002-14 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	<b>0.293</b>	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	<b>1.54</b>	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	<b>0.692</b>	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		38.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>629</b>	28.7	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	<b>13.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	<b>586</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	<b>2900</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	<b>467</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		115 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>3950</b>	144	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-11 1.5-2'**  
**7H12002-15 (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	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0476	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0476	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		49.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		99.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.8	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	16.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	42.9	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		124 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>42.9</b>	29.8	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-12 1.5-2'**  
**7H12002-16 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		50.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		100 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	459	29.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	50.4	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		151 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>50.4</b>	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-13 1.5-2'**  
**7H12002-17 (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	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0465	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0465	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		54.4 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		96.3 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	8210	58.1	mg/kg dry	50	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	114	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		140 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>114</b>	29.1	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 1.5-2'**  
**7H12002-18 (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	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		37.5 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	1050	28.1	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	11.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	44.7	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
>C12-C28	1270	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
>C28-C35	284	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		56.5 %	70-130		P7H1204	08/12/17	08/13/17	TPH 8015M	S-GC
Surrogate: o-Terphenyl		72.3 %	70-130		P7H1204	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	1600	28.1	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 4.5-5'**  
**7H12002-19 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		46.5 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		97.5 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		86.9 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 N 2'**  
**7H12002-20 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		50.3 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	79.0	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		145 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 S 2'**  
**7H12002-21 (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	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0476	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0476	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.8	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	16.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		80.7 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		96.0 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 W-2'**  
**7H12002-22 (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	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		44.7 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		93.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		127 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 E 2'**  
**7H12002-23 (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	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.2 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		102 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		150 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**S-16 0.5-1'**  
**7H12002-24 (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	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0426	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0426	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		43.8 %	75-125		P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>3810</b>	26.6	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	<b>6.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		75.8 %	70-130		P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		89.9 %	70-130		P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1205 - General Preparation (GC)**

**Blank (P7H1205-BLK1)**

Prepared & Analyzed: 08/12/17

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	0.00132	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0604		"	0.0600		101	75-125			
Surrogate: 4-Bromofluorobenzene	0.0350		"	0.0600		58.4	75-125			S-GC

**LCS (P7H1205-BS1)**

Prepared & Analyzed: 08/12/17

Benzene	0.115	0.00100	mg/kg wet	0.100		115	70-130			
Toluene	0.112	0.00200	"	0.100		112	70-130			
Ethylbenzene	0.110	0.00100	"	0.100		110	70-130			
Xylene (p/m)	0.197	0.00200	"				70-130			
Xylene (o)	0.0951	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0708		"	0.0600		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0600		58.1	75-125			S-GC

**LCS Dup (P7H1205-BSD1)**

Prepared & Analyzed: 08/12/17

Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130	3.16	20	
Toluene	0.118	0.00200	"	0.100		118	70-130	5.00	20	
Ethylbenzene	0.106	0.00100	"	0.100		106	70-130	4.16	20	
Xylene (p/m)	0.200	0.00200	"				70-130		20	
Xylene (o)	0.102	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0687		"	0.0600		114	75-125			
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0600		60.2	75-125			S-GC

**Matrix Spike (P7H1205-MS1)**

Source: 7H12002-20

Prepared: 08/12/17 Analyzed: 08/13/17

Benzene	0.190	0.0227	mg/kg dry	0.227	ND	83.8	80-120			
Toluene	0.210	0.0455	"	0.227	ND	92.3	80-120			
Ethylbenzene	0.167	0.0227	"	0.227	ND	73.4	80-120			QM-07
Xylene (p/m)	0.370	0.0455	"		ND		80-120			
Xylene (o)	0.130	0.0227	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0325		"	0.0682		47.6	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0719		"	0.0682		105	75-125			

DRAFT REPORT

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1205 - General Preparation (GC)**

<b>Matrix Spike Dup (P7H1205-MSD1)</b>	<b>Source: 7H12002-20</b>		Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	0.213	0.0227	mg/kg dry	0.227	ND	93.9	80-120	11.4	20	
Toluene	0.230	0.0455	"	0.227	ND	101	80-120	9.20	20	
Ethylbenzene	0.206	0.0227	"	0.227	ND	90.5	80-120	20.9	20	QM-07
Xylene (p/m)	0.467	0.0455	"		ND		80-120		20	
Xylene (o)	0.168	0.0227	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0740		"	0.0682		108	75-125			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0682		60.4	75-125			S-GC

**Batch P7H1206 - General Preparation (GC)**

<b>Blank (P7H1206-BLK1)</b>			Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0564		"	0.0600		94.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0600		59.0	75-125			S-GC

**LCS (P7H1206-BS1)**

			Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	0.118	0.00100	mg/kg wet	0.100		118	70-130			
Toluene	0.119	0.00200	"	0.100		119	70-130			
Ethylbenzene	0.114	0.00100	"	0.100		114	70-130			
Xylene (p/m)	0.199	0.00200	"				70-130			
Xylene (o)	0.0979	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0766		"	0.0600		128	75-125			S-GC1
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0600		70.8	75-125			S-GC

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch P7H1206 - General Preparation (GC)**

<b>LCS Dup (P7H1206-BSD1)</b>		Prepared: 08/12/17 Analyzed: 08/13/17								
Benzene	0.0975	0.00100	mg/kg wet	0.100		97.5	70-130	19.2	20	
Toluene	0.0960	0.00200	"	0.100		96.0	70-130	21.0	20	R2
Ethylbenzene	0.0933	0.00100	"	0.100		93.3	70-130	20.1	20	R2
Xylene (p/m)	0.165	0.00200	"				70-130		20	
Xylene (o)	0.0816	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0603		"	0.0600		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.0331		"	0.0600		55.2	75-125			S-GC

<b>Matrix Spike (P7H1206-MS1)</b>		Source: 7H12002-24		Prepared: 08/12/17 Analyzed: 08/13/17						
Benzene	0.244	0.0213	mg/kg dry	0.213	ND	115	80-120			
Toluene	0.236	0.0426	"	0.213	ND	111	80-120			
Ethylbenzene	0.199	0.0213	"	0.213	ND	93.4	80-120			
Xylene (p/m)	0.435	0.0426	"		ND		80-120			
Xylene (o)	0.194	0.0213	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0663		"	0.0638		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0274		"	0.0638		42.9	75-125			S-GC

<b>Matrix Spike Dup (P7H1206-MSD1)</b>		Source: 7H12002-24		Prepared: 08/12/17 Analyzed: 08/13/17						
Benzene	0.185	0.0213	mg/kg dry	0.213	ND	87.1	80-120	27.4	20	R3
Toluene	0.197	0.0426	"	0.213	ND	92.4	80-120	18.3	20	
Ethylbenzene	0.189	0.0213	"	0.213	ND	88.8	80-120	5.05	20	
Xylene (p/m)	0.430	0.0426	"		ND		80-120		20	
Xylene (o)	0.151	0.0213	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0624		"	0.0638		97.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.0244		"	0.0638		38.2	75-125			S-GC

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1215 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1215-BLK1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1215-BS1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	424	1.00	mg/kg wet	400		106	80-120			
<b>LCS Dup (P7H1215-BSD1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	422	1.00	mg/kg wet	400		105	80-120	0.598	20	
<b>Duplicate (P7H1215-DUP1)</b>										
Source: 7H12002-01 Prepared & Analyzed: 08/12/17										
Chloride	ND	30.5	mg/kg dry		19.5				20	
<b>Duplicate (P7H1215-DUP2)</b>										
Source: 7H12002-11 Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	ND	28.4	mg/kg dry		ND				20	
<b>Matrix Spike (P7H1215-MS1)</b>										
Source: 7H12002-01 Prepared & Analyzed: 08/12/17										
Chloride	2450	30.5	mg/kg dry	2440	19.5	99.8	80-120			

**Batch P7H1216 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1216-BLK1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1216-BS1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	432	1.00	mg/kg wet	400		108	80-120			
<b>LCS Dup (P7H1216-BSD1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	420	1.00	mg/kg wet	400		105	80-120	2.85	20	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch P7H1216 - \*\*\* DEFAULT PREP \*\*\***

<b>Duplicate (P7H1216-DUP1)</b>		<b>Source: 7H12002-21</b>			Prepared: 08/12/17 Analyzed: 08/13/17					
Chloride	ND	29.8	mg/kg dry		ND				20	

<b>Duplicate (P7H1216-DUP2)</b>		<b>Source: 7H09006-08</b>			Prepared: 08/12/17 Analyzed: 08/13/17					
Chloride	7310	29.1	mg/kg dry		7550			3.15	20	

<b>Matrix Spike (P7H1216-MS1)</b>		<b>Source: 7H12002-21</b>			Prepared: 08/12/17 Analyzed: 08/13/17					
Chloride	2170	29.8	mg/kg dry	2380	ND	91.3	80-120			

**Batch P7H1307 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1307-BLK1)</b>		Prepared & Analyzed: 08/13/17								
% Moisture	19.0	0.1	%							

<b>Duplicate (P7H1307-DUP1)</b>		<b>Source: 7H12002-01</b>			Prepared & Analyzed: 08/13/17					
% Moisture	ND	0.1	%		18.0			200	20	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1203 - TX 1005**

**Blank (P7H1203-BLK1)**

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	67.0		"	50.0		134	70-130			S-GC

**LCS (P7H1203-BS1)**

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	932	25.0	mg/kg wet	1000		93.2	75-125			
>C12-C28	941	25.0	"	1000		94.1	75-125			
Surrogate: 1-Chlorooctane	124		"	100		124	70-130			
Surrogate: o-Terphenyl	60.4		"	50.0		121	70-130			

**LCS Dup (P7H1203-BSD1)**

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	941	25.0	mg/kg wet	1000		94.1	75-125	1.01	20	
>C12-C28	952	25.0	"	1000		95.2	75-125	1.17	20	
Surrogate: 1-Chlorooctane	125		"	100		125	70-130			
Surrogate: o-Terphenyl	61.1		"	50.0		122	70-130			

**Matrix Spike (P7H1203-MS1)**

Source: 7H12002-24

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	967	26.6	mg/kg dry	1060	ND	90.9	75-125			
>C12-C28	990	26.6	"	1060	11.6	92.0	75-125			
Surrogate: 1-Chlorooctane	127		"	106		120	70-130			
Surrogate: o-Terphenyl	62.9		"	53.2		118	70-130			

**Matrix Spike Dup (P7H1203-MSD1)**

Source: 7H12002-24

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	984	26.6	mg/kg dry	1060	ND	92.5	75-125	1.75	20	
>C12-C28	1020	26.6	"	1060	11.6	94.6	75-125	2.84	20	
Surrogate: 1-Chlorooctane	132		"	106		124	70-130			
Surrogate: o-Terphenyl	64.3		"	53.2		121	70-130			

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1204 - TX 1005**

**Blank (P7H1204-BLK1)**

Prepared & Analyzed: 08/12/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	68.6		"	50.0		137	70-130			S-GC

**LCS (P7H1204-BS1)**

Prepared & Analyzed: 08/12/17

C6-C12	861	25.0	mg/kg wet	1000		86.1	75-125			
>C12-C28	904	25.0	"	1000		90.4	75-125			
Surrogate: 1-Chlorooctane	129		"	100		129	70-130			
Surrogate: o-Terphenyl	57.0		"	50.0		114	70-130			

**LCS Dup (P7H1204-BSD1)**

Prepared & Analyzed: 08/12/17

C6-C12	897	25.0	mg/kg wet	1000		89.7	75-125	4.10	20	
>C12-C28	929	25.0	"	1000		92.9	75-125	2.83	20	
Surrogate: 1-Chlorooctane	123		"	100		123	70-130			
Surrogate: o-Terphenyl	58.9		"	50.0		118	70-130			

**Matrix Spike (P7H1204-MS1)**

Source: 7H12002-20

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	1070	28.4	mg/kg dry	1140	ND	93.8	75-125			
>C12-C28	1090	28.4	"	1140	ND	95.8	75-125			
Surrogate: 1-Chlorooctane	139		"	114		122	70-130			
Surrogate: o-Terphenyl	68.9		"	56.8		121	70-130			

**Matrix Spike Dup (P7H1204-MSD1)**

Source: 7H12002-20

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	1040	28.4	mg/kg dry	1140	ND	91.7	75-125	2.28	20	
>C12-C28	1060	28.4	"	1140	ND	93.2	75-125	2.67	20	
Surrogate: 1-Chlorooctane	136		"	114		120	70-130			
Surrogate: o-Terphenyl	66.9		"	56.8		118	70-130			

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC1 Surrogate recovery outside of control limits. A second analysis confirmed the original results..
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- R3 The RPD exceeded the acceptance limit due to sample matrix effects.
- R2 The RPD exceeded the acceptance limit.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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:

8/13/2017

Brent Barron, Laboratory Director/Technical Director

DRAFT REPORT

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Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

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If you have received this material in error, please notify us immediately at 432-686-7235.

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DRAFT REPORT

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1400 Rankin HWY Midland, TX 79701 432-686-7235  
66



507 N. Marientfield, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 8-11-17  
PO #:   
PROJECT LOCATION OR NAME:   
LAI PROJECT #: 17-0124-01  
COLLECTOR:   
LAB WORK ORDER #: 7112-001  
PAGE 1 OF 2

CHAIN-OF-CUSTODY

TRRP report?  Yes  No

TIME ZONE: Time zone/State:

Maintain in NH

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Field Sample I.D.

Lab #

Date

Time

Matrix

# of Containers

PRESERVATION  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE  
UNPRESERVED

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015  ORO
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8081 PESTICIDES  8151 HERBICIDES
  - 8082 PCBs
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  TCLP - METALS (RCRA)  Semi-VOC
  - TOTAL METALS (RCRA)  D.W. 200.8  TCLP
  - LEAD - TOTAL  FLASHPOINT
  - RCI  TOX  % MOISTURE
  - TDS  TSS
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PECTHORATE
  - CHLORIDE  ANIONS  ALKALINITY
  - M300

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION	ANALYSES	TURN AROUND TIME	LABORATORY USE ONLY
S-1 1.5-2	1	8-11-17	14:45	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVING TEMP: 2.0 THERM #: NCFEL
S-2 1.5-2	2	8-11-17	14:46	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-3 1.5-2	3	8-11-17	14:48	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-4 1.5-2	4	8-11-17	14:50	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-5 1.5-2	5	8-11-17	15:22	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-6 4.5-5	6	8-11-17	15:25	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-6 N-2	7	8-11-17	15:30	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-6 S-2	8	8-11-17	15:34	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-6 W-2	9	8-11-17	15:36	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-6 E-2	10	8-11-17	15:42	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-7 1.5-2	11	8-11-17	14:54	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-8 1.5-2	12	8-11-17	14:57	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-9 1.5-2	13	8-11-17	15:01	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-10 1.5-2	14	8-11-17	15:05	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
S-11 1.5-2	15	8-11-17	15:08	S	1	✓	✓	1 DAY <input checked="" type="checkbox"/>	RECEIVED BY: (Signature)
TOTAL									

PBEL

RELINQUISHED BY: (Signature)  
RELINQUISHED BY: (Signature)  
RELINQUISHED BY: (Signature)

DATE/TIME: 8-11-17 8:00pm

RECEIVED BY: (Signature)

TURN AROUND TIME  
NORMAL   
1 DAY   
2 DAY   
OTHER

LABORATORY USE ONLY:  
RECEIVING TEMP: 2.0 THERM #: NCFEL  
CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL #   
 HAND DELIVERED

DATE/TIME: 8/11/17 8:00pm  
RECEIVED BY: (Signature)

OTHER   
Rush send by



**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 8-11-17  
PO #: 17-0124-01  
PROJECT LOCATION OR NAME:  
LAI PROJECT #:  
COLLECTOR:  
LAB WORK ORDER #: 7H1200  
PAGE 2 OF 2

CHAIN-OF-CUSTODY

TRRP report?  Yes  No  
TIME ZONE: \_\_\_\_\_  
Time zone/State: \_\_\_\_\_  
M W T W T W M

Field Sample I.D. \_\_\_\_\_

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

# of Containers  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE  
UNPRESERVED

**ANALYSES**  
BTEX  MTBE   
TRPH 418.1  TPH 1005  TPH 1006   
GASOLINE MOD 8015  DIESEL - MOD 8015   
VOC 8200  SVOC 8270  PAH 8270  HOLDPAH   
8081 PESTICIDES  8151 HERBICIDES   
TCDF - METALS  TCDF - METALS (RCRA)  TCDF - METALS (RCRA)  Semi-VOC   
TOTAL METALS (RCRA)  D.W. 200.8  TCDF   
LEAD - TOTAL  TOX  FLASHPOINT   
RO  TSS  % MOISTURE  CYANIDE   
pH  HEXAVALENT CHROMIUM   
EXPLOSIVES  PECHLORATE   
CHLORIDE  ANIONS  ALKALINITY   
M300

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES
S-12 1.5-2'	16	8-11-17	15:10	S	1						<input checked="" type="checkbox"/>
S-13 1.5-2'	17	8-11-17	15:11	S	1						<input checked="" type="checkbox"/>
S-14 1.5-2'	18	8-11-17	15:13	S	1						<input checked="" type="checkbox"/>
S-15 4.5-5'	19	8-11-17	15:15	S	1						<input checked="" type="checkbox"/>
S-15 N2'	20	8-11-17	15:36	S	1						<input checked="" type="checkbox"/>
S-15 S2'	21	8-11-17	15:34	S	1						<input checked="" type="checkbox"/>
S-15 W2'	22	8-11-17	15:38	S	1						<input checked="" type="checkbox"/>
S-15 E2'	23	8-11-17	15:39	S	1						<input checked="" type="checkbox"/>
S-10 0.5-1'	24	8-11-17	15:17	S	1						<input checked="" type="checkbox"/>
TOTAL											

68

RELINQUISHED BY: (Signature) \_\_\_\_\_ DATE/TIME: 8-11-17 8:00pm  
RECEIVED BY: (Signature) \_\_\_\_\_  
RELINQUISHED BY: (Signature) \_\_\_\_\_ DATE/TIME: \_\_\_\_\_ RECEIVED BY: (Signature) \_\_\_\_\_  
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DATE/TIME: 8-11-17 8:00pm RECEIVED BY: (Signature) \_\_\_\_\_  
TURN AROUND TIME: NORMAL  1 DAY  2 DAY  OTHER  \_\_\_\_\_  
LABORATORY USE ONLY: RECEIVING TEMP: \_\_\_\_\_ THERM #: \_\_\_\_\_  
CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL # \_\_\_\_\_  
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Received by OCD: 12/1/2025 8:52:04 AM

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42 CTB

Project Number: 17-0124-02

Location:

Lab Order Number: 7H15001



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/16/17

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-13 5'-6'	7H15001-01	Soil	08/14/17 10:10	08-15-2017 08:25
S-13 10'-11'	7H15001-02	Soil	08/14/17 10:12	08-15-2017 08:25
S-13 15'-16'	7H15001-03	Soil	08/14/17 10:17	08-15-2017 08:25
S-13 20'-21'	7H15001-04	Soil	08/14/17 10:23	08-15-2017 08:25
S-13 25'-26'	7H15001-05	Soil	08/14/17 10:25	08-15-2017 08:25
S-13 30'-31'	7H15001-06	Soil	08/14/17 10:27	08-15-2017 08:25
S-16 5'-6'	7H15001-07	Soil	08/14/17 12:01	08-15-2017 08:25
S-16 10'-11'	7H15001-08	Soil	08/14/17 12:03	08-15-2017 08:25
S-16 15'-16'	7H15001-09	Soil	08/14/17 12:06	08-15-2017 08:25
S-16 20'-21'	7H15001-10	Soil	08/14/17 12:09	08-15-2017 08:25
S-5 5'-5.5'	7H15001-11	Soil	08/14/17 13:50	08-15-2017 08:25
S-5 N2'	7H15001-12	Soil	08/14/17 14:00	08-15-2017 08:25
S-5 S2'	7H15001-13	Soil	08/14/17 15:38	08-15-2017 08:25
S-5 E2'	7H15001-14	Soil	08/14/17 15:43	08-15-2017 08:25
S-5 W2'	7H15001-15	Soil	08/14/17 15:40	08-15-2017 08:25
S-6 12'-12.5'	7H15001-16	Soil	08/14/17 13:53	08-15-2017 08:25
S-6 N4'	7H15001-17	Soil	08/14/17 14:30	08-15-2017 08:25
S-6 S4'	7H15001-18	Soil	08/14/17 14:22	08-15-2017 08:25
S-6 E4'	7H15001-19	Soil	08/14/17 14:26	08-15-2017 08:25
S-6 W4'	7H15001-20	Soil	08/14/17 14:34	08-15-2017 08:25
S-6 N8'	7H15001-21	Soil	08/14/17 14:28	08-15-2017 08:25
S-6 S8'	7H15001-22	Soil	08/14/17 14:20	08-15-2017 08:25
S-6 E8'	7H15001-23	Soil	08/14/17 14:24	08-15-2017 08:25
S-6 W8'	7H15001-24	Soil	08/14/17 14:32	08-15-2017 08:25
S-10 5'-5.5'	7H15001-25	Soil	08/14/17 15:55	08-15-2017 08:25
S-10 N2'	7H15001-26	Soil	08/14/17 15:58	08-15-2017 08:25
S-10 S2'	7H15001-27	Soil	08/14/17 15:50	08-15-2017 08:25
S-10 E2'	7H15001-28	Soil	08/14/17 15:52	08-15-2017 08:25
S-10 W2'	7H15001-29	Soil	08/14/17 15:56	08-15-2017 08:25

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**S-13 5'-6'**  
**7H15001-01 (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**

<b>Chloride</b>	<b>169</b>	1.05	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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**S-13 10'-11'**  
**7H15001-02 (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>Chloride</b>	<b>290</b>	1.05	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-13 15'-16'**  
**7H15001-03 (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>520</b>	1.08	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>7.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-13 20'-21'**  
**7H15001-04 (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>64.3</b>	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-13 25'-26'**  
**7H15001-05 (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**

Chloride	21.2	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	



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**S-13 30'-31'**  
**7H15001-06 (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**

<b>Chloride</b>	<b>26.1</b>	1.01	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>1.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-16 5'-6'**  
**7H15001-07 (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**

<b>Chloride</b>	<b>70.7</b>	1.10	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-16 10'-11'**  
**7H15001-08 (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>95.2</b>	1.10	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-16 15'-16'**  
**7H15001-09 (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>413</b>	1.11	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-16 20'-21'**  
**7H15001-10 (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	63.8	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-5 5'-5.5'**  
**7H15001-11 (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>19.3</b>	1.15	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>209</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>84.9</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.1 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>294</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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**S-5 N2'**  
**7H15001-12 (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>48.0</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>43.1</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>764</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>152</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		103 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		122 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>959</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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**S-5 S2'**  
**7H15001-13 (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	ND	1.09	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	<b>8.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.7 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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**S-5 E2'**  
**7H15001-14 (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>161</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>356</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>2700</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>524</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		109 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		108 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>3580</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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**S-5 W2'**  
**7H15001-15 (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>16.8</b>	1.20	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>17.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>66.2</b>	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		77.5 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		89.9 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>66.2</b>	30.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 12'-12.5'**  
**7H15001-16 (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>35.2</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>200</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>36.5</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>237</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 N4'**  
**7H15001-17 (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>30.3</b>	1.16	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>14.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>246</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>906</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>160</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		94.4 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		105 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>1310</b>	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 S4'**  
**7H15001-18 (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	61.5	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	11.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-6 E4'**  
**7H15001-19 (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	13.8	1.08	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	7.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		87.3 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-6 W4'**  
**7H15001-20 (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>21.6</b>	1.15	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>281</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>48.5</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		88.3 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>330</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

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**S-6 N8'**  
**7H15001-21 (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>20.1</b>	1.19	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>16.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		90.9 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-6 S8'**  
**7H15001-22 (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	954	1.11	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	10.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		92.8 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		109 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

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 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-6 E8'**  
**7H15001-23 (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	43.8	1.09	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	8.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		108 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-6 W8'**  
**7H15001-24 (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>18.1</b>	1.15	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>61.4</b>	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.5 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>61.4</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-10 5'-5.5'**  
**7H15001-25 (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>4.88</b>	1.10	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	177	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	32.1	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		97.8 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>209</b>	27.5	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-10 N2'**  
**7H15001-26 (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>99.7</b>	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>14.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.5 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		113 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Number: 17-0124-02  
 Project Manager: Mark Larson

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**S-10 S2'**  
**7H15001-27 (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>68.4</b>	1.20	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>17.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>33.2</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>553</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>95.2</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		97.0 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		113 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>681</b>	30.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-10 E2'**  
**7H15001-28 (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>79.3</b>	1.15	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>92.9</b>	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		126 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>92.9</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-10 W2'**  
**7H15001-29 (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	19.4	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235



Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1503 - *** DEFAULT PREP ***</b>										
<b>Blank (P7H1503-BLK1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1503-BS1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	362	1.00	mg/kg wet	400		90.5	80-120			
<b>LCS Dup (P7H1503-BSD1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	366	1.00	mg/kg wet	400		91.5	80-120	1.07	20	
<b>Duplicate (P7H1503-DUP1)</b> Source: 7H15001-01 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	169	1.05	mg/kg dry		169			0.0873	20	
<b>Duplicate (P7H1503-DUP2)</b> Source: 7H15001-11 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	20.4	1.15	mg/kg dry		19.3			5.61	20	
<b>Matrix Spike (P7H1503-MS1)</b> Source: 7H15001-01 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	4460	26.3	mg/kg dry	4210	169	102	80-120			
<b>Batch P7H1507 - *** DEFAULT PREP ***</b>										
<b>Blank (P7H1507-BLK1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1507-BS1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	371	1.00	mg/kg wet	400		92.7	80-120			
<b>LCS Dup (P7H1507-BSD1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	371	1.00	mg/kg wet	400		92.8	80-120	0.0835	20	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235  
 100

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1602 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1602-BLK1)</b>				Prepared & Analyzed: 08/16/17						
% Moisture	ND	0.1	%							
<b>Duplicate (P7H1602-DUP1)</b>				Source: 7H15001-26 Prepared & Analyzed: 08/16/17						
% Moisture	14.0	0.1	%		14.0			0.00	20	
<b>Duplicate (P7H1602-DUP2)</b>				Source: 7H15010-01 Prepared & Analyzed: 08/16/17						
% Moisture	3.0	0.1	%		3.0			0.00	20	
<b>Duplicate (P7H1602-DUP3)</b>				Source: 7H15016-01 Prepared & Analyzed: 08/16/17						
% Moisture	ND	0.1	%		1.0			200	20	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1508 - TX 1005**

**Blank (P7H1508-BLK1)** Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	71.1		"	50.0		142	70-130			S-GC

**LCS (P7H1508-BS1)** Prepared & Analyzed: 08/15/17

C6-C12	911	25.0	mg/kg wet	1000		91.1	75-125			
>C12-C28	870	25.0	"	1000		87.0	75-125			
Surrogate: 1-Chlorooctane	147		"	120		123	70-130			
Surrogate: o-Terphenyl	71.0		"	60.0		118	70-130			

**LCS Dup (P7H1508-BSD1)** Prepared & Analyzed: 08/15/17

C6-C12	912	25.0	mg/kg wet	1000		91.2	75-125	0.0669	20	
>C12-C28	884	25.0	"	1000		88.4	75-125	1.54	20	
Surrogate: 1-Chlorooctane	148		"	120		123	70-130			
Surrogate: o-Terphenyl	74.2		"	60.0		124	70-130			

**Duplicate (P7H1508-DUP1)** Source: 7H15001-23 Prepared & Analyzed: 08/15/17

C6-C12	ND	27.2	mg/kg dry		ND				20	
>C12-C28	16.7	27.2	"		18.1			8.04	20	
Surrogate: 1-Chlorooctane	110		"	109		101	70-130			
Surrogate: o-Terphenyl	66.6		"	54.3		123	70-130			

**Batch P7H1601 - TX 1005**

**Blank (P7H1601-BLK1)** Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	66.4		"	50.0		133	70-130			S-GC

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1601 - TX 1005**

**LCS (P7H1601-BS1)**

Prepared & Analyzed: 08/15/17

C6-C12	855	25.0	mg/kg wet	1000		85.5	75-125			
>C12-C28	880	25.0	"	1000		88.0	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	64.2		"	50.0		128	70-130			

**LCS Dup (P7H1601-BSD1)**

Prepared & Analyzed: 08/15/17

C6-C12	857	25.0	mg/kg wet	1000		85.7	75-125	0.211	20	
>C12-C28	869	25.0	"	1000		86.9	75-125	1.18	20	
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	62.6		"	50.0		125	70-130			

**Duplicate (P7H1601-DUP1)**

Source: 7H07006-21

Prepared: 08/15/17 Analyzed: 08/16/17

C6-C12	53.6	125	mg/kg dry		ND				20	
>C12-C28	14500	125	"		2730			137	20	
Surrogate: 1-Chlorooctane	93.2		"	100		93.2	70-130			
Surrogate: o-Terphenyl	49.8		"	50.0		99.7	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- 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: 8/16/2017

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.

**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Marientfield, Ste. 200  
Midland, TX 79701  
432-687-0901

*Mark Lawson / Green Heiko*

DATE: 8-14-17  
PO #: \_\_\_\_\_  
PROJECT LOCATION OR NAME: Neah Meadows #42 CR6  
LAI PROJECT #: 17-0124-02  
LAB WORK ORDER #: 7HISB01  
COLLECTOR: ST  
PAGE 1 OF 2

**CHAIN-OF-CUSTODY**

Data Reported to:

TRRP report?  
 Yes  No

S=SOIL W=WATER P=PAINT  
A=AIR SL=SLUDGE OT=OTHER

TIME ZONE:  
Time zone/State:

Mountain/NN

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION
S-13 5'-6"	1	8-14-17	10:10	S	1	HCl HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> ICE UNPRESERVED
S-13 10'-11"	2	8-14-17	10:12	S	1	
S-13 15'-16"	3	8-14-17	10:17	S	1	
S-13 20'-21"	4	8-14-17	10:23	S	1	
S-13 25'-26"	5	8-14-17	10:25	S	1	
S-13 30'-31"	6	8-14-17	10:27	S	1	
S-16 5'-6"	7	8-14-17	12:01	S	1	
S-16 10'-11"	8	8-14-17	12:03	S	1	
S-16 15'-16"	9	8-14-17	12:06	S	1	
S-16 20'-21"	10	8-14-17	12:09	S	1	
S-5 5'-5.5	11	8-14-17	13:50	S	1	
S-5 N2'	12	8-14-17	14:00	S	1	
S-5 S2'	13	8-14-17	15:36	S	1	
S-5 E2'	14	8-14-17	15:43	S	1	
S-5 W2'	15	8-14-17	15:40	S	1	
TOTAL						

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015  **OK**
  - DIESEL MOD 8015  **OK**
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8081 PESTICIDES  8151 HERBICIDES
  - 8082 PCBs
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  HERB  Semi-VOC
  - TOTAL METALS (RCRA)  D.W. 200.8  TCLP
  - LEAD - TOTAL  FLASHPOINT
  - ROI  TOX
  - TDS  TSS  % MOISTURE  CYANIDE
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PECHLORATED
  - CHLORIDE  ANIONS  ALKALINITY
  - M 300**

FIELD NOTES

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	TURN AROUND TIME	LABORATORY USE ONLY:
<i>Mark Lawson</i>	8-15-17 7:11	<i>Green Heiko</i>	8-15-17 8:25	NORMAL <input type="checkbox"/> 1 DAY <input checked="" type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/> <i>Neah</i>	RECEIVING TEMP: <u>35</u> THERM #: _____ CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____ <input checked="" type="checkbox"/> HAND DELIVERED

**Arson & Associates, Inc.**  
 Environmental Consultants  
 507 N. Marrenfield, Ste. 200  
 Midland, TX 79701  
 432-687-0901

DATE: 8-14-17  
 PO #: \_\_\_\_\_  
 PROJECT LOCATION OR NAME: North Haven - 42 CTB  
 LAI PROJECT #: 17-0124-02  
 COLLECTOR: SI

CHAIN-OF-CUSTOMER

TRRP report?  
 Yes  No

TIME ZONE:  
 Time zone/State:

Matrix/MI

Field Sample I.D.

S=SOIL  
 W=WATER  
 A=AIR  
 P=PAINT  
 SL=SLUDGE  
 OT=OTHER

Lab # Date Time Matrix

# of Containers  
 HCl  
 HNO<sub>3</sub>  
 H<sub>2</sub>SO<sub>4</sub>  NaOH   
 ICE  
 UNPRESERVED

**ANALYSES**  
 BTEX  MTBE   
 TRPH 418.1  TPH 1005  TPH 1006   
 GASOLINE MOD 8015   C10  
 DIESEL - MOD 8015   
 VOC 8260   
 SVOC 8270  PAH 8270  HOLDPAH   
 8081 PESTICIDES  8151 HERBICIDES   
 8082 PCBs   
 TCLP - METALS (RCRA)  TCLP VOC   
 TCLP - PEST  HERB  Sem-VOC   
 TOTAL METALS (RCRA)  OTHER LIST   
 LEAD - TOTAL  D.W. 200.8  TCLP   
 RCI  TOX  FLASHPOINT   
 TDS  TSS  % MOISTURE  CYANIDE   
 pH  HEXAVALENT CHROMIUM   
 EXPLOSIVES  PECHLORATE   
 CHLORIDE  ANIONS  ALKALINITY   
 TSS

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES
S-10 12'-12.5'	16	8-14-17	13:53	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N4'	17	8-14-17	14:30	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S4'	18	8-14-17	14:22	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E4'	19	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W4'	20	8-14-17	14:34	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N0'	21	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S0'	22	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E6'	23	8-14-17	14:24	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W6'	24	8-14-17	14:32	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E-5.5'	25	8-14-17	15:55	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N2'	26	8-14-17	15:56	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S2'	27	8-14-17	15:50	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E2'	28	8-14-17	15:52	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W2'	29	8-14-17	15:56	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
TOTAL											

RELINQUISHED BY: (Signature) Shel DATE/TIME 8-15-17 7:18  
 RECEIVED BY: (Signature) Car Ferguson  
 RELINQUISHED BY: (Signature) Car Ferguson DATE/TIME 8-15-17 8:25  
 RECEIVED BY: (Signature) Car Ferguson

TURN AROUND TIME  
 NORMAL   
 1 DAY   
 2 DAY   
 OTHER  rush

LABORATORY USE ONLY:  
 RECEIVING TEMP: 1.8 THERM # 41305  
 CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL # \_\_\_\_\_  
 HAND DELIVERED

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42 CTB

Project Number: 17-0124-02

Location:

Lab Order Number: 7H15002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/16/17



Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-14 5'-5.5'	7H15002-01	Soil	08/14/17 15:10	08-15-2017 08:25
S-14 N2'	7H15002-02	Soil	08/14/17 15:30	08-15-2017 08:25
S-14 S2'	7H15002-03	Soil	08/14/17 15:22	08-15-2017 08:25
S-14 E2'	7H15002-04	Soil	08/14/17 15:28	08-15-2017 08:25
S-14 W2'	7H15002-05	Soil	08/14/17 15:20	08-15-2017 08:25

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 5'-5.5'**  
**7H15002-01 (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**

<b>Chloride</b>	<b>247</b>	1.23	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>19.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.9	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235  
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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 N2'**  
**7H15002-02 (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>Chloride</b>	<b>105</b>	1.12	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
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 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 S2'**  
**7H15002-03 (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**

Chloride	192	1.25	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	20.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		95.7 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	31.2	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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 P.O. Box 50685  
 Midland TX, 79710

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 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 E2'**  
**7H15002-04 (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>139</b>	1.22	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>18.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.8 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 W2'**  
**7H15002-05 (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**

Chloride	412	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		97.5 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1507 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1507-BLK1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	ND	1.00	mg/kg wet							
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**LCS (P7H1507-BS1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	371	1.00	mg/kg wet	400		92.7	80-120			
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**LCS Dup (P7H1507-BSD1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	371	1.00	mg/kg wet	400		92.8	80-120	0.0835	20	
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**Batch P7H1602 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1602-BLK1)** Prepared & Analyzed: 08/16/17

% Moisture	ND	0.1	%							
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**Duplicate (P7H1602-DUP1)** Source: 7H15001-26 Prepared & Analyzed: 08/16/17

% Moisture	14.0	0.1	%		14.0			0.00	20	
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**Duplicate (P7H1602-DUP2)** Source: 7H15010-01 Prepared & Analyzed: 08/16/17

% Moisture	3.0	0.1	%		3.0			0.00	20	
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**Duplicate (P7H1602-DUP3)** Source: 7H15016-01 Prepared & Analyzed: 08/16/17

% Moisture	ND	0.1	%		1.0			200	20	
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Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1601 - TX 1005**

**Blank (P7H1601-BLK1)**

Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	66.4		"	50.0		133	70-130			S-GC

**LCS (P7H1601-BS1)**

Prepared & Analyzed: 08/15/17

C6-C12	855	25.0	mg/kg wet	1000		85.5	75-125			
>C12-C28	880	25.0	"	1000		88.0	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	64.2		"	50.0		128	70-130			

**LCS Dup (P7H1601-BSD1)**

Prepared & Analyzed: 08/15/17

C6-C12	857	25.0	mg/kg wet	1000		85.7	75-125	0.211	20	
>C12-C28	869	25.0	"	1000		86.9	75-125	1.18	20	
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	62.6		"	50.0		125	70-130			

**Duplicate (P7H1601-DUP1)**

Source: 7H07006-21

Prepared: 08/15/17 Analyzed: 08/16/17

C6-C12	53.6	125	mg/kg dry		ND					20
>C12-C28	14500	125	"		2730				137	20
Surrogate: 1-Chlorooctane	93.2		"	100		93.2	70-130			
Surrogate: o-Terphenyl	49.8		"	50.0		99.7	70-130			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- 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: 8/16/2017

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.

**Carson & Associates, Inc.**  
 Environmental Consultants  
 507 N. Marienfeld, Ste. 200  
 Midland, TX 79701  
 432-687-0901

*Mark Larson/Carson Hughes*

DATE: 8.14.17  
 PO #: 170124-01  
 PROJECT LOCATION OR NAME: Abn New 42 CTH  
 LAI PROJECT #: 17-0124-02  
 COLLECTOR: SJ

LAB WORK ORDER #: 7HIS002  
 PAGE 1 OF 1

CHAIN-OF-CUSTODY

TRRP report?  Yes  No

TIME ZONE: \_\_\_\_\_  
 Time zone/State: \_\_\_\_\_

S=SOIL P=PAINT  
 W=WATER SL=SLUDGE  
 A=AIR OT=OTHER

Matrix/ID

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED
S-14 S1 S5	1	8.14.17	15:10	S	1					
S-14 N2	2	8.14.17	15:30	S	1					
S-14 S2	3	8.14.17	15:22	S	1					
S-14 E2	4	8.14.17	15:26	S	1					
S-14 W2	5	8.14.17	15:20	S	1					

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015   **ORO**
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8081 PESTICIDES  8151 HERBICIDES
  - 8082 PCBs
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  HERB  Semi-VOC
  - TOTAL METALS (RCRA)  D.W. 200.8  TCLP
  - LEAD - TOTAL  FLASHPOINT
  - RCl  TOX  % MOISTURE  CYANIDE
  - TDS  TSS
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PETCHLORATE
  - CHLORIDE  ANIONS  ALKALINITY
  - JOB**

FIELD NOTES

RELINQUISHED BY: (Signature) [Signature] DATE/TIME 8.15.17 1:15 RECEIVED BY: (Signature) [Signature]

RELINQUISHED BY: (Signature) [Signature] DATE/TIME 8.15.17 8:25 RECEIVED BY: (Signature) [Signature]

RELINQUISHED BY: (Signature) [Signature] DATE/TIME \_\_\_\_\_ RECEIVED BY: (Signature) \_\_\_\_\_

TURN AROUND TIME  
 NORMAL   
 1 DAY   
 2 DAY   
 OTHER  rush

LABORATORY USE ONLY  
 RECEIVING TEMP: 1.8 THERM #: LVCF  
 CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL # \_\_\_\_\_  
 HAND DELIVERED

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: XTO Nash Draw Battery 42

Project Number: 17-0124-02

Location: New Mexico

Lab Order Number: 7H17002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/17/17

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: XTO Nash Draw Battery 42  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-6 N 0-4'	7H17002-01	Soil	08/16/17 16:45	08-17-2017 08:16

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 N 0-4'**  
**7H17002-01 (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	20.2	1.08	mg/kg dry	1	P7H1714	08/17/17	08/17/17	EPA 300.0	
% Moisture	7.0	0.1	%	1	P7H1701	08/17/17	08/17/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.2 %		70-130	P7H1706	08/17/17	08/17/17	TPH 8015M	
Surrogate: o-Terphenyl		109 %		70-130	P7H1706	08/17/17	08/17/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/17/17	08/17/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
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 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1701 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1701-BLK1)**

Prepared & Analyzed: 08/17/17

% Moisture	ND	0.1	%							
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**Duplicate (P7H1701-DUP1)**

Source: 7H16006-01

Prepared & Analyzed: 08/17/17

% Moisture	5.0	0.1	%		5.0			0.00	20	
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**Batch P7H1714 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1714-BLK1)**

Prepared & Analyzed: 08/17/17

Chloride	ND	1.00	mg/kg wet							
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**LCS (P7H1714-BS1)**

Prepared & Analyzed: 08/17/17

Chloride	330	1.00	mg/kg wet	400		82.5	80-120			
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**LCS Dup (P7H1714-BSD1)**

Prepared & Analyzed: 08/17/17

Chloride	350	1.00	mg/kg wet	400		87.5	80-120	5.88	20	
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Permian Basin Environmental Lab, L.P.

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 P.O. Box 50685  
 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1706 - TX 1005**

**Blank (P7H1706-BLK1)**

Prepared & Analyzed: 08/17/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	63.3		"	50.0		127	70-130			

**LCS (P7H1706-BS1)**

Prepared & Analyzed: 08/17/17

C6-C12	970	25.0	mg/kg wet	1000		97.0	75-125			
>C12-C28	1020	25.0	"	1000		102	75-125			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	56.7		"	50.0		113	70-130			

**LCS Dup (P7H1706-BSD1)**

Prepared & Analyzed: 08/17/17

C6-C12	970	25.0	mg/kg wet	1000		97.0	75-125	0.0814	20	
>C12-C28	1010	25.0	"	1000		101	75-125	0.990	20	
Surrogate: 1-Chlorooctane	126		"	100		126	70-130			
Surrogate: o-Terphenyl	62.9		"	50.0		126	70-130			

**Duplicate (P7H1706-DUP1)**

Source: 7H17002-01

Prepared & Analyzed: 08/17/17

C6-C12	ND	26.9	mg/kg dry		ND				20	
>C12-C28	ND	26.9	"		ND				20	
Surrogate: 1-Chlorooctane	107		"	108		99.2	70-130			
Surrogate: o-Terphenyl	63.9		"	53.8		119	70-130			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: XTO Nash Draw Battery 42  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- 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: 8/17/2017

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.

*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  
123



**Arson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

DATE: 8.17.17 PAGE 11 OF 11  
PO #: \_\_\_\_\_ LAB WORK ORDER #: 1111002  
PROJECT LOCATION OR NAME: XTD NASH DRAW 42  
LAI PROJECT #: 11-0124-02 COLLECTOR: SKS

CHAIN-OF-CUSTODY

Data Reported to:

TRRP report?  Yes  No  
S=SOIL P=PAINT  
W=WATER SL=SLUDGE  
A=AIR OT=OTHER

TIME ZONE:  
Time zone/State:

Field Sample I.D. M. Waterbury MM

Lab # \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Matrix S

# of Containers 1

PRESERVATION  
HCl \_\_\_\_\_  
HNO<sub>3</sub> \_\_\_\_\_  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE   
UNPRESERVED

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8082 PESTICIDES  8151 HERBICIDES
  - TCLP - METALS  TCLP - VOC
  - TCLP - PEST  Herb  OTHER LIST
  - TOTAL METALS (RCRA)  Semi-VOC
  - LEAD - TOTAL  D.W. 200.8  TCLP
  - RCI  TOX  FLASHPOINT
  - TDS  TSS  % MOISTURE
  - PH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PERCHLORATE
  - CHLORIDE ANIONS  ALKALINITY
- M 300

FIELD NOTES

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	TURN AROUND TIME	LABORATORY USE ONLY:
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	<u>1 DAY</u>	RECEIVING TEMP: <u>4.0</u> THERM # <u>WFL1</u>
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	<u>2 DAY</u>	CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	<u>Push Now</u>	CARRIER BILL # _____
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	<u>Push Today</u>	<input checked="" type="checkbox"/> HAND DELIVERED
TOTAL						

**Appendix C**  
**Waste Manifests**

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

S.D.R.  
#020

### NON-HAZARDOUS WASTE MANIFEST

NO **119281**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO: **#020**

G E N E R A T O R	3. COMPANY NAME <b>XTO Energy</b> PHONE NO. <b>(917) 970-2800</b>		4. ADDRESS <b>500 W Illinois # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>			5. PICK-UP DATE <b>8/14/2017</b>	
	7. NAME OR DESCRIPTION OF WASTE SHIPPED: a. <b>Non-Regulated, Non Hazardous Waste</b> b. <b>41420</b> c. d. <b>WT 49720 48640 39600</b>		8. CONTAINERS No. Type		9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
A T O R	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H TC 179,380</b>					13. WASTE PROFILE NO. <b>910623</b>	
	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>						
T R A N S P O R T E R S	NAME <b>JOE ONTIVEROS</b>		PHONE NO <b>575-887-4048</b>		24-HOUR EMERGENCY NO.		
	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC						
D I S P O S I T O R	PRINTED/TYPED NAME		SIGNATURE			DATE	
	16. <b>TRANSPORTER (1)</b> NAME: <b>DR ENTERPRISE, LLC / MARK LARSON &amp; ASS</b> TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b> EMERGENCY PHONE: <b>(575) 441-7330</b>		17. <b>TRANSPORTER (2)</b> NAME: TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: EMERGENCY PHONE:				
L A N D	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME SIGNATURE DATE		19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME SIGNATURE DATE				
	Lea Land, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM			PHONE: 575-887-4048	
S I T E	PERMIT NO. <b>WM-01-035 - New Mexico</b>		20. COMMENTS				
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.						
Y	AUTHORIZED SIGNATURE		CELL NO.		DATE	TIME	
	<b>[Signature]</b>		<b>[Signature]</b>		<b>8/14/2017</b>	<b>9:35</b>	

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119282**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **508. #021**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b> PHONE NO. <b>(817) 870-2900</b>	4. ADDRESS <b>500 W Illinois # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>	5. PICK-UP DATE <b>8/14/2017</b>	
	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY
N E R E A S E R	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b>	<b>CM</b>
	b. <b>41960</b>			
	c.			
	d. <b>WT 48940 53040 44320</b>			
A U T H O R I Z E D	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H</b>		13. WASTE PROFILE NO. <b>910623</b>	
	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>			
T R A N S P O R T E R S	NAME <b>JOE ONTIVEROS</b>		PHONE NO <b>575-887-4048</b>	24-HOUR EMERGENCY NO.
	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC			
T R A N S P O R T E R S	PRINTED/TYPED NAME		SIGNATURE	DATE
	16. <b>TRANSPORTER (1)</b> NAME: <b>OR ENTERPRISE LLC / MARK LARSON &amp; ASS</b> TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b> EMERGENCY PHONE: <b>(675) 311-7337</b>		17. <b>TRANSPORTER (2)</b> NAME: TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: EMERGENCY PHONE:	
D I S P O S I T O R Y	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME <b>Joe Ontiveros</b> SIGNATURE <b>[Signature]</b> DATE <b>8/14/2017</b>		19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME _____ SIGNATURE _____ DATE _____	
	10. LEA LAND, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	
D I S P O S I T O R Y	PERMIT NO. <b>WM-01-035 - New Mexico</b>		20. COMMENTS	
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.			
A U T H O R I Z E D	AUTHORIZED SIGNATURE <b>[Signature]</b>		CELL NO.	DATE <b>8/14/2017</b>
				TIME <b>145</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR # 006

### NON-HAZARDOUS WASTE MANIFEST

NO **119283**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **# 006**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>	5. PICK-UP DATE <b>8/14/2017</b>			
	PHONE NO. <b>(817) 870-2800</b>	CITY STATE ZIP <b>Midland Tx 79701</b>	6. TNRCC I.D. NO.			
N E R T I F I C A T I O N	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b> <b>CM</b>			
	b. <b>4420</b>					
	c.					
A U T H O R I Z E D	d. <b>WT 49420 42740 42380</b>					
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>		13. WASTE PROFILE NO. <b>910623</b>			
T R A N S P O R T E R S	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>					
	NAME <b>JOE ONTIVEROS</b>	PHONE NO. <b>575-887-3048</b>	24-HOUR EMERGENCY NO.			
D I S P O S I T I O N	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC					
	PRINTED/TYPED NAME	SIGNATURE		DATE		
D I S P O S I T I O N	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>		
	NAME: <b>SDR ENTERPRISE, LLC / MARK LARSON &amp; ASSOCIATES</b>			NAME:		
A U T H O R I Z E D	TEXAS I.D. NO.			TEXAS I.D. NO.		
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>			IN CASE OF EMERGENCY CONTACT:		
D I S P O S I T I O N	EMERGENCY PHONE: <b>(575) 411-7330</b>			EMERGENCY PHONE:		
	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material		
D I S P O S I T I O N	PRINTED/TYPED NAME <b>Nos Ponce</b>			PRINTED/TYPED NAME _____		
	SIGNATURE <b>[Signature]</b> DATE <b>8/14/2017</b>			SIGNATURE _____ DATE _____		
D I S P O S I T I O N	Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM		PHONE: 575-887-4048		
	PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS				
D I S P O S I T I O N	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.					
	AUTHORIZED SIGNATURE <b>[Signature]</b>	CELL NO. <b>[Redacted]</b>	DATE <b>8/14/2017</b>	TIME		

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR

### NON-HAZARDOUS WASTE MANIFEST

NO **119309**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **021**

G E N E R A T O R	3. COMPANY NAME <b>KTO-Energy</b> PHONE NO. <b>(917) 970 2800</b>	4. ADDRESS <b>500 Willinots # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>	5. PICK-UP DATE <b>8/15/2017</b>	
	7. NAME OR DESCRIPTION OF WASTE SHIPPED: a. <b>Non-Regulated, Non Hazardous Waste</b> b. c. d. <b>WT. 43000 46,460 46,720</b>			6. TNRCC I.D. NO.
A T R A N S P O R T E R	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H</b>			13. WASTE PROFILE NO. <b>910623</b>

### IN CASE OF EMERGENCY OR SPILL, CONTACT

14. NAME <b>JOE ONTIVEROS</b>	PHONE NO <b>575-887-4048</b>	24-HOUR EMERGENCY NO.
----------------------------------	---------------------------------	-----------------------

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE
--------------------	-----------	------

16. <b>TRANSPORTER (1)</b> NAME: <b>DR ENTERPRISE, LLC / MARK LARSON &amp; ASS</b> TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b> EMERGENCY PHONE: <b>(575) 141-7330</b>	17. <b>TRANSPORTER (2)</b> NAME: TEXAS I.D. NO. IN CASE OF EMERGENCY CONTACT: EMERGENCY PHONE:
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME <b>Lea Land</b> SIGNATURE <b>[Signature]</b> DATE <b>8/15/2017</b>	19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material PRINTED/TYPED NAME SIGNATURE DATE

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
---------------	---	------------------------

PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS
---	--------------

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE <b>Santas Gonzalez</b>	CELL NO.	DATE <b>8/15/2017</b>	TIME <b>4:00</b>
--	----------	--------------------------	---------------------

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119310**

1. PAGE     OF    

2. TRAILER NO. **006**

G E N E R A T O R	3. COMPANY NAME <b>XTD Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>			5. PICK-UP DATE <b>8/15/2017</b>	
	PHONE NO. <b>(817) 870-2800</b>	CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>	6. TNRCC I.D. NO.	
N E M O S I T Y	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	9. TOTAL QUANTITY
	a. <b>Non-Regulated, Non Hazardous Waste</b>				<b>1</b>	<b>CM</b>
	b. <b>44,080 43,260</b>					
	c. <b>40,460 45,160 45,260</b>					
A U T H O R I Z E D	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>				13. WASTE PROFILE NO. <b>910623</b>	
	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>					
T R A N S P O R T E R S	NAME <b>JOE ONTIVEROS</b>		PHONE NO. <b>575-887-4048</b>		24-HOUR EMERGENCY NO.	
	15. <b>GENERATOR'S CERTIFICATION:</b> I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC					
D I S P O S I T Y	PRINTED/TYPED NAME			SIGNATURE		DATE
	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>		
D I S P O S I T Y	NAME: <b>DR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>			NAME:		
	TEXAS I.D. NO.			TEXAS I.D. NO.		
D I S P O S I T Y	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>			IN CASE OF EMERGENCY CONTACT:		
	EMERGENCY PHONE: <b>(575) 441-7330</b>			EMERGENCY PHONE:		
D I S P O S I T Y	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material		
	PRINTED/TYPED NAME <b>Isauro Garcia N</b>			PRINTED/TYPED NAME _____		
D I S P O S I T Y	SIGNATURE <b>Isauro Garcia N</b>			SIGNATURE _____		
	DATE <b>8/15/2017</b>			DATE _____		
D I S P O S I T Y	Lea Land, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM		PHONE: 575-887-4048	
	PERMIT NO. <b>WM-01-035 - New Mexico</b>			20. COMMENTS		
D I S P O S I T Y	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.					
	AUTHORIZED SIGNATURE <b>Antonio Gonzalez</b>		CELL NO.		DATE <b>8/15/2017</b>	TIME <b>9:05</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR

<b>NON-HAZARDOUS WASTE MANIFEST</b>		NO <b>119311</b>	1. PAGE ___ OF ___	2. TRAILER NO. <b>020</b>
<b>G E N E R A T O R</b>	3. COMPANY NAME <b>XTO Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>		5. PICK-UP DATE <b>8/15/2017</b>
	PHONE NO. <b>(817) 870-2800</b>	CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>
<b>E N T R Y</b>	7. NAME OR DESCRIPTION OF WASTE SHIPPED:			8. CONTAINERS No.   Type
	a. <b>Non-Regulated, Non Hazardous Waste</b>			<b>1</b>   <b>CM</b>
	b. <b>48740</b>			
	c.			
<b>R E C E I V E R</b>	d. <b>WT 46280 47270 50780</b>			
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 12 H</b>			13. WASTE PROFILE NO. <b>910623</b>
<b>A U T H O R I Z E D</b>	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>			
	NAME <b>JOE ONTIVEROS</b>	PHONE NO. <b>575-887-4018</b>	24-HOUR EMERGENCY NO.	
<b>O F F I C I A L</b>	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC			
	PRINTED/TYPED NAME	SIGNATURE		DATE
<b>T R A N S P O R T E R S</b>	16. <b>TRANSPORTER (1)</b>		17. <b>TRANSPORTER (2)</b>	
	NAME: <b>SDR ENTERPRISE LLC / MARK LARSON &amp; ASSOCIATES</b>		NAME:	
	TEXAS I.D. NO.		TEXAS I.D. NO.	
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>		IN CASE OF EMERGENCY CONTACT:	
EMERGENCY PHONE: <b>(575) 441-7330</b>		EMERGENCY PHONE:		
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material		19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material		
PRINTED/TYPED NAME		PRINTED/TYPED NAME		
SIGNATURE		SIGNATURE		
<b>D I S P O S I T O R Y</b>	Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM		PHONE: 575-887-4048
	PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS		
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.			
AUTHORIZED SIGNATURE		CELL NO.	DATE	TIME
<b>[Signature]</b>			<b>8/15/2017</b>	<b>9:30</b>

GENERATOR: COPIES 1 & 6      DISPOSAL SITE: COPIES 2 & 3      TRANSPORTERS: COPIES 4 & 5



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

TRIP# CROWN  
SDB

### NON-HAZARDOUS WASTE MANIFEST

NO **119312**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **50B**

G E	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 Willinois # 100</b>	5. PICK-UP DATE <b>8/15/2017</b>		
	PHONE NO. <b>(817) 870-2800</b>	CITY STATE ZIP <b>Midland Tx 79701</b>	6. TNRCC I.D. NO.		
N E R A	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.
	a. <b>Non-Regulated, Non Hazardous Waste</b>		1	CM	
	b. <b>40,440</b>				
	c.				
	d. WT: <b>41,820 40880 44,140</b>				
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>			13. WASTE PROFILE NO. <b>910623</b>	

14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>		
NAME <b>JOE ONTIVEROS</b>	PHONE NO <b>375-887-4048</b>	24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE
--------------------	-----------	------

T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>	17. <b>TRANSPORTER (2)</b>
	NAME: <b>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>	NAME:
	TEXAS I.D. NO.	TEXAS I.D. NO.
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: <b>(575) 441-7333</b>	EMERGENCY PHONE:	
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material	19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material	
PRINTED/TYPED NAME <b>ZELDER + COMPANY</b>	PRINTED/TYPED NAME _____	
SIGNATURE <b>[Signature]</b> DATE <b>8/15/2017</b>	SIGNATURE _____ DATE _____	

D I S C P I O L S I A T O R Y	Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
	PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.			
AUTHORIZED SIGNATURE <b>[Signature]</b>	CELL NO.	DATE <b>8/15/2017</b>	TIME <b>9:40</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

*Triple Crown*

### NON-HAZARDOUS WASTE MANIFEST

NO **119315**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **# 501**

G E N E R A T O R	3. COMPANY NAME <i>KTO Energy</i>	4. ADDRESS <i>500 W Illinois # 100</i>			5. PICK-UP DATE <i>8/15/2017</i>	
	PHONE NO. <i>(817) 870-2800</i>	CITY <i>Midland</i>	STATE <i>Tx</i>	ZIP <i>79701</i>	6. TNRCC I.D. NO.	
N E R A T O R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:			8. CONTAINERS No.	9. TOTAL QUANTITY	10. UNIT Wt/Vol.
	a. <i>Non-Regulated, Non Hazardous Waste</i>			<i>1</i>	<i>CM</i>	
	b.					
	c.					
A T T R I B U T O R	d. WT. <i>41,280 41,480 40,880</i>					
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <i>NASH UNIT CTB #42 H</i>				13. WASTE PROFILE NO. <i>910623</i>	
14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>						
NAME <i>JOE ONTIVEROS</i>		PHONE NO. <i>575-887-4048</i>		24-HOUR EMERGENCY NO.		
15. <b>GENERATOR'S CERTIFICATION:</b> I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC						
PRINTED/TYPED NAME			SIGNATURE		DATE	
T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>		
	NAME: <i>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</i>			NAME:		
	TEXAS I.D. NO.			TEXAS I.D. NO.		
	IN CASE OF EMERGENCY CONTACT: <i>SHANNON RUSK</i> <i>(575) 441-7339</i>			IN CASE OF EMERGENCY CONTACT:		
EMERGENCY PHONE:			EMERGENCY PHONE:			
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material			
PRINTED/TYPED NAME <i>Jim Galvan</i>			PRINTED/TYPED NAME _____			
SIGNATURE <i>Jim Galvan</i> DATE <i>8/15/2017</i>			SIGNATURE _____ DATE _____			
D I S P O S I T O R	Lea Land, LLC		ADDRESS: <i>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</i>		PHONE: <i>575-887-4048</i>	
	PERMIT NO. <i>WM-01-035 - New Mexico</i>		20. COMMENTS			
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.					
AUTHORIZED SIGNATURE <i>Santos Donzales</i>			CELL NO.		DATE <i>8/15/2017</i>	TIME <i>9:45</i>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119329**

1. PAGE     OF    

2. TRAILER NO. **020**

<b>G E N E R A T O R</b>	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b> CITY: <b>Midland</b> STATE: <b>Tx</b> ZIP: <b>79701</b>			5. PICK-UP DATE <b>8/18/2017</b>				
	PHONE NO. <b>(817) 870-2800</b>				6. TNRCC I.D. NO.				
<b>N E R A T I V E</b>	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>				<b>1</b>	<b>CM</b>			
	b.								
	c.								
<b>A U T H O R I Z E D</b>	d. <b>WT 40460 40,000 51,520</b>								
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>						13. WASTE PROFILE NO. <b>910623</b>		
<b>T R A N S P O R T E R S</b>	<b>14. IN CASE OF EMERGENCY OR SPILL, CONTACT</b>								
	NAME <b>JOE ONTIVEROS</b>			PHONE NO <b>575-887-4048</b>			24-HOUR EMERGENCY NO.		
<b>O R I G I N A L</b>	15. <b>GENERATOR'S CERTIFICATION:</b> I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC								
	PRINTED/TYPED NAME				SIGNATURE				DATE
	16. <b>TRANSPORTER (1)</b>				17. <b>TRANSPORTER (2)</b>				
<b>D I S P O S I T O R Y</b>	NAME: <b>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>				NAME:				
	TEXAS I.D. NO.				TEXAS I.D. NO.				
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>				IN CASE OF EMERGENCY CONTACT:				
	EMERGENCY PHONE: <b>(575) 441-7330</b>				EMERGENCY PHONE:				
	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material				19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material				
PRINTED/TYPED NAME <b>Shannon Rusk</b>				PRINTED/TYPED NAME _____					
SIGNATURE <b>[Signature]</b> DATE <b>8/18/2017</b>				SIGNATURE _____ DATE _____					
<b>D I S P O S I T O R Y</b>	Lea Land, LLC			ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM			PHONE: 575-887-4048		
	PERMIT NO. <b>WM-01-035 - New Mexico</b>				20. COMMENTS				
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.								
AUTHORIZED SIGNATURE <b>[Signature]</b>				CELL NO.		DATE <b>8/18/2017</b>		TIME <b>9:45</b>	

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR

### NON-HAZARDOUS WASTE MANIFEST

NO **119330**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **021**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b>		4. ADDRESS <b>500 W Illinois # 100</b>			5. PICK-UP DATE <b>8/16/2017</b>			
	PHONE NO. <b>(817) 970-2800</b>		CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>	6. TNRCC I.D. NO.			
N E R A T O R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:					8. CONTAINERS	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>					No. <b>1</b>	Type <b>CM</b>		
	b.								
	c.								
A U T H O R I Z E D	d. <b>WT 45,680 44,040</b>								
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>					13. WASTE PROFILE NO. <b>910623</b>			
T R A N S P O R T E R	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>								
	NAME <b>JOE ONTIVEROS</b>			PHONE NO. <b>575-887-4048</b>			24-HOUR EMERGENCY NO.		
O R I G I N A L	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC								
	PRINTED/TYPED NAME				SIGNATURE			DATE	
T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>				17. <b>TRANSPORTER (2)</b>				
	NAME: <b>SDR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>				NAME:				
	TEXAS I.D. NO.				TEXAS I.D. NO.				
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>				IN CASE OF EMERGENCY CONTACT:				
EMERGENCY PHONE: <b>(575) 411-7330</b>				EMERGENCY PHONE:					
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material				19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material					
PRINTED/TYPED NAME <b>Eric Rodri</b>				PRINTED/TYPED NAME _____					
SIGNATURE <b>[Signature]</b> DATE <b>8/16/2017</b>				SIGNATURE _____ DATE _____					
D I S P O S I T O R Y	Lea Land, LLC		ADDRESS: <b>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</b>			PHONE: <b>575-887-4048</b>			
	PERMIT NO. <b>WM-01-035 - New Mexico</b>			20. COMMENTS					
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.								
AUTHORIZED SIGNATURE <b>[Signature]</b>				CELL NO.		DATE <b>8/16/2017</b>		TIME <b>9:00</b>	

**Appendix D**  
**Photographs**

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Location Sign August 10, 2017



Location Viewing South Prior to Excavation, April 12, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Location Viewing North, June 2, 2017



Location Viewing East Prior to Remediation and Chloride Delineation at DP-11, August 10, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Soil Excavation near DP-7 Viewing Southwest, August 10, 2017



Soil Excavation along South Side of Spill Area Viewing East, August 10, 2017



Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Soil Excavation at S-15 Viewing North, August 11, 2017



Excavation Area Viewing West, August 11, 17

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Final Excavation Area Viewing West, August 16, 2017



Final Excavation Area Viewing South, August 16, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Backfill of Excavation Viewing Southwest, August 21, 2017



Backfill of Excavation Viewing Southwest, August 22, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Water Packing of Excavation Viewing South, August 22, 2017



Backfill of Excavation Viewing South, August 23, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Final Backfill Viewing Southwest, August 23, 2017



Final Backfill Viewing North, August 23, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



New Firewall Viewing Northwest, August 23, 2017

**Appendix E**  
**Initial and Final C-141**

**NM OIL CONSERVATION**

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

State of New Mexico

Energy Minerals and Natural Resources

NOV 03 2016

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

**RECEIVED**

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

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

**Release Notification and Corrective Action**

**OPERATOR**  Initial Report  Final Report

Name of Company <b>XTO Energy, Inc. 324373</b>	Contact <b>John Robinson</b>
Address <b>500 West Illinois, Suite 100 Midland, TX 79701</b>	Telephone No. <b>575-44-5199</b>
Facility Name <b>Nash 42 CTB</b>	Facility Type <b>Battery</b>

Surface Owner <b>BLM</b>	Mineral Owner	API No.
--------------------------	---------------	---------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	18	23 S	30 E					Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release <b>Oil</b>	Volume of Release: <b>124.71 barrels</b>	Volume Recovered <b>121 barrels</b>
Source of Release <b>Pop off tank</b>	Date and Hour of Occurrence <b>10-27-16 9:00pm</b>	Date and Hour of Discovery <b>10-28-16 7:30am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Shelly Tucker BLM and Heather Patterson NMOCD</b>	
By Whom? <b>John Robinson</b>	Date and Hour <b>10-28-16 11:00 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Rod between float and oil dump broke causing FWKO to dome out and overflow 210 pop off tank. Cleaned up all oil possible and pumped into spare water tank to be circulated through system.

Describe Area Affected and Cleanup Action Taken.\*  
Leak stayed inside berm. Will clean up according to BLM and NMOCD standards

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

Signature:	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>John Robinson</b>	Approved by Environmental Specialist:	
Title: <b>Maintenance Foreman</b>	Approval Date: <b>11/4/16</b>	Expiration Date: <b>NIA</b>
E-mail Address: <b>john_robinson@xtoenergy.com</b>	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: <b>11-3-16</b>	Phone: <b>575-441-5199</b>	

\* Attach Additional Sheets If Necessary

2RP-3976



**Patterson, Heather, EMNRD**

---

**From:** Robinson, John <John\_Robinson@xtoenergy.com>  
**Sent:** Thursday, November 03, 2016 1:52 PM  
**To:** stucker@blm.gov; Patterson, Heather, EMNRD  
**Subject:** FW: form  
**Attachments:** Form-C141.pdf

---

**From:** Snyder, Kathy  
**Sent:** Thursday, November 03, 2016 2:48 PM  
**To:** Robinson, John  
**Subject:** form

***Kathy Snyder***

Office Clerk

XTO Energy, Inc

PO Box 700

Eunice, NM 88231

Phone: 575-394-2089

Fax: 575-394-3362

Email: [Kathy\\_snyder@xtoenergy.com](mailto:Kathy_snyder@xtoenergy.com)

An ExxonMobil Subsidiary

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

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

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company XTO Energy Inc. 324373	Contact Luke Williams
Address 500 West Illinois, Suite 100 Midland TX 79701	Telephone No. 423-682-8873
Facility Name Nash 42	Facility Type Battery

Surface Owner State	Mineral Owner State	API No.
---------------------	---------------------	---------

**LOCATION OF RELEASE**

Unit Letter E	Section 18	Township 23 S	Range 30 E	Feet from the 2100	North/South Line North	Feet from the 615	East/West Line West	County Eddy
------------------	---------------	------------------	---------------	-----------------------	---------------------------	----------------------	------------------------	----------------

Latitude 32.306495° Longitude 1103.927575°

**NATURE OF RELEASE**

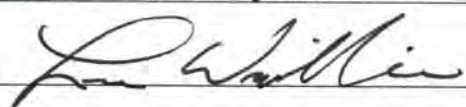
Type of Release Oil	Volume of Release 124.71 barrels	Volume Recovered 121 barrels
Source of Release Pop off tank	Date and Hour of Occurrence 10-27-16 9:00pm	Date and Hour of Discovery 10-28-16 7:30am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Shelly Tucker BLM and Heather Patterson NMOCD	
By Whom?	Date and Hour 10-28-16 11:00am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Rod between float and oil dump broke causing FWKO to dome out and overflow 210 pop off tank. Cleaned up all oil possible and pumped into spare water tank to be circulated through system.

Describe Area Affected and Cleanup Action Taken.\*  
Soil samples were collected at 12 locations (DP-1 through DP-12 with direct push technology. Lateral and vertical extent of impact was defined and delineation report was submitted to OCD and SLO on June 30, 2017 and approved on July 27, 2017. Remediation was performed between August 10 – 23, 2017, and included removal of soil to a depth of 18 inches over the spill area, additional soil removal to about 5 feet (S-15) and 12 feet (DP-6) below ground surface (bgs). Confirmation samples were collected from the excavation bottom and from the sidewalls of deeper (5 and 12 foot deep) excavations. Chloride was delineated vertically to below 600 mg/Kg in soil samples from 3 air rotary drilled borings drilled between 20 and 30 feet bgs. Approximately 805.82 tons/cubic yards of contaminated soil was hauled and disposed at Lea Land Landfill, LLC. Excavation backfilling was approved by OCD on August 18, 2017. The excavations were backfilled with caliche on August 21 – 23, 2017.

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

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Luke Williams	Approved by Environmental Specialist:	
Title: EHS Coordinator	Approval Date:	Expiration Date:
E-mail Address: luke_williams@xtoenergy.com	Conditions of Approval: 2RP-3976	Attached <input type="checkbox"/>
Date: August 24, 2017	Phone: (432) 682-8873	

\* Attach Additional Sheets If Necessary

**2RP-3976**  
**Remediation Report**  
**Nash Draw Tank Battery #42 CTB Crude Oil Spill**  
**Eddy County, New Mexico**

LAI Project No. 17-0124-02

August 24, 2017

Prepared for:

XTO Energy, Inc.

500 W. Illinois Ave., Suite 100

Midland, Texas 79707

Prepared by:

Larson & Associates, Inc.

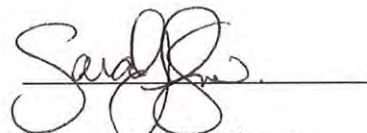
507 North Marienfeld Street, Suite 205

Midland, Texas 79701



Mark J. Larson, P.G.

Certified Professional Geologist #10490



Sarah R. Johnson

Staff Geologist

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**Table of Contents**

1.0 INTRODUCTION.....1

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    1.3 Recommended Remediation Action Levels ..... 2

2.0 SPILL DELINEATION ..... 2

3.0 SPILL REMEDIATION ..... 3

4.0 CONCLUSIONS.....3

**Tables**

Table 1	Assessment Soil Sample Analytical Data Summary
Table 2	Confirmation Soil Sample Analytical Data Summary

**Figures**

Figure 1	Topographic Map
Figure 2	Aerial Map
Figure 3	Site Map Showing Excavations and Depths

**Appendices**

Appendix A	OCD Approval
Appendix B	Laboratory Reports
Appendix C	Waste Manifests
Appendix D	Photographs
Appendix E	Initial and Final C-141

## 1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this remediation report on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) District 2, in Artesia, New Mexico and New Mexico State Land Office (SLO), to document remediation of a crude oil spill at the Nash Draw 42 Consolidated Tank Battery (Site). The legal description is Unit E (SW/4, NW/4), Section 18, Township 23 South, Range 30 East, in Eddy County, New Mexico. The geodetic position is North 32° 18' 23.14277" and West 103° 55' 29.89976". Figure 1 presents a topographic map. Figure 2 presents a detailed aerial map.

### 1.1 Background

On October 27, 2016, XTO reported a crude oil spill after a rod line failed at the free water knockout (FWKO) causing the FWKO to dome out and a 210 barrel (bbl) tank to overflow. Approximately 124.7 bbl of crude oil was released with approximately 121 bbl recovered. XTO personnel discovered the release on October 28, 2016. Verbal notification was provided to the OCD District 2 and BLM, on October 28, 2016. It was later determined the surface ownership was State of New Mexico rather than BLM therefore the SLO was notified. The initial C-141 was submitted on November 3, 2016 and approved by OCD District 2 on November 4, 2016, and was assigned remediation permit number 2RP-3976 with conditions.

The spill occurred in an unlined area west of the lined tank battery where the firewall was removed. The spill covered the unlined area and flowed west into the lined containment of the tank battery which was covered with a later of pea sized gravel. XTO contracted a roust-a-bout crew and hydrovac truck to remove oil contaminated pea sized gravel. The liner was pressure washed and inspected for integrity. The contaminated pea gravel was disposed at an OCD approved landfill. The wash water was recovered using the hydrovac truck and disposed in an OCD permitted Class II disposal well. The liner within the tank battery containment was not deteriorated and had a few small holes.

### 1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,020 feet above mean sea level (AMSL);
- Topography slopes toward the south-southeast;
- The nearest surface water feature is a playa lake (Salt Lake) located about 0.75 miles northwest of the Site;
- Surface geology is comprised of unconsolidated Holocene to mid-Pleistocene-age eolian and piedmont-slope deposits that are approximately 80 feet thick according to a log from a nearby well;

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- The Triassic-age Chinle formation of the Dockum group underlies the unconsolidated deposits and is comprised of interbedded sand, clay, and mudstone;
- According to New Mexico Office of the State Engineer (NMOSE) records a well is located about 1.5 miles south in Unit J, Section 24, Township 23 South, Range 29 East with groundwater reported at about 54 feet below ground surface (bgs).

### 1.3 Recommended Remediation Action Levels

Recommended remediation action levels (RRCL) were calculated for benzene, BTEX and TPH based on the following criteria by the OCD in "Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993":

Criteria	Result	Score
Depth-to-Groundwater	50 - 99 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1,000 Horizontal Feet	0

The following RRAL apply to the release for ranking score: 10

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

## 2.0 SPILL DELINEATION

On March 13 – 14, 2017, LAI personnel used direct push technology (DPT) to collect soil samples at twelve (12) locations (DP-1 through DP-12). Soil samples were collected in one foot increments (i.e., 0 to 1, 1 to 2, 2 to 3 feet, etc.) to approximately one (1) foot bgs at location DP-1, 2 feet bgs at locations DP-5 and DP-9, six (6) feet bgs at locations DP-2, DP-4, DP-8, and DP-11, seven (7) feet bgs at location DP-6 and eight (8) feet bgs at locations DP-3, DP-7, DP-10 and DP-12. The samples were screened for organic vapors using the ambient temperature headspace method and reported vapor concentrations above 100 parts per million (ppm) in the following samples:

- DP-2, 0 to 1 foot (1,380 ppm)
- DP-2, 1 to 2 feet (232.3 ppm)
- DP-3, 0 to 1 foot (1,236 ppm)
- DP-3, 3 to 4 feet (141.3 ppm)
- DP-3, 4 to 5 feet (198.3 ppm)
- DP-3, 7 to 8 feet (231.2 ppm)
- DP-3, 4 to 5 feet (198.3 ppm)
- DP-4, 0 to 1 foot (1,250 ppm)
- DP-6, 2 to 3 feet (1,622 ppm)
- DP-6, 3 to 4 feet (1,328 ppm)
- DP-6, 4 to 5 feet (841.9 ppm)
- DP-8, 0 to 1 foot (1,104 ppm)
- DP-8, 1 to 2 feet (1,334 ppm)
- DP-8, 2 to 3 feet (115.8 ppm)
- DP-10, 0 to 1 foot (116.7 ppm)
- DP-10, 1 to 2 feet (590.5 ppm)

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- DP-4, 1 to 2 feet (118.6 ppm)
- DP-6, 0 to 1 foot (1,155 ppm)
- DP-6, 1 to 2 feet (1,836 ppm)
- DP-10, 4 to 5 feet (367.4 ppm)
- DP-11, 5 to 6 feet (101.3 ppm)
- DP-12, 7 to 8 feet (103 ppm)

Laboratory samples were collected in 4 ounce jars that were hand delivered under preservation and chain of custody to Permian Basin Environmental Laboratory (PBEL), a National Laboratory Accreditation Program (NELAP) certified laboratory, located in Midland, Texas. PBEL analyzed samples exhibiting headspace readings above 100 ppm for benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA SW-846 Method 8021B. The laboratory analyzed samples for total petroleum hydrocarbons (TPH) by SW-846 Method 8015M, including gasoline range organics, diesel range organics and oil range organics and chloride by Method 300. Table 1 presents the delineation soil sample analytical data summary. Figure 3 present the DPT sample locations and approximate spill area.

Benzene exceeded the RRAL (10 mg/Kg) in soil samples DP-6, 1 to 2 feet (18.9 mg/Kg). BTEX exceeded the RRAL (50 mg/Kg) in soil samples DP-2, 0 to 1 foot (147.75 mg/Kg), DP-3, 0 to 1 foot (140.53 mg/Kg), DP-6, 0 to 1 foot (230.27 mg/Kg), DP-6, 1 to 2 feet (439.6 mg/Kg), DP-6, 2 to 3 feet (254.36 mg/Kg) and DP-8, 0 to 1 foot (110.56 mg/Kg). TPH exceeded the RRAL (1,000 mg/Kg) in the following soil samples:

- DP-2, 0 to 1 foot (25,400 mg/Kg)
- DP-3, 0 to 1 foot (17,800 mg/Kg)
- DP-4, 0 to 1 foot (6,900 mg/Kg)
- DP-6, 0 to 1 foot (31,700 mg/Kg)
- DP-6, 1 to 2 feet (30,800 mg/Kg)
- DP-6, 2 to 3 feet (25,100 mg/Kg)
- DP-6, 3 to 4 feet (3,720 mg/Kg)
- DP-7, 0 to 1 foot (4,160 mg/Kg)
- DP-8, 0 to 1 foot (23,100 mg/Kg)
- DP-8, 1 to 2 feet (21,300 mg/Kg)
- DP-10, 0 to 1 foot (37,000 mg/Kg)

The delineation report was submitted to the OCD on May 23, 2017 and later revised (July 28, 2017) to include remediation for a produced water spill that occurred on June 14, 2017 (1RP-4235).

### 3.0 SPILL REMEDIATION

On July 27, 2017, OCD District 2 approved the remediation plan for 2RP-3976 and 2RP-4253 (Appendix A). On August 8 – 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO removed the gun barrel and overflow tanks. Scarborough Drilling, Inc. (SDI) mobilized an air rotary rig immediately following removal of the tanks and used a jam tube sampler to collect soil samples for chloride delineation at DP-11, as requested by OCD District 2. Soil samples were collected every 5 feet (5, 10, 15, 20 feet etc.) to approximately 30 feet bgs. PBEL analyzed the samples for chloride by EPA Method 300 and reported chloride below 600



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mg/Kg in all samples. The poly liner was removed from the remediation area. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area measuring approximately 3,978 square feet was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner. The area around the gun barrel tank (S-15) was excavated to about 5 feet bgs. Additional soil was excavated near DP-8 and near the southwest corner of the excavation (S-14) to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the north of DP-12 where the recent produced water spill (2RP-4253) had encroached.

On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where soil was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by EPA SW-846 Methods 8021B (BTEX) 8015 (TPH) including GRO, DRO and ORO and chloride by Method 300.

The Laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

- S-5, 5.0' – 5.5' (5,450 mg/Kg)
- S-6, 4.5' – 5.0' (9,780 mg/Kg)
- S-10, 1.5' – 2.0' (3,953 mg/Kg)
- S-14 1.5' – 2.0' (1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

- S-5, 2' East (3,580 mg/Kg)
- S-6, 4' North (1,310 mg/Kg)
- S-6, 2' South (18,450 mg/Kg)
- S-6, 2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

- S-13, 1.5' – 2.0' (8,210 mg/Kg)
- S-14, 1.5' – 2.0' (1,050 mg/Kg)
- S-16, 0.5' – 1.0' (3,810 mg/Kg)

Additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom (5.0' – 5.5') at S-14.

On August 14, 2017, SDI collected samples for chloride delineation at locations S-13 and S-16. Soil samples were collected every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet bgs at S-13 and to 20 feet bgs at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Approximately 805.82 tons/ cubic yards of soil was excavated and hauled to Lea Land Landfill, LLC. Clean caliche was hauled back from Lea Land for backfilling the excavation. On August 18, 2017, OCD District 2 approved backfilling the excavation which occurred between August 21 – 23, 2017. Table 2 presents the confirmation soil sample analytical data summary. Figure 3 presents the excavation and confirmation sample location map. Appendix A presents OCD correspondence. Appendix B presents the

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laboratory reports. Appendix C presents the waste manifests. Appendix D presents photographs. Appendix E presents the initial and final C-141.

## **4.0 CONCLUSIONS**

XTO performed soil remediation according to the remediation plan approved by OCD District 2, on July 27, 2017 and XTO requests no further action for 2RP-3976.

**Tables**

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)		BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
					10	50						
<b>OCD RRAL:</b>												
DP-1	0 - 1	03/14/2017	In-situ	1.8	--	--	--	<27.5	<27.5	<27.5	<27.5	17.4
DP-2	0 - 1	03/14/2017	In-situ	1,380	4.75	<b>147.75</b>	5,730	16,900	2,760	<b>25,400</b>	62.9	
	1 - 2	03/14/2017	In-situ	232.3	0.00702	0.1863	72.9	614	102	788.9	53.9	
	2 - 3	03/14/2017	In-situ	16.3	--	--	<28.7	<28.7	<28.7	<28.7	33.9	
	3 - 4	03/14/2017	In-situ	2.9	--	--	--	--	--	--	--	
	4 - 5	03/14/2017	In-situ	1.8	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	1.8	<0.00116	<0.00794	<29.1	<29.1	<29.1	<29.1	<29.1	<1.16
DP-3	0 - 1	03/14/2017	In-situ	1,236	5.23	<b>140.53</b>	5,380	10,800	1,650	<b>17,800</b>	10.5	
	1 - 2	03/14/2017	In-situ	90.2	0.0127	0.1708	<30.1	112	<30.1	112	11.6	
	2 - 3	03/14/2017	In-situ	29.2	--	--	<29.4	<29.4	<29.4	<29.4	12.4	
	3 - 4	03/14/2017	In-situ	141.3	--	--	<29.1	<29.1	<29.1	<29.1	9.45	
	4 - 5	03/14/2017	In-situ	198.3	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	13.6	--	--	--	--	--	--	--	
	6 - 7	03/14/2017	In-situ	25	--	--	--	--	--	--	--	
	7 - 8	03/14/2017	In-situ	231.2	<0.00116	<0.00794	<29.1	<29.1	<29.1	<29.1	<29.1	8.31
DP-4	0 - 1	03/14/2017	In-situ	1,250	0.807	10.86	999	5,060	844	<b>6,900</b>	43.4	
	1 - 2	03/14/2017	In-situ	118.6	0.0056	0.0056	<29.8	<29.8	<29.8	<29.8	33.9	
	2 - 3	03/14/2017	In-situ	39.4	--	--	<28.4	<28.4	<28.4	<28.4	22.1	
	3 - 4	03/14/2017	In-situ	12.5	--	--	--	--	--	--	--	
	4 - 5	03/14/2017	In-situ	26.8	--	--	--	--	--	--	--	
	5 - 6	03/14/2017	In-situ	53.5	<0.00112	<0.00786	<28.1	<28.1	<28.1	<28.1	106	
DP-5	0 - 1	03/14/2017	In-situ	2.2	--	--	<27.5	<27.5	<27.5	<27.5	12.5	

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 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)		BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
					10	50						
<b>OCD RRAL:</b>												
	1 - 2	03/14/2017	In-situ	3.7	--	--	--	<27.8	<27.8	<27.8	1,000	*250
<b>DP-6</b>	0 - 1	03/13/2017	In-situ	1,155	8.87	230.27	7,900	20,400	3,330	31,700	145	9.41
	1 - 2	03/13/2017	In-situ	1,836	18.9	439.6	12,800	15,200	2,780	30,800	9.57	
	2 - 3	03/13/2017	In-situ	1,622	9.16	254.36	10,500	12,300	2,240	25,100	9.72	
	3 - 4	03/13/2017	In-situ	1,328	0.54	19.414	1,160	2,210	358	3,720	8.75	
	4 - 5	03/13/2017	In-situ	841.9	<0.00115	0.05052	95.2	363	60.2	518.4	8.86	
	5 - 6	03/13/2017	In-situ	11.5	<0.00115	<0.04945	<28.7	129	47.3	176.3	<1.16	
	6 - 7	03/13/2017	In-situ	54	<0.00114	<0.00796	<28.4	<28.4	<28.4	<28.4	<1.14	
<b>DP-7</b>	0 - 1	03/13/2017	In-situ	4.1	--	--	239	3,300	625	4,160	22.4	
	1 - 2	03/13/2017	In-situ	1.9	--	--	<29.1	78.8	<29.1	78.8	19.3	
	2 - 3	03/13/2017	In-situ	1.9	--	--	--	--	--	--	--	
	3 - 4	03/13/2017	In-situ	4.2	--	--	--	--	--	--	--	
	4 - 5	03/13/2017	In-situ	4.7	--	--	--	--	--	--	--	
	5 - 6	03/13/2017	In-situ	12.2	--	--	--	--	--	--	--	
	6 - 7	03/13/2017	In-situ	5.6	--	--	--	--	--	--	--	
	7 - 8	03/13/2017	In-situ	39.5	<0.00111	<0.00777	<27.8	<27.8	<27.8	<27.8	<27.8	137
<b>DP-8</b>	0 - 1	03/13/2017	In-situ	1,104	4.16	110.56	7,320	13,600	2,190	23,100	32.1	
	1 - 2	03/13/2017	In-situ	1,334	1.42	28.47	8,260	11,100	1,910	21,300	13.5	
	2 - 3	03/13/2017	In-situ	115.8	--	--	38	238	58	334	6.29	
	3 - 4	03/13/2017	In-situ	43.1	--	--	--	--	--	--	--	
	4 - 5	03/13/2017	In-situ	86.2	--	--	--	--	--	--	--	
	5 - 6	03/13/2017	In-situ	8.5	<0.00111	<0.00777	<27.8	<27.8	<27.8	<27.8	<27.8	<1.11

**Table 1**  
**2RP-3976**  
**Assessment Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill**  
**UL N (SE/4, SW/4), S-8, T-26 South, R-31 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)		BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
					10	50						
<b>OCD RRAL:</b>												
DP-9	0 - 1	03/13/2017	In-situ	5.6	--	--	--	<27.2	<27.2	<27.2	<27.2	16.0
	1 - 2	03/13/2017	In-situ	4.5	--	--	--	<28.1	<28.1	<28.1	<28.1	9.15
DP-10	0 - 1	03/13/2017	In-situ	116.7	1.53	49.730	49.730	10,400	22,900	3,720	37,000	7.34
	1 - 2	03/13/2017	In-situ	590.5	0.195	4.571	4.571	152	531	<144	683	7.48
	2 - 3	03/13/2017	In-situ	48.7	--	--	--	<29.4	<29.4	<29.4	<29.4	5.28
	3 - 4	03/13/2017	In-situ	24	--	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	367.4	--	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	12.7	--	--	--	--	--	--	--	--
	6 - 7	03/13/2017	In-situ	20.3	--	--	--	--	--	--	--	--
	7 - 8	03/13/2017	In-situ	3.4	<0.00111	<0.00777	<0.00777	44.5	<27.8	<27.8	44.5	174
DP-11	0 - 1	03/13/2017	In-situ	11.2	--	--	--	<27.8	<27.8	<27.8	<27.8	14.8
	1 - 2	03/13/2017	In-situ	6.4	--	--	--	<29.4	<29.4	<29.4	<29.4	162
	2 - 3	03/13/2017	In-situ	6.4	--	--	--	--	--	--	--	--
	3 - 4	03/13/2017	In-situ	1.8	--	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	4.2	--	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	101.3	--	--	--	<27.8	156	50.3	206.3	702
DP-12	0 - 1	03/13/2017	In-situ	2.5	--	--	--	<27.2	122	45.1	167.1	104
	1 - 2	03/13/2017	In-situ	4.7	--	--	--	<28.1	49.1	<28.1	49.1	145
	2 - 3	03/13/2017	In-situ	21.9	--	--	--	--	--	--	--	--
	3 - 4	03/13/2017	In-situ	15.2	--	--	--	--	--	--	--	--
	4 - 5	03/13/2017	In-situ	7	--	--	--	--	--	--	--	--
	5 - 6	03/13/2017	In-situ	4.9	--	--	--	--	--	--	--	--
	6 - 7	03/13/2017	In-situ	27.6	--	--	--	--	--	--	--	--

Table 1  
 2RP-3976  
 Assessment Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Crude Oil Spill  
 UL N (SE/4, SW/4), S-8, T-26 South, R-31 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Sample	Depth (Feet)	Collection Date	Status	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
<b>OCD RRAL:</b>											
	7 - 8	03/13/2017	In-situ	103	<0.00112	<0.0079	<28.1	<28.1	<28.1	1,000	*250
										<28.1	72.7

Notes: analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8021B (BTEX) and 8015M (TPH)  
 Depth in inches below ground surface (bgs)  
 mg/kg: milligrams per kilogram equivalent to parts per million (ppm)  
 \*: OCD delineation limit  
 P: Laboratory results pending

**Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)**

**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 1 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)		BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
					10	50						
<b>OCD RRAL:</b>												
<b>S-1</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0244	<0.1708	<30.5	<30.5	<30.5	<30.5	<30.5	62.7
<b>S-2</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0241	<0.1687	<30.1	57.4	57.4	<30.1	57.4	103
<b>S-3</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1047	<29.4	<29.4	<29.4	<29.4	<29.4	13.7
<b>S-4</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0230	<0.161	<28.7	<28.7	<28.7	<28.7	<28.7	<1.15
<b>S-5</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	0.0664	13.7464	755	3,970	720	720	<b>5,450</b>	147
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<28.7	209	84.9	84.9	293.9	19.3
	2	08/14/2017	Side (N)	In-situ	--	--	43.1	764	152	152	959.1	48.0
	2	08/14/2017	Side (S)	In-situ	--	--	<27.2	<27.2	<27.2	<27.2	<27.2	<1.09
	*2	08/14/2017	Side (E)	Excavated	--	--	356	2,700	524	524	<b>3,580</b>	161
	2	08/14/2017	Side (W)	In-situ	--	--	<30.1	66.2	<30.1	<30.1	<b>66.2</b>	16.8
<b>S-6</b>	4.5 - 5.0	08/11/2017	Bottom	Excavated	0.199	9.889	2,850	5,710	1,210	1,210	<b>9,780</b>	<1.14
	12.0 - 12.5	08/14/2017	Bottom	In-situ	--	--	<28.1	200	36.5	36.5	236.5	35.2
	2	08/11/2017	Side (N)	In-situ	<0.0244	<0.1708	<30.5	131	38.8	38.8	169.8	<1.22
	4	08/14/2017	Side (N)	Excavated	--	--	246	906	160	160	<b>1,310</b>	30.3
	4	08/16/2017	Side (N)	In-situ	--	--	<26.9	<26.9	<26.9	<26.9	<26.9	20.2
	8	08/14/2017	Side (N)	In-situ	--	--	<29.8	<29.8	<29.8	<29.8	<29.8	20.1
	2	08/11/2017	Side (S)	Excavated	0.388	36.718	4,770	11,400	2,280	2,280	<b>18,450</b>	102
	4	08/14/2017	Side (S)	In-situ	--	--	<28.1	<28.1	<28.1	<28.1	<28.1	61.5
	8	08/14/2017	Side (S)	In-situ	--	--	<27.8	<27.8	<27.8	<27.8	<27.8	954
	*2	08/11/2017	Side (W)	In-situ	<0.0227	<0.1591	42.7	534	122	122	<b>698.7</b>	15.0



**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 2 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)			BTEX (mg/Kg)			GRO (mg/Kg)			DRO (mg/Kg)			ORO (mg/Kg)			TPH (mg/Kg)			Chloride (mg/Kg)					
					10	50	1,000	10	50	1,000	10	50	1,000	10	50	1,000	10	50	1,000	10	50	1,000	10	50	1,000			
<b>OCD RRAL:</b>																												
	4	08/14/2017	Side (W)	In-situ	--	--	<28.7	281	48.5	329.5	21.6																	
	8	08/14/2017	Side (W)	In-situ	--	--	<28.7	61.4	<28.7	61.4	18.1																	
	2	08/11/2017	Side (E)	Excavated	<0.0244	0.9416	358	1,830	370	<b>2,558</b>	780																	
	4	08/14/2017	Side (E)	In-situ	--	--	<26.9	<26.9	<26.9	<26.9	13.8																	
	8	08/14/2017	Side (E)	In-situ	--	--	<27.2	<27.2	<27.2	<27.2	43.8																	
<b>S-7</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0227	.0568	<28.4	390	76.3	466.3	152																	
<b>S-8</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0227	<0.1591	<28.4	66.8	<28.4	66.8	13.7																	
<b>S-9</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0230	<0.161	<28.7	<28.7	<28.7	<28.7	<1.15																	
<b>S-10</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	<0.0230	2.525	586	2,900	467	<b>3,953</b>	629																	
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<27.5	177	32.1	209.1	4.88																	
	2	08/14/2017	Side (N)	In-situ	--	--	<29.1	<29.1	<29.1	<29.1	99.7																	
	2	08/14/2017	Side (S)	In-situ	--	--	33.2	553	95.2	681.4	68.4																	
	2	08/14/2017	Side (E)	In-situ	--	--	<28.7	92.9	<28.7	92.9	79.3																	
<b>S-11</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0238	<0.1666	<29.8	42.9	<29.8	42.9	53.3																	
<b>S-12</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1047	<29.4	50.4	<29.4	50.4	459																	
<b>S-13</b>	1.5 - 2.0	08/11/2017	Bottom	In-situ	<0.0233	<0.1629	<29.1	114	<29.4	114	8,210																	

**Table 2**  
**2RP-3976 and 2RP-4253**  
**Remediation Soil Sample Analytical Data Summary**  
**XTO Energy, Inc., Nash Draw #42 CTB Spills**  
**UL E (SW/4, NW/4), S-18, T-23 South, R-30 East**  
**N32° 18' 23.14277" W103° 55' 29.89976"**  
**Eddy County, New Mexico**

Page 3 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	10			50			1,000		
					Benzene (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)		
<b>OCD RRAL:</b>													
	5 - 6	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	169
	10 - 11	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	290
	15 - 16	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	520
	20 - 21	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	64.3
	25 - 26	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	21.2
	30 - 31	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	--	--	26.1
<b>S-14</b>	1.5 - 2.0	08/11/2017	Bottom	Excavated	<0.0225	<0.1573	44.7	1,270	284	1,598.7	1,050		
	5.0 - 5.5	08/14/2017	Bottom	In-situ	--	--	<30.9	<30.9	<30.9	<30.9	247		
	2	08/14/2017	Side (N)	In-situ	--	--	<28.1	<28.1	<28.1	<28.1	105		
	2	08/14/2017	Side (S)	In-situ	--	--	<31.2	<31.2	<31.2	<31.2	192		
	2	08/14/2017	Side (E)	In-situ	--	--	<30.5	<30.5	<30.5	<30.5	139		
	2	08/14/2017	Side (W)	In-situ	--	--	<29.1	<29.1	<29.1	<29.1	412		
<b>S-15</b>	4.5 - 5.0	08/11/2017	Bottom	In-situ	<0.0235	<0.1647	<29.4	<29.4	<29.4	<29.4	34.5		
	2	08/11/2017	Side (North)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	14.2		
	2	08/11/2017	Side (South)	In-situ	<0.0238	<0.1666	<29.8	<29.8	<29.8	<29.8	5.11		
	2	08/11/2017	Side (West)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	112		
	2	08/11/2017	Side (East)	In-situ	<0.0227	<0.1591	<28.4	<28.4	<28.4	<28.4	11.4		
	0.5 - 1.0	08/11/2017	Bottom	In-situ	<0.0213	<0.1278	<26.6	<26.6	<26.6	<26.6	3,810		
<b>S-16</b>	5 - 6	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	70.7		
	10 - 11	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	95.2		
	15 - 16	08/14/2017	Bottom	In-situ	--	--	--	--	--	--	413		

Table 2  
 2RP-3976 and 2RP-4253  
 Remediation Soil Sample Analytical Data Summary  
 XTO Energy, Inc., Nash Draw #42 CTB Spills  
 UL E (SW/4, NW/4), S-18, T-23 South, R-30 East  
 N32° 18' 23.14277" W103° 55' 29.89976"  
 Eddy County, New Mexico

Page 4 of 4

Sample	Depth (Feet)	Collection Date	Position	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
<b>OCD RRAL:</b>											
	20 - 21	08/14/2017	Bottom	In-situ	10	50				1,000	**600
					--	--	--	--	--	--	63.8

Notes: analysis by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 Method 8021B (BTEX), Method 8015M (TPH) and Method 300 (chloride)

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

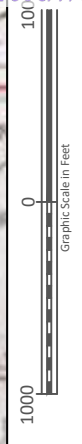
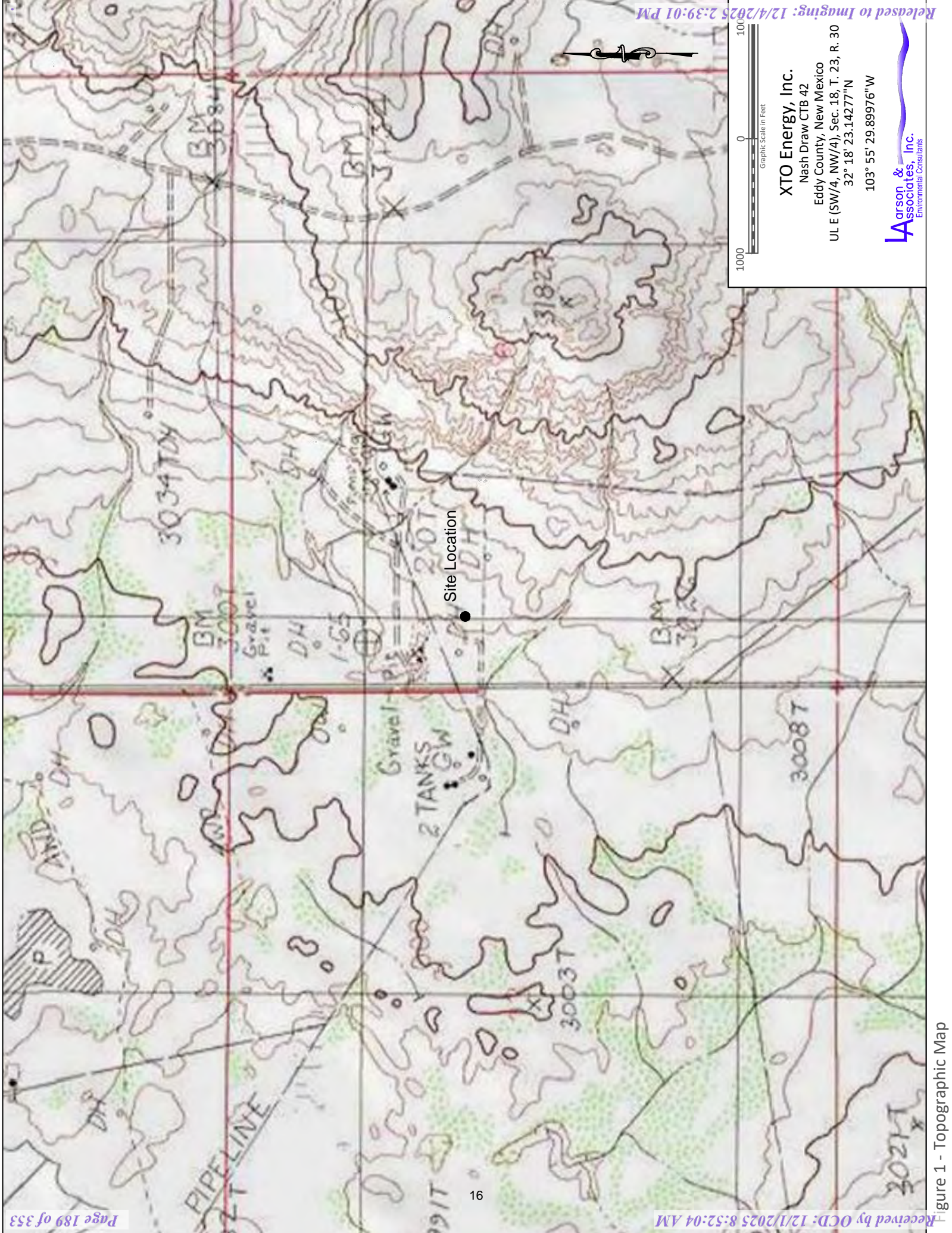
\* East side of excavation (S-5) joined to west side of adjoining excavation (S-6)

\*\* : OCD delineation limit

P Laboratory analysis pending

**Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)**

**Figures**



**XTO Energy, Inc.**  
 Nash Draw CTB 42  
 Eddy County, New Mexico  
 U1 E (SW/4, NW/4), Sec. 18, T. 23, R. 30  
 32° 18' 23.14277"N  
 103° 55' 29.89976"W



Figure 1 - Topographic Map



Released to Imaging: 12/4/2025 2:39:01 PM

Graphic Scale in Feet  
 0 30  
 30

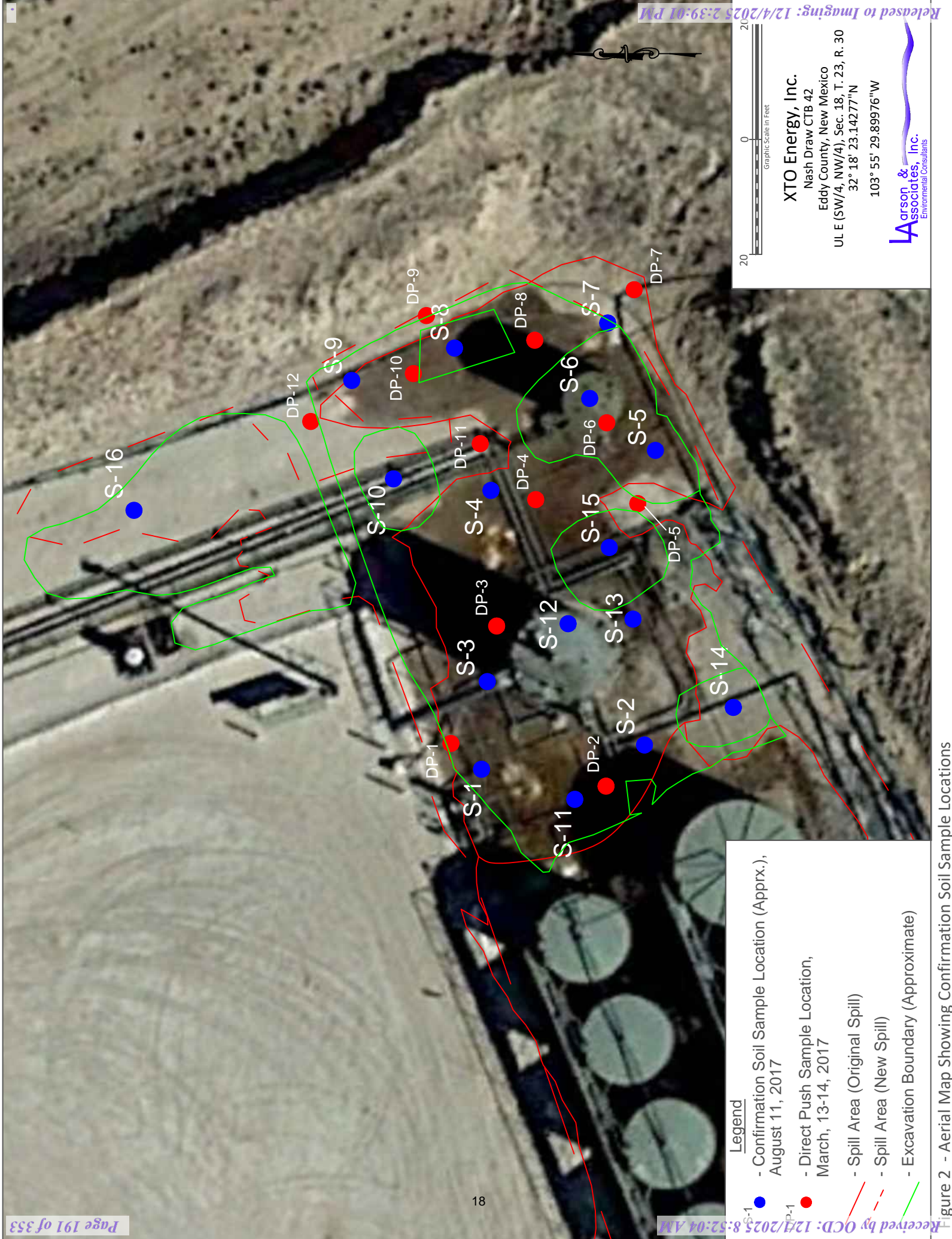
**XTO Energy, Inc.**  
 Nash Draw CTB 42  
 Eddy County, New Mexico  
 ULE (SW/4, NW/4), Sec. 18, T. 23, R. 30  
 32° 18' 23.14277"N  
 103° 55' 29.89976"W

**Larson & Associates, Inc.**  
 Environmental Consultants

**Legend**

- - Direct Push Sample Location, March, 13-14, 2017
- - Spill Area

Figure 2 - Site Map Showing Direct Push Sample Locations



**Legend**

- - Confirmation Soil Sample Location (Apprx.), August 11, 2017
- - Direct Push Sample Location, March, 13-14, 2017
- - Spill Area (Original Spill)
- - Spill Area (New Spill)
- - Excavation Boundary (Approximate)

**XTO Energy, Inc.**  
 Nash Draw CTB 42  
 Eddy County, New Mexico  
 ULE (SW/4, NW/4), Sec. 18, T. 23, R. 30  
 32° 18' 23.14277"N  
 103° 55' 29.89976"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Graphic Scale in Feet  
 0 20

Figure 2 - Aerial Map Showing Confirmation Soil Sample Locations

**Appendix A**

**OCD Approval**



**From:** [Mark Larson](#)  
**To:** [Sarah Johnson](#)  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017  
**Date:** Tuesday, August 22, 2017 8:03:50 AM  
**Attachments:** [Location Drawing for Berm.pdf](#)

---

Sarah,

Good morning! Here's the approval for backfilling the excavations. The attached drawing shows the location for the new berm on the north side of the excavation. Please have SDR build a berm from caliche to the same height as the existing berm on the north side of the tanks. Have SDR tie the west end of the berm into the berm on the north side of the tanks and on the east end where the berm turns north (east of DP-1). Please call me if you have questions.

Mark

---

**From:** Bratcher, Mike, EMNRD [mailto:mike.bratcher@state.nm.us]  
**Sent:** Friday, August 18, 2017 4:39 PM  
**To:** Mark Larson; Weaver, Crystal, EMNRD; 'Groves, Amber'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

RE: **2RP-3976 & 2RP-4235**

-

Mark,

Based on data provided, you are approved to commence backfill operations. Sorry for a perceived delayed response, but if we actually worked everything in the order received, it would be at least a few weeks before you got a response. We do appreciate the thorough job and uncomplicated reporting you provide, along with XTO's willingness and cooperation in maintaining an environmentally solid operation. I do understand the urgency for this particular project and apologize for any inconvenience.

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Friday, August 18, 2017 8:27 AM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; 'Groves, Amber' <agroves@slo.state.nm.us>

**Cc:** 'McMinn, Dudley' <Dudley\_McMinn@xtoenergy.com>; 'Williams, Luke' <Luke\_Williams@xtoenergy.com>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Mike,

This summary is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of XTO Energy Inc. (XTO) to present the delineation and remediation of two (2) spills (2RP-3976 and 2RP-4253) at the Nash Draw CTB #42. LAI requests approval to backfill the excavations so that XTO may install a spray-in liner and resume production. The final reports for 2RP-3976 and 2RP-4253 will be submitted after the excavations area backfilled along with the final C-141s.

On August 8 - 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO had the gun barrel and overflow tanks removed from the remediation area. Immediately following removal of the tanks, Scarborough Drilling mobilized an air rotary rig to DP-11 for the purpose of delineating chloride as requested by OCD. Soil samples were collected with a jam tube sampler at 10, 15, 20, 25 and 30 feet below ground surface (bgs) and were analyzed for chloride by EPA Method 300. Chloride was below 250 mg/Kg in all samples concluding successful vertical delineation. The ploy liner was removed from the remediation area and disposed at Lea Land Landfill. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Additional soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner and from areas beneath the tanks and where staining was observed beneath the liner. The area around DP-8 was excavated to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the area north of DP-12 where the recent produced water spill (2RP-4253) had encroached. On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by Methods SW-846=8021B, SW-846-8015M and 300, respectively.

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

- S-5, 5.0' – 5.5' (5,450 mg/Kg)
- S-6, 4.5' – 5.0' (9,780 mg/Kg)
- S-10, 1.5' – 2.0' (3,953 mg/Kg)
- S-14, 1.5' – 2.0'(1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

- S-5, 2' East (3,580 mg/Kg)
- S-6, 4' North (1,310 mg/Kg)
- S-6, 2' South (18,450 mg/Kg)
- S-6,2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

S-13, 1.5' – 2.0' (8,210 mg/Kg)  
S-14, 1.5' – 2.0' (1,050 mg/Kg)  
S-16, 0.5' – 1.0' (3,810 mg/Kg)

Between August 14 – 16, 2017, additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom sample (5.0' – 5.5') at S-14. Scarborough Drilling collected samples every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet at S-13 and 20 feet at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Please refer to Table 2. The excavation and sample location drawing is presented as Figure 2. Photographs are attached. Approximately 525.5 tons/cubic yards of contaminated soil was hauled to Le Land Landfill, LLC. Clean caliche was hauled back from Le Land for backfilling the excavations. LAI, on behalf of XTO, requests OCD approval to backfill the excavations so that XTO may begin installing the spray-in liner and resume production. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



*“Serving the Permian Basin Since 2000”*

---

**From:** Mark Larson  
**Sent:** Wednesday, August 09, 2017 7:01 PM  
**To:** 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The tanks (gun barrel and overflow) were emptied today and will be removed on Thursday morning to allow access for equipment to perform remediation. We plan to collect additional samples tomorrow from SB-11 for vertical delineation.

Mark

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Monday, August 07, 2017 9:27 AM  
**To:** Mark Larson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Good morning,

Thank you Mark. I may try to make it out to this one if Amber can not.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Sunday, August 6, 2017 6:58 PM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Amber,  
This is to inform you that remediation of 2RP-3976 and 2RO-4253 will commence on Monday, August 9, 2017. Please contact Dudley McMinn with XTO Energy, Inc., at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456

[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 27, 2017 5:21 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'McMinn, Dudley'; 'Williams, Luke'  
**Cc:** 'Tucker, Shelly'; Groves, Amber  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

First off thank you Mark for your answers to my questions.

I was checking a few clerical details and I wanted to bring a few more things to all of your attention. On the first spill, given case number 2RP-3976, there was no API number provided on the initial C-141 and since it was mentioned that the release was involving a battery our administrative personnel entered this in our system and gave it a facility number instead of relating it to the API for this location. However, on the second spill, given case number 2RP-4253, an API number was provided on the initial C-141 so our administrative personnel entered this one into our system under the API number. So now we have records for two spills recorded in two different places in our system that in fact actually happened at this same site. Please try to remain consistent on what you go with for C-141 documentation and of course for any documentation.

Also I show in my records that this site is on State Land Office administered service but when I look back in the well file history for this site I see documents being provided to the BLM for this facility. Since I have this site as SLO land I am adding Amber Groves, from the State Land Office, to this email chain and I am thus requesting that someone please help to clarify this matter. **So Shelly or Amber can you all please clear up who is the surface owner for this location?**

Finally, getting back to Mark's answers to my questions.

OCD accepts your proposal for remediation of the above mentioned releases (2RP-3976 and 2RP-4235) with the following conditions:

- Within the answers provided below it is stated that Larson Associates Inc. on behalf of XTO will be submitting samples for laboratory testing of *“total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples*

*will be collected to delineate chloride to 600 mg/Kg.”* However, OCD notes that testing for BTEX was not mentioned in either of these statements. OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.

- Since the second release spanned beyond the extent of the first release it is OCD's understanding that all impacted areas will be delineated during remedial activities. Excavation depths may vary based on new analytical data.
- Again as mentioned above in bullet point 1, because your response statement below, to my sampling request for areas where there are holes in the liner, does not include the mentioning of sampling for BTEX I want to make it clear that OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- OCD concurs with the answer provided below regarding sampling point DP-11.

Please advise once remedial activities have been scheduled. If this is Federal surface then it will require like approval from BLM, if this is State Land Office surface than it will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## **Crystal Weaver**

Environmental Specialist

OCD – Artesia District II

811 S. 1<sup>st</sup> Street

Artesia, NM 88210

Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

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**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Friday, July 21, 2017 7:24 AM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The following is submitted on behalf of XTO Energy, Inc. (XTO) in response to your questions below:

**Question:** All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?

**Response:** *it is my opinion that the depth of excavation will be similar to what is proposed since the initial spill was mostly crude oil with an small amount of produced water and the recent spill is mostly produced water with a small amount of crude oil. Soil will be excavated until total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg. The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

**Response:** *The area east of the tank battery covered by the initial spill is unlined. The recent spill east of the tank battery occurred the lined area where holes are shown in the liner. Soil samples will be collected from the lined area covered by the spill where holes are observed. The soil samples will be analyzed for TPH as determined by EPA SW-846 Method 8015 for GR, DRO and ORO and chloride by Method 300. Soil will be excavated until TPH in bottom sample and sidewall samples where the excavation exceeds 2 feet is below the RRAL (1,000 mg/Kg). Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

Response: *A backhoe may be used to confirmed the chloride concentration in soil at DP-11, 5 – 6 feet. The sample will be analyzed by Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: also just noticed one last thing, the label on your Table 1 says that the table is for 2RP-1486, is that a typo?

Response: *Good catch! I used an earlier table as a template and didn't change the remediation permit number. Please find the corrected table attached.*

Question: also just noticed one last thing, the remediation permit number you refer to for the recent spill (2RP-4235), is that a typo?

Response: *This remediation permit (2RP-4235) is for a release at the Devon Energy Production Company Cotton Draw Unit 84! It appears the 3 and 5 were juxtaposed and should be 2RP-4253.*

Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
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Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



*“Serving the Permian Basin Since 2000”*



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**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 13, 2017 2:07 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Tucker, Shelly'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Thank you for the submission of this most recent plan and for the submission of the prior one as well.

OCD is fine with the idea of remediating both spills at the same time while you have equipment and workers mobilized, etc. and we are fine with both releases being written about in the same work plan and closure report etc., however, the spills will still be treated as separate cases as far as each will be referred to by its individual tracking number and DOR, and each will have to be closed out on our end as individual incidents. So each will need final C-141s.

With that being said, I have looked things over and I have a few questions for you all:

- All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?
- Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.
- Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

I look forward to receiving a response to my questions/requests.

If you have any need for clarification or have any questions of your own please contact myself or Mike Bratcher here at the District II Office.

Thank you,

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

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**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Monday, July 3, 2017 4:06 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Tucker, Shelly' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** Re: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Mike/Crystal/Shelly,  
Larson & Associates, Inc. (LAI) submits the delineation report and remediation plan for a crude oil spill at the XTO Energy, Inc. (XTO) Nash Draw 42 CTB. Since submitting the plan on May 23, 2017, XTO reported another spill at the facility on June 14, 2017, prior to receiving OCD approval of the remediation plan for the crude oil spill. XTO would like the OCD to consider allowing remediation of both spills under the remediation plan presented herein. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/aac0757d-4e60-4e7d-b88c-f8ac9693cab9>

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
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Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

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**From:** Mark Larson  
**Sent:** Tuesday, May 23, 2017 8:24 AM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** Re: XTO CTB 42 Revised Delineation Report

Mike/Crystal,

Please use the link below to download the revised delineation report for 2RP-3976. The report was revised to include additional photographs for exposing the liner inside the firewall. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/af3a731c-13d6-4830-8201-6944cbd5f9aa>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

**Appendix B**  
**Laboratory Reports**

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Location: New Mexico  
Lab Order Number: 7H12002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/13/17

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 1.5-2'	7H12002-01	Soil	08/11/17 14:45	08-11-2017 20:00
S-2 1.5-2'	7H12002-02	Soil	08/11/17 14:46	08-11-2017 20:00
S-3 1.5-2'	7H12002-03	Soil	08/11/17 14:46	08-11-2017 20:00
S-4 1.5-2'	7H12002-04	Soil	08/11/17 14:50	08-11-2017 20:00
S-5 1.5-2'	7H12002-05	Soil	08/11/17 15:22	08-11-2017 20:00
S-6 4.5-5'	7H12002-06	Soil	08/11/17 15:25	08-11-2017 20:00
S-6 N-2'	7H12002-07	Soil	08/11/17 15:40	08-11-2017 20:00
S-6 S-2'	7H12002-08	Soil	08/11/17 15:44	08-11-2017 20:00
S-6 W-2'	7H12002-09	Soil	08/11/17 15:46	08-11-2017 20:00
S-6 E-2'	7H12002-10	Soil	08/11/17 15:47	08-11-2017 20:00
S-7 1.5-2'	7H12002-11	Soil	08/11/17 14:54	08-11-2017 20:00
S-8 1.5-2'	7H12002-12	Soil	08/11/17 14:57	08-11-2017 20:00
S-9 1.5-2'	7H12002-13	Soil	08/11/17 15:01	08-11-2017 20:00
S-10 1.5-2'	7H12002-14	Soil	08/11/17 15:05	08-11-2017 20:00
S-11 1.5-2'	7H12002-15	Soil	08/11/17 15:08	08-11-2017 20:00
S-12 1.5-2'	7H12002-16	Soil	08/11/17 15:10	08-11-2017 20:00
S-13 1.5-2'	7H12002-17	Soil	08/11/17 15:11	08-11-2017 20:00
S-14 1.5-2'	7H12002-18	Soil	08/11/17 15:13	08-11-2017 20:00
S-15 4.5-5'	7H12002-19	Soil	08/11/17 15:18	08-11-2017 20:00
S-15 N 2'	7H12002-20	Soil	08/11/17 15:36	08-11-2017 20:00
S-15 S 2'	7H12002-21	Soil	08/11/17 15:34	08-11-2017 20:00
S-15 W-2'	7H12002-22	Soil	08/11/17 15:38	08-11-2017 20:00
S-15 E 2'	7H12002-23	Soil	08/11/17 15:39	08-11-2017 20:00
S-16 0.5-1'	7H12002-24	Soil	08/11/17 15:27	08-11-2017 20:00

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-1 1.5-2'**  
**7H12002-01 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		45.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		104 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	30.5	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>18.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		110 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		138 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-2 1.5-2'**  
**7H12002-02 (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	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0482	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0482	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0241	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.7 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		48.8 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	139	30.1	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	17.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	57.4	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>57.4</b>	30.1	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-3 1.5-2'**  
**7H12002-03 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		37.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.4	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		108 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		136 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-4 1.5-2'**  
**7H12002-04 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		41.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.7	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	13.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		135 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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.

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-5 1.5-2'**  
**7H12002-05 (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**

<b>Benzene</b>	<b>0.0664</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>2.25</b>	0.0444	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>2.35</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>5.80</b>	0.0444	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>3.28</b>	0.0222	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		88.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		35.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	27.8	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>10.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>755</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>3970</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>720</b>	139	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		114 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		125 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>5450</b>	139	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 4.5-5'**  
**7H12002-06 (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**

<b>Benzene</b>	<b>0.199</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>2.52</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>1.88</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>4.23</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>1.06</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		35.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		91.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>53.1</b>	28.4	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>2850</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>5710</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>1210</b>	142	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		123 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>9780</b>	142	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 N-2'**  
**7H12002-07 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.9 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	30.5	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	18.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	131	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	38.8	30.5	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		130 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>170</b>	30.5	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 S-2'**  
**7H12002-08 (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**

<b>Benzene</b>	<b>0.338</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>7.71</b>	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>4.30</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>16.1</b>	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>8.27</b>	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		44.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		97.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.1	mg/kg dry	25	P7H1215	08/12/17	08/12/17	EPA 300.0	
% Moisture	<b>11.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>4770</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>11400</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>2280</b>	140	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		103 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		124 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>18400</b>	140	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 W-2'**  
**7H12002-09 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.0959</b>	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0570</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.2 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		94.8 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>42.7</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>534</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>122</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		121 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		145 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>699</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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1400 Rankin HWY Midland, TX 79701 432-686-7235

42

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 E-2'**  
**7H12002-10 (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	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Toluene</b>	<b>0.0707</b>	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Ethylbenzene</b>	<b>0.0959</b>	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (p/m)</b>	<b>0.582</b>	0.0488	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.193</b>	0.0244	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		66.7 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		91.6 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>780</b>	30.5	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>18.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>358</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>1830</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>370</b>	152	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		111 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		128 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>2560</b>	152	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-7 1.5-2'**  
**7H12002-11 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<b>Xylene (o)</b>	<b>0.0568</b>	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		47.7 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		98.8 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>390</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>76.3</b>	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>467</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-8 1.5-2'**  
**7H12002-12 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		102 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		56.8 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	66.8	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		106 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>66.8</b>	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-9 1.5-2'**  
**7H12002-13 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		52.6 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		100 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.7	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	13.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-10 1.5-2'**  
**7H12002-14 (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	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	<b>0.293</b>	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	<b>1.54</b>	0.0460	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	<b>0.692</b>	0.0230	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.4 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		38.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>629</b>	28.7	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	<b>13.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	<b>586</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	<b>2900</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	<b>467</b>	144	mg/kg dry	5	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		115 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		139 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>3950</b>	144	mg/kg dry	5	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-11 1.5-2'**  
**7H12002-15 (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	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0476	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0476	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0238	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		49.0 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		99.2 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.8	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	16.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	42.9	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		124 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>42.9</b>	29.8	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-12 1.5-2'**  
**7H12002-16 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		50.0 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		100 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	459	29.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	50.4	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		151 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>50.4</b>	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-13 1.5-2'**  
**7H12002-17 (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	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0465	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0465	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0233	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		54.4 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		96.3 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>8210</b>	58.1	mg/kg dry	50	P7H1215	08/12/17	08/13/17	EPA 300.0	
<b>% Moisture</b>	<b>14.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	<b>114</b>	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		140 %	70-130		P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>114</b>	29.1	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 1.5-2'**  
**7H12002-18 (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	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0449	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0225	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		37.5 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		101 %	75-125		P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	1050	28.1	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	11.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	44.7	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
>C12-C28	1270	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
>C28-C35	284	28.1	mg/kg dry	1	P7H1204	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		56.5 %	70-130		P7H1204	08/12/17	08/13/17	TPH 8015M	S-GC
Surrogate: o-Terphenyl		72.3 %	70-130		P7H1204	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	1600	28.1	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 4.5-5'**  
**7H12002-19 (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	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0471	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0235	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		46.5 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		97.5 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	15.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		86.9 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		106 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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1400 Rankin HWY Midland, TX 79701 432-686-7235

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Page 21 of 37

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 N 2'**  
**7H12002-20 (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	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.9 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		50.3 %		75-125	P7H1205	08/12/17	08/12/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	79.0	28.4	mg/kg dry	25	P7H1215	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	
Surrogate: o-Terphenyl		145 %		70-130	P7H1204	08/12/17	08/12/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/12/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 S 2'**  
**7H12002-21 (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	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0476	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0476	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0238	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	29.8	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	16.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		80.7 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		96.0 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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1400 Rankin HWY Midland, TX 79701 432-686-7235

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 W-2'**  
**7H12002-22 (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	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		44.7 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		93.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		111 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		127 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-15 E 2'**  
**7H12002-23 (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	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0455	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0227	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		47.2 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		102 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	ND	28.4	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	12.0	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		125 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		150 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-16 0.5-1'**  
**7H12002-24 (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	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Toluene	ND	0.0426	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Ethylbenzene	ND	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (p/m)	ND	0.0426	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Xylene (o)	ND	0.0213	mg/kg dry	20	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		101 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		43.8 %		75-125	P7H1206	08/12/17	08/13/17	EPA 8021B	S-GC

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	<b>3810</b>	26.6	mg/kg dry	25	P7H1216	08/12/17	08/13/17	EPA 300.0	
% Moisture	<b>6.0</b>	0.1	%	1	P7H1307	08/13/17	08/13/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: 1-Chlorooctane		75.8 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Surrogate: o-Terphenyl		89.9 %		70-130	P7H1203	08/12/17	08/13/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	08/12/17	08/13/17	calc	

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1205 - General Preparation (GC)**

<b>Blank (P7H1205-BLK1)</b>										
										Prepared & Analyzed: 08/12/17
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	0.00132	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0604		"	0.0600		101	75-125			
Surrogate: 4-Bromofluorobenzene	0.0350		"	0.0600		58.4	75-125			S-GC

<b>LCS (P7H1205-BS1)</b>										
										Prepared & Analyzed: 08/12/17
Benzene	0.115	0.00100	mg/kg wet	0.100		115	70-130			
Toluene	0.112	0.00200	"	0.100		112	70-130			
Ethylbenzene	0.110	0.00100	"	0.100		110	70-130			
Xylene (p/m)	0.197	0.00200	"				70-130			
Xylene (o)	0.0951	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0708		"	0.0600		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0600		58.1	75-125			S-GC

<b>LCS Dup (P7H1205-BSD1)</b>										
										Prepared & Analyzed: 08/12/17
Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130	3.16	20	
Toluene	0.118	0.00200	"	0.100		118	70-130	5.00	20	
Ethylbenzene	0.106	0.00100	"	0.100		106	70-130	4.16	20	
Xylene (p/m)	0.200	0.00200	"				70-130		20	
Xylene (o)	0.102	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0687		"	0.0600		114	75-125			
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0600		60.2	75-125			S-GC

<b>Matrix Spike (P7H1205-MS1)</b>										
			Source: 7H12002-20			Prepared: 08/12/17	Analyzed: 08/13/17			
Benzene	0.190	0.0227	mg/kg dry	0.227	ND	83.8	80-120			
Toluene	0.210	0.0455	"	0.227	ND	92.3	80-120			
Ethylbenzene	0.167	0.0227	"	0.227	ND	73.4	80-120			QM-07
Xylene (p/m)	0.370	0.0455	"		ND		80-120			
Xylene (o)	0.130	0.0227	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0325		"	0.0682		47.6	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0719		"	0.0682		105	75-125			

DRAFT REPORT

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 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1205 - General Preparation (GC)**

<b>Matrix Spike Dup (P7H1205-MSD1)</b>	<b>Source: 7H12002-20</b>		Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	0.213	0.0227	mg/kg dry	0.227	ND	93.9	80-120	11.4	20	
Toluene	0.230	0.0455	"	0.227	ND	101	80-120	9.20	20	
Ethylbenzene	0.206	0.0227	"	0.227	ND	90.5	80-120	20.9	20	QM-07
Xylene (p/m)	0.467	0.0455	"		ND		80-120		20	
Xylene (o)	0.168	0.0227	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0740		"	0.0682		108	75-125			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0682		60.4	75-125			S-GC

**Batch P7H1206 - General Preparation (GC)**

<b>Blank (P7H1206-BLK1)</b>			Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0564		"	0.0600		94.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0600		59.0	75-125			S-GC

**LCS (P7H1206-BS1)**

			Prepared: 08/12/17		Analyzed: 08/13/17					
Benzene	0.118	0.00100	mg/kg wet	0.100		118	70-130			
Toluene	0.119	0.00200	"	0.100		119	70-130			
Ethylbenzene	0.114	0.00100	"	0.100		114	70-130			
Xylene (p/m)	0.199	0.00200	"				70-130			
Xylene (o)	0.0979	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0766		"	0.0600		128	75-125			S-GC1
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0600		70.8	75-125			S-GC

DRAFT REPORT

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 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1206 - General Preparation (GC)**

**LCS Dup (P7H1206-BSD1)**

Prepared: 08/12/17 Analyzed: 08/13/17

Benzene	0.0975	0.00100	mg/kg wet	0.100		97.5	70-130	19.2	20	
Toluene	0.0960	0.00200	"	0.100		96.0	70-130	21.0	20	R2
Ethylbenzene	0.0933	0.00100	"	0.100		93.3	70-130	20.1	20	R2
Xylene (p/m)	0.165	0.00200	"				70-130		20	
Xylene (o)	0.0816	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0603		"	0.0600		100	75-125			
Surrogate: 4-Bromofluorobenzene	0.0331		"	0.0600		55.2	75-125			S-GC

**Matrix Spike (P7H1206-MS1)**

Source: 7H12002-24

Prepared: 08/12/17 Analyzed: 08/13/17

Benzene	0.244	0.0213	mg/kg dry	0.213	ND	115	80-120			
Toluene	0.236	0.0426	"	0.213	ND	111	80-120			
Ethylbenzene	0.199	0.0213	"	0.213	ND	93.4	80-120			
Xylene (p/m)	0.435	0.0426	"		ND		80-120			
Xylene (o)	0.194	0.0213	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0663		"	0.0638		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0274		"	0.0638		42.9	75-125			S-GC

**Matrix Spike Dup (P7H1206-MSD1)**

Source: 7H12002-24

Prepared: 08/12/17 Analyzed: 08/13/17

Benzene	0.185	0.0213	mg/kg dry	0.213	ND	87.1	80-120	27.4	20	R3
Toluene	0.197	0.0426	"	0.213	ND	92.4	80-120	18.3	20	
Ethylbenzene	0.189	0.0213	"	0.213	ND	88.8	80-120	5.05	20	
Xylene (p/m)	0.430	0.0426	"		ND		80-120		20	
Xylene (o)	0.151	0.0213	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0624		"	0.0638		97.8	75-125			
Surrogate: 4-Bromofluorobenzene	0.0244		"	0.0638		38.2	75-125			S-GC

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1215 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1215-BLK1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1215-BS1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	424	1.00	mg/kg wet	400		106	80-120			
<b>LCS Dup (P7H1215-BSD1)</b>										
Prepared & Analyzed: 08/12/17										
Chloride	422	1.00	mg/kg wet	400		105	80-120	0.598	20	
<b>Duplicate (P7H1215-DUP1)</b>										
Source: 7H12002-01 Prepared & Analyzed: 08/12/17										
Chloride	ND	30.5	mg/kg dry		19.5				20	
<b>Duplicate (P7H1215-DUP2)</b>										
Source: 7H12002-11 Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	ND	28.4	mg/kg dry		ND				20	
<b>Matrix Spike (P7H1215-MS1)</b>										
Source: 7H12002-01 Prepared & Analyzed: 08/12/17										
Chloride	2450	30.5	mg/kg dry	2440	19.5	99.8	80-120			

**Batch P7H1216 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1216-BLK1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1216-BS1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	432	1.00	mg/kg wet	400		108	80-120			
<b>LCS Dup (P7H1216-BSD1)</b>										
Prepared: 08/12/17 Analyzed: 08/13/17										
Chloride	420	1.00	mg/kg wet	400		105	80-120	2.85	20	

DRAFT REPORT

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Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1216 - \*\*\* DEFAULT PREP \*\*\***

**Duplicate (P7H1216-DUP1)** Source: 7H12002-21 Prepared: 08/12/17 Analyzed: 08/13/17

Chloride	ND	29.8	mg/kg dry		ND				20	
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**Duplicate (P7H1216-DUP2)** Source: 7H09006-08 Prepared: 08/12/17 Analyzed: 08/13/17

Chloride	7310	29.1	mg/kg dry		7550			3.15	20	
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**Matrix Spike (P7H1216-MS1)** Source: 7H12002-21 Prepared: 08/12/17 Analyzed: 08/13/17

Chloride	2170	29.8	mg/kg dry	2380	ND	91.3	80-120			
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**Batch P7H1307 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1307-BLK1)** Prepared & Analyzed: 08/13/17

% Moisture	19.0	0.1	%							
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**Duplicate (P7H1307-DUP1)** Source: 7H12002-01 Prepared & Analyzed: 08/13/17

% Moisture	ND	0.1	%		18.0			200	20	
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DRAFT REPORT

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 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1203 - TX 1005**

**Blank (P7H1203-BLK1)** Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	67.0		"	50.0		134	70-130			S-GC

**LCS (P7H1203-BS1)** Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	932	25.0	mg/kg wet	1000		93.2	75-125			
>C12-C28	941	25.0	"	1000		94.1	75-125			
Surrogate: 1-Chlorooctane	124		"	100		124	70-130			
Surrogate: o-Terphenyl	60.4		"	50.0		121	70-130			

**LCS Dup (P7H1203-BSD1)** Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	941	25.0	mg/kg wet	1000		94.1	75-125	1.01	20	
>C12-C28	952	25.0	"	1000		95.2	75-125	1.17	20	
Surrogate: 1-Chlorooctane	125		"	100		125	70-130			
Surrogate: o-Terphenyl	61.1		"	50.0		122	70-130			

**Matrix Spike (P7H1203-MS1)** Source: 7H12002-24 Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	967	26.6	mg/kg dry	1060	ND	90.9	75-125			
>C12-C28	990	26.6	"	1060	11.6	92.0	75-125			
Surrogate: 1-Chlorooctane	127		"	106		120	70-130			
Surrogate: o-Terphenyl	62.9		"	53.2		118	70-130			

**Matrix Spike Dup (P7H1203-MSD1)** Source: 7H12002-24 Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	984	26.6	mg/kg dry	1060	ND	92.5	75-125	1.75	20	
>C12-C28	1020	26.6	"	1060	11.6	94.6	75-125	2.84	20	
Surrogate: 1-Chlorooctane	132		"	106		124	70-130			
Surrogate: o-Terphenyl	64.3		"	53.2		121	70-130			

DRAFT REPORT

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42  
 Project Number: 17-0124-01  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1204 - TX 1005**

**Blank (P7H1204-BLK1)**

Prepared & Analyzed: 08/12/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	68.6		"	50.0		137	70-130			S-GC

**LCS (P7H1204-BS1)**

Prepared & Analyzed: 08/12/17

C6-C12	861	25.0	mg/kg wet	1000		86.1	75-125			
>C12-C28	904	25.0	"	1000		90.4	75-125			
Surrogate: 1-Chlorooctane	129		"	100		129	70-130			
Surrogate: o-Terphenyl	57.0		"	50.0		114	70-130			

**LCS Dup (P7H1204-BSD1)**

Prepared & Analyzed: 08/12/17

C6-C12	897	25.0	mg/kg wet	1000		89.7	75-125	4.10	20	
>C12-C28	929	25.0	"	1000		92.9	75-125	2.83	20	
Surrogate: 1-Chlorooctane	123		"	100		123	70-130			
Surrogate: o-Terphenyl	58.9		"	50.0		118	70-130			

**Matrix Spike (P7H1204-MS1)**

Source: 7H12002-20

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	1070	28.4	mg/kg dry	1140	ND	93.8	75-125			
>C12-C28	1090	28.4	"	1140	ND	95.8	75-125			
Surrogate: 1-Chlorooctane	139		"	114		122	70-130			
Surrogate: o-Terphenyl	68.9		"	56.8		121	70-130			

**Matrix Spike Dup (P7H1204-MSD1)**

Source: 7H12002-20

Prepared: 08/12/17 Analyzed: 08/13/17

C6-C12	1040	28.4	mg/kg dry	1140	ND	91.7	75-125	2.28	20	
>C12-C28	1060	28.4	"	1140	ND	93.2	75-125	2.67	20	
Surrogate: 1-Chlorooctane	136		"	114		120	70-130			
Surrogate: o-Terphenyl	66.9		"	56.8		118	70-130			

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC1 Surrogate recovery outside of control limits. A second analysis confirmed the original results..
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- R3 The RPD exceeded the acceptance limit due to sample matrix effects.
- R2 The RPD exceeded the acceptance limit.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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: 8/13/2017

Brent Barron, Laboratory Director/Technical Director

DRAFT REPORT

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42  
Project Number: 17-0124-01  
Project Manager: Mark Larson

Fax: (432) 687-0456

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---

DRAFT REPORT

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1400 Rankin HWY Midland, TX 79701 432-686-7235  
66



507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 8-11-17  
PO #:   
PROJECT LOCATION OR NAME:   
LAI PROJECT #: 17-0124-01  
COLLECTOR:   
LAB WORK ORDER #: 7112-001  
PAGE 1 OF 2

CHAIN-OF-CUSTODY

TRRP report?  Yes  No

TIME ZONE: Time zone/State:

Marietta, NH

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Field Sample I.D.

Lab #

Date

Time

Matrix

# of Containers

PRESERVATION  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE  
UNPRESERVED

- ANALYSES**
- BTEX  MTBE
  - TRP 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015  ORO
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8081 PESTICIDES  8151 HERBICIDES
  - 8082 PCBs
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  TCLP - METALS (RCRA)  Semi-VOC
  - TOTAL METALS (RCRA)  D.W. 200.8  TCLP
  - LEAD - TOTAL  FLASHPOINT
  - RCI  TOX  % MOISTURE
  - TDS  TSS
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PECTHORATE
  - CHLORIDE  ANIONS  ALKALINITY
  - M300

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION	ANALYSES
S-1 1.5-2	1	8-11-17	14:45	S	1	✓	✓
S-2 1.5-2	2	8-11-17	14:46	S	1	✓	✓
S-3 1.5-2	3	8-11-17	14:48	S	1	✓	✓
S-4 1.5-2	4	8-11-17	14:50	S	1	✓	✓
S-5 1.5-2	5	8-11-17	15:22	S	1	✓	✓
S-6 4.5-5	6	8-11-17	15:25	S	1	✓	✓
S-6 N-2'	7	8-11-17	15:30	S	1	✓	✓
S-6 S-2	8	8-11-17	15:34	S	1	✓	✓
S-6 W-2	9	8-11-17	15:36	S	1	✓	✓
S-6 E-2	10	8-11-17	15:42	S	1	✓	✓
S-7 1.5-2	11	8-11-17	14:54	S	1	✓	✓
S-8 1.5-2	12	8-11-17	14:57	S	1	✓	✓
S-9 1.5-2	13	8-11-17	15:01	S	1	✓	✓
S-10 1.5-2	14	8-11-17	15:05	S	1	✓	✓
S-11 1.5-2	15	8-11-17	15:08	S	1	✓	✓
TOTAL							

RELINQUISHED BY: (Signature) *Quady* DATE/TIME: 8-11-17 8:00pm RECEIVED BY: (Signature) *Rush*

RELINQUISHED BY: (Signature) DATE/TIME: RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME: RECEIVED BY: (Signature)

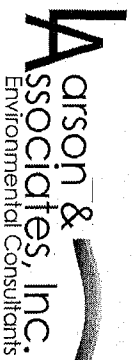
TURN AROUND TIME: NORMAL  1 DAY  2 DAY  OTHER

LABORATORY USE ONLY: RECEIVING TEMP: 2.0 THERM #: NCFEL

CUSTODY SEALS:  BROKEN  INTACT  NOT USED

CARRIER BILL #  HAND DELIVERED





507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 8-11-17  
PO #: 17-0124-01  
PROJECT LOCATION OR NAME:  
LAI PROJECT #:  
COLLECTOR:  
LAB WORK ORDER #: 7H1200  
PAGE 2 OF 2

CHAIN-OF-CUSTODY

TRRP report?  Yes  No  
TIME ZONE:  
Time zone/State: MDT TX M

S=SOIL P=PAINT  
W=WATER SL=SLUDGE  
A=AIR OT=OTHER

# of Containers  
PRESERVATION  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE  
UNPRESERVED

ANALYSES  
BTEX  MTBE   
TRPH 418.1  TPH 1005  TPH 1006   
GASOLINE MOD 8015  CRU   
DIESEL - MOD 8015   
VOC 8200   
SVOC 8270  PAH 8270  HOLDPAH   
8081 PESTICIDES  8151 HERBICIDES   
8082 PCBs   
TC1P - METALS (RCRA)  TC1P VOC   
TC1P - PEST  HERB  Semi-VOC   
TOTAL METALS (RCRA)  OTHER LIST   
LEAD - TOTAL  D.W 200.8  TC1P   
RO  TOX  FLASHPOINT   
TDS  TSS  % MOISTURE  CYANIDE   
pH  HEXAVALENT CHROMIUM   
EXPLOSIVES  PECHLORATE   
CHLORIDE  ANIONS  ALKALINITY   
M300

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
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S-12 1.5-2'	16	8-11-17	15:10	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-13 1.5-2'	17	8-11-17	15:11	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-14 1.5-2'	18	8-11-17	15:13	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-15 4.5-5'	19	8-11-17	15:15	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-15 N2'	20	8-11-17	15:36	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-15 S2'	21	8-11-17	15:34	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-15 W2'	22	8-11-17	15:38	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-15 E2'	23	8-11-17	15:39	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
S-10 0.5-1	24	8-11-17	15:27	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

TOTAL

RELINQUISHED BY: (Signature) [Signature] DATE/TIME 8-11-17 8:00pm  
RECEIVED BY: (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

TURN AROUND TIME  
NORMAL   
1 DAY   
2 DAY   
OTHER  rush Sunday

LABORATORY USE ONLY:  
RECEIVING TEMP: \_\_\_\_\_ THERM #: \_\_\_\_\_  
CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL # \_\_\_\_\_  
 HAND DELIVERED

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42 CTB

Project Number: 17-0124-02

Location:

Lab Order Number: 7H15001



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/16/17

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-13 5'-6'	7H15001-01	Soil	08/14/17 10:10	08-15-2017 08:25
S-13 10'-11'	7H15001-02	Soil	08/14/17 10:12	08-15-2017 08:25
S-13 15'-16'	7H15001-03	Soil	08/14/17 10:17	08-15-2017 08:25
S-13 20'-21'	7H15001-04	Soil	08/14/17 10:23	08-15-2017 08:25
S-13 25'-26'	7H15001-05	Soil	08/14/17 10:25	08-15-2017 08:25
S-13 30'-31'	7H15001-06	Soil	08/14/17 10:27	08-15-2017 08:25
S-16 5'-6'	7H15001-07	Soil	08/14/17 12:01	08-15-2017 08:25
S-16 10'-11'	7H15001-08	Soil	08/14/17 12:03	08-15-2017 08:25
S-16 15'-16'	7H15001-09	Soil	08/14/17 12:06	08-15-2017 08:25
S-16 20'-21'	7H15001-10	Soil	08/14/17 12:09	08-15-2017 08:25
S-5 5'-5.5'	7H15001-11	Soil	08/14/17 13:50	08-15-2017 08:25
S-5 N2'	7H15001-12	Soil	08/14/17 14:00	08-15-2017 08:25
S-5 S2'	7H15001-13	Soil	08/14/17 15:38	08-15-2017 08:25
S-5 E2'	7H15001-14	Soil	08/14/17 15:43	08-15-2017 08:25
S-5 W2'	7H15001-15	Soil	08/14/17 15:40	08-15-2017 08:25
S-6 12'-12.5'	7H15001-16	Soil	08/14/17 13:53	08-15-2017 08:25
S-6 N4'	7H15001-17	Soil	08/14/17 14:30	08-15-2017 08:25
S-6 S4'	7H15001-18	Soil	08/14/17 14:22	08-15-2017 08:25
S-6 E4'	7H15001-19	Soil	08/14/17 14:26	08-15-2017 08:25
S-6 W4'	7H15001-20	Soil	08/14/17 14:34	08-15-2017 08:25
S-6 N8'	7H15001-21	Soil	08/14/17 14:28	08-15-2017 08:25
S-6 S8'	7H15001-22	Soil	08/14/17 14:20	08-15-2017 08:25
S-6 E8'	7H15001-23	Soil	08/14/17 14:24	08-15-2017 08:25
S-6 W8'	7H15001-24	Soil	08/14/17 14:32	08-15-2017 08:25
S-10 5'-5.5'	7H15001-25	Soil	08/14/17 15:55	08-15-2017 08:25
S-10 N2'	7H15001-26	Soil	08/14/17 15:58	08-15-2017 08:25
S-10 S2'	7H15001-27	Soil	08/14/17 15:50	08-15-2017 08:25
S-10 E2'	7H15001-28	Soil	08/14/17 15:52	08-15-2017 08:25
S-10 W2'	7H15001-29	Soil	08/14/17 15:56	08-15-2017 08:25

Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710	Project: Nash Draw 42 CTB Project Number: 17-0124-02 Project Manager: Mark Larson	Fax: (432) 687-0456
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**S-13 5'-6'**  
**7H15001-01 (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**

<b>Chloride</b>	<b>169</b>	1.05	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-13 10'-11'**  
**7H15001-02 (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>Chloride</b>	<b>290</b>	1.05	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-13 15'-16'**  
**7H15001-03 (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>520</b>	1.08	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>7.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710	Project: Nash Draw 42 CTB Project Number: 17-0124-02 Project Manager: Mark Larson	Fax: (432) 687-0456
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**S-13 20'-21'**  
**7H15001-04 (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>64.3</b>	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710	Project: Nash Draw 42 CTB Project Number: 17-0124-02 Project Manager: Mark Larson	Fax: (432) 687-0456
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**S-13 25'-26'**  
**7H15001-05 (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**

Chloride	21.2	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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**S-13 30'-31'**  
**7H15001-06 (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**

<b>Chloride</b>	<b>26.1</b>	1.01	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>1.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-16 5'-6'**  
**7H15001-07 (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**

<b>Chloride</b>	<b>70.7</b>	1.10	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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**S-16 10'-11'**  
**7H15001-08 (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>95.2</b>	1.10	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

Permian Basin Environmental Lab, L.P.

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**S-16 15'-16'**  
**7H15001-09 (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>413</b>	1.11	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-16 20'-21'**  
**7H15001-10 (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>63.8</b>	1.00	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	ND	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

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**S-5 5'-5.5'**  
**7H15001-11 (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>19.3</b>	1.15	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>209</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>84.9</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.1 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>294</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-5 N2'**  
**7H15001-12 (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>48.0</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>43.1</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>764</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>152</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		103 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		122 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>959</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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**S-5 S2'**  
**7H15001-13 (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	ND	1.09	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	<b>8.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.7 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-5 E2'**  
**7H15001-14 (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>161</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>356</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>2700</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>524</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		109 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		108 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>3580</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

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 Project Manager: Mark Larson

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**S-5 W2'**  
**7H15001-15 (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>16.8</b>	1.20	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>17.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>66.2</b>	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		77.5 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		89.9 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>66.2</b>	30.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 12'-12.5'**  
**7H15001-16 (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>35.2</b>	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>200</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>36.5</b>	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>237</b>	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 N4'**  
**7H15001-17 (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>30.3</b>	1.16	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>14.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>246</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>906</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>160</b>	29.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		94.4 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		105 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>1310</b>	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 S4'**  
**7H15001-18 (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	61.5	1.12	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	11.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %		70-130	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		106 %		70-130	P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 E4'**  
**7H15001-19 (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	13.8	1.08	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
% Moisture	7.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		87.3 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 W4'**  
**7H15001-20 (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>21.6</b>	1.15	mg/kg dry	1	P7H1503	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	<b>281</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	<b>48.5</b>	28.7	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		88.3 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>330</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 N8'**  
**7H15001-21 (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	20.1	1.19	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	16.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		90.9 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 S8'**  
**7H15001-22 (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	954	1.11	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	10.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		92.8 %		70-130	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		109 %		70-130	P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 E8'**  
**7H15001-23 (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	43.8	1.09	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	8.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		108 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P7H1508	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-6 W8'**  
**7H15001-24 (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>18.1</b>	1.15	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>61.4</b>	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.5 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>61.4</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-10 5'-5.5'**  
**7H15001-25 (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>4.88</b>	1.10	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>9.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	177	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	32.1	27.5	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		97.8 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>209</b>	27.5	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-10 N2'**  
**7H15001-26 (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	99.7	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.5 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		113 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-10 S2'**  
**7H15001-27 (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>68.4</b>	1.20	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>17.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>33.2</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>553</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C28-C35</b>	<b>95.2</b>	30.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		97.0 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		113 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>681</b>	30.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Manager: Mark Larson

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**S-10 E2'**  
**7H15001-28 (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>79.3</b>	1.15	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>&gt;C12-C28</b>	<b>92.9</b>	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		106 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		126 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>92.9</b>	28.7	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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**S-10 W2'**  
**7H15001-29 (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	19.4	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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 Project Number: 17-0124-02  
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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
<b>Batch P7H1503 - *** DEFAULT PREP ***</b>										
<b>Blank (P7H1503-BLK1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1503-BS1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	362	1.00	mg/kg wet	400		90.5	80-120			
<b>LCS Dup (P7H1503-BSD1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	366	1.00	mg/kg wet	400		91.5	80-120	1.07	20	
<b>Duplicate (P7H1503-DUP1)</b> Source: 7H15001-01 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	169	1.05	mg/kg dry		169			0.0873	20	
<b>Duplicate (P7H1503-DUP2)</b> Source: 7H15001-11 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	20.4	1.15	mg/kg dry		19.3			5.61	20	
<b>Matrix Spike (P7H1503-MS1)</b> Source: 7H15001-01 Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	4460	26.3	mg/kg dry	4210	169	102	80-120			
<b>Batch P7H1507 - *** DEFAULT PREP ***</b>										
<b>Blank (P7H1507-BLK1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P7H1507-BS1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	371	1.00	mg/kg wet	400		92.7	80-120			
<b>LCS Dup (P7H1507-BSD1)</b> Prepared: 08/15/17 Analyzed: 08/16/17										
Chloride	371	1.00	mg/kg wet	400		92.8	80-120	0.0835	20	

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 Project Manager: Mark Larson

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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 P7H1602 - \*\*\* DEFAULT PREP \*\*\***

<b>Blank (P7H1602-BLK1)</b>				Prepared & Analyzed: 08/16/17						
% Moisture	ND	0.1	%							
<b>Duplicate (P7H1602-DUP1)</b>				Source: 7H15001-26 Prepared & Analyzed: 08/16/17						
% Moisture	14.0	0.1	%		14.0			0.00	20	
<b>Duplicate (P7H1602-DUP2)</b>				Source: 7H15010-01 Prepared & Analyzed: 08/16/17						
% Moisture	3.0	0.1	%		3.0			0.00	20	
<b>Duplicate (P7H1602-DUP3)</b>				Source: 7H15016-01 Prepared & Analyzed: 08/16/17						
% Moisture	ND	0.1	%		1.0			200	20	

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**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 P7H1508 - TX 1005**

**Blank (P7H1508-BLK1)**

Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	71.1		"	50.0		142	70-130			S-GC

**LCS (P7H1508-BS1)**

Prepared & Analyzed: 08/15/17

C6-C12	911	25.0	mg/kg wet	1000		91.1	75-125			
>C12-C28	870	25.0	"	1000		87.0	75-125			
Surrogate: 1-Chlorooctane	147		"	120		123	70-130			
Surrogate: o-Terphenyl	71.0		"	60.0		118	70-130			

**LCS Dup (P7H1508-BSD1)**

Prepared & Analyzed: 08/15/17

C6-C12	912	25.0	mg/kg wet	1000		91.2	75-125	0.0669	20	
>C12-C28	884	25.0	"	1000		88.4	75-125	1.54	20	
Surrogate: 1-Chlorooctane	148		"	120		123	70-130			
Surrogate: o-Terphenyl	74.2		"	60.0		124	70-130			

**Duplicate (P7H1508-DUP1)**

Source: 7H15001-23

Prepared & Analyzed: 08/15/17

C6-C12	ND	27.2	mg/kg dry		ND				20	
>C12-C28	16.7	27.2	"		18.1			8.04	20	
Surrogate: 1-Chlorooctane	110		"	109		101	70-130			
Surrogate: o-Terphenyl	66.6		"	54.3		123	70-130			

**Batch P7H1601 - TX 1005**

**Blank (P7H1601-BLK1)**

Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	66.4		"	50.0		133	70-130			S-GC

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1601 - TX 1005**

**LCS (P7H1601-BS1)**

Prepared & Analyzed: 08/15/17

C6-C12	855	25.0	mg/kg wet	1000		85.5	75-125			
>C12-C28	880	25.0	"	1000		88.0	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	64.2		"	50.0		128	70-130			

**LCS Dup (P7H1601-BSD1)**

Prepared & Analyzed: 08/15/17

C6-C12	857	25.0	mg/kg wet	1000		85.7	75-125	0.211	20	
>C12-C28	869	25.0	"	1000		86.9	75-125	1.18	20	
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	62.6		"	50.0		125	70-130			

**Duplicate (P7H1601-DUP1)**

Source: 7H07006-21

Prepared: 08/15/17 Analyzed: 08/16/17

C6-C12	53.6	125	mg/kg dry		ND				20	
>C12-C28	14500	125	"		2730			137	20	
Surrogate: 1-Chlorooctane	93.2		"	100		93.2	70-130			
Surrogate: o-Terphenyl	49.8		"	50.0		99.7	70-130			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- 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: 8/16/2017

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.

**Varson & Associates, Inc.**  
 Environmental Consultants  
 507 N. Marienfeld, Ste. 200  
 Midland, TX 79701  
 432-687-0901

**Mark Lawson / Green Heiko**

DATE: 8-14-17      PAGE 1 OF 2  
 PO #: \_\_\_\_\_      LAB WORK ORDER #: 7HISB01  
 PROJECT LOCATION OR NAME: Neuh Meadows # 42 CR6  
 LAI PROJECT #: 17-0124-02      COLLECTOR: ST

CHAIN-OF-CUSTOMER

TRRP report?  Yes  No  
 TIME ZONE: \_\_\_\_\_  
 Time zone/State: \_\_\_\_\_

S=SOIL      P=PAINT  
 W=WATER      SL=SLUDGE  
 A=AIR      OT=OTHER

Mountain/NN

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
S-13 5'-6'	1	8-14-17	10:10	S	1						BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> TRPH 418.1 <input type="checkbox"/> TPH 1005 <input type="checkbox"/> TPH 1006 <input type="checkbox"/> GASOLINE MOD 8015 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> DIESEL MOD 8015 <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> VOC 8200 <input type="checkbox"/> SVOC 8270 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/> 8081 PESTICIDES <input type="checkbox"/> 8151 HERBICIDES <input type="checkbox"/> TCLP - METALS (RCRA) <input type="checkbox"/> TCLP VOC <input type="checkbox"/> TCLP - PEST <input type="checkbox"/> HERB <input type="checkbox"/> Semi-VOC <input type="checkbox"/> TOTAL METALS (RCRA) <input type="checkbox"/> D.W. 200.8 <input type="checkbox"/> TCLP <input type="checkbox"/> LEAD - TOTAL <input type="checkbox"/> FLASHPOINT <input type="checkbox"/> RCI <input type="checkbox"/> TOX <input type="checkbox"/> FLASHPNT <input type="checkbox"/> TDS <input type="checkbox"/> TSS <input type="checkbox"/> % MOISTURE <input type="checkbox"/> CYANIDE <input type="checkbox"/> pH <input type="checkbox"/> HEXAVALENT CHROMIUM <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> PECHLORATED <input type="checkbox"/> CHLORIDE <input type="checkbox"/> ANIONS <input type="checkbox"/> ALKALINITY <input type="checkbox"/> <u>M 300</u>	
S-13 10'-11'	2	8-14-17	10:12	S	1							
S-13 15'-16'	3	8-14-17	10:17	S	1							
S-13 20'-21'	4	8-14-17	10:23	S	1							
S-13 25'-26'	5	8-14-17	10:25	S	1							
S-13 30'-31'	6	8-14-17	10:27	S	1							
S-10 5'-6'	7	8-14-17	12:01	S	1							
S-10 10'-11'	8	8-14-17	12:03	S	1							
S-10 15'-16'	9	8-14-17	12:06	S	1							
S-10 20'-21'	10	8-14-17	12:09	S	1							
S-5 5'-5.5	11	8-14-17	13:50	S	1							
S-5 N2'	12	8-14-17	14:00	S	1							
S-5 S2'	13	8-14-17	15:36	S	1							
S-5 E2'	14	8-14-17	15:43	S	1							
S-5 W2'	15	8-14-17	15:40	S	1							
TOTAL												

RELINQUISHED BY: (Signature) Mark Lawson      DATE/TIME: 8-15-17 8:25  
 RECEIVED BY: (Signature) Green Heiko  
 RELINQUISHED BY: (Signature) Mark Lawson      DATE/TIME: 8-15-17 8:25  
 RECEIVED BY: (Signature) Green Heiko

TURN AROUND TIME  
 NORMAL   
 1 DAY   
 2 DAY   
 OTHER  Neuh

LABORATORY USE ONLY:  
 RECEIVING TEMP: 35      THERM #: \_\_\_\_\_  
 CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL # \_\_\_\_\_  
 HAND DELIVERED

**Arson & Associates, Inc.**  
 Environmental Consultants  
 507 N. Marrenfield, Ste. 200  
 Midland, TX 79701  
 432-687-0901

Data Reported to: Mark Larson / Carson Hughes

DATE: 8-14-17  
 PO #: \_\_\_\_\_  
 PROJECT LOCATION OR NAME: North Texas - 42 CR6  
 LAI PROJECT #: 17-0124-02  
 COLLECTOR: SI

LAB WORK ORDER #: THISD01  
 PAGE 2 OF 2

CHAIN-OF-CUSTOMER

TRRP report?  
 Yes  No

TIME ZONE:  
 Time zone/State:

S=SOIL  
 W=WATER  
 A=AIR

P=PAINT  
 SL=SLUDGE  
 OT=OTHER

Maintain/NI

Field Sample I.D.

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub>  NaOH

ICE

UNPRESERVED

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8081 PESTICIDES  8151 HERBICIDES
  - 8082 PCBs
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  HERB  Sem-VOC
  - TOTAL METALS (RCRA)  OTHER LIST
  - LEAD - TOTAL  D.W. 200.8  TCLP
  - RC10  TOX  FLASHPOINT
  - TDS  TSS  % MOISTURE  CYANIDE
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PECHLORATE
  - CHLORIDE  ANIONS  ALKALINITY

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES
S-10 12'-12.5'	16	8-14-17	13:53	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N4'	17	8-14-17	14:30	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S4'	18	8-14-17	14:22	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E4'	19	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W4'	20	8-14-17	14:34	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N0'	21	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S0'	22	8-14-17	14:20	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E6'	23	8-14-17	14:24	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W6'	24	8-14-17	14:32	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E-5.5'	25	8-14-17	15:55	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 N2'	26	8-14-17	15:56	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 S2'	27	8-14-17	15:50	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 E2'	28	8-14-17	15:52	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
S-10 W2'	29	8-14-17	15:56	S	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
TOTAL											

RELINQUISHED BY: (Signature) Shel DATE/TIME 8-15-17 7:18

RECEIVED BY: (Signature) Carson Hughes

RELINQUISHED BY: (Signature) Carson Hughes DATE/TIME 8-15-17 8:25

RECEIVED BY: (Signature) Carson Hughes

TURN AROUND TIME

NORMAL

1 DAY

2 DAY

OTHER  rush

LABORATORY USE ONLY:

RECEIVING TEMP: 1.8 THERM # 41305

CUSTOMER SEALS -  BROKEN  INTACT  NOT USED

CARRIER BILL # \_\_\_\_\_

HAND DELIVERED

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw 42 CTB

Project Number: 17-0124-02

Location:

Lab Order Number: 7H15002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/16/17



Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-14 5'-5.5'	7H15002-01	Soil	08/14/17 15:10	08-15-2017 08:25
S-14 N2'	7H15002-02	Soil	08/14/17 15:30	08-15-2017 08:25
S-14 S2'	7H15002-03	Soil	08/14/17 15:22	08-15-2017 08:25
S-14 E2'	7H15002-04	Soil	08/14/17 15:28	08-15-2017 08:25
S-14 W2'	7H15002-05	Soil	08/14/17 15:20	08-15-2017 08:25

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 5'-5.5'**  
**7H15002-01 (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	247	1.23	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	19.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C12-C28	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
>C28-C35	ND	30.9	mg/kg dry	1	P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Surrogate: o-Terphenyl		129 %	70-130		P7H1601	08/15/17	08/15/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.9	mg/kg dry	1	[CALC]	08/15/17	08/15/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 N2'**  
**7H15002-02 (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>Chloride</b>	<b>105</b>	1.12	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 S2'**  
**7H15002-03 (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>192</b>	1.25	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>20.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	31.2	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		95.7 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		114 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	31.2	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 E2'**  
**7H15002-04 (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>139</b>	1.22	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
<b>% Moisture</b>	<b>18.0</b>	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		98.8 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-14 W2'**  
**7H15002-05 (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**

Chloride	412	1.16	mg/kg dry	1	P7H1507	08/15/17	08/16/17	EPA 300.0	
% Moisture	14.0	0.1	%	1	P7H1602	08/16/17	08/16/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: 1-Chlorooctane		97.5 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Surrogate: o-Terphenyl		116 %	70-130		P7H1601	08/15/17	08/16/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	08/15/17	08/16/17	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1507 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1507-BLK1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	ND	1.00	mg/kg wet							
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**LCS (P7H1507-BS1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	371	1.00	mg/kg wet	400		92.7	80-120			
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**LCS Dup (P7H1507-BSD1)** Prepared: 08/15/17 Analyzed: 08/16/17

Chloride	371	1.00	mg/kg wet	400		92.8	80-120	0.0835	20	
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**Batch P7H1602 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1602-BLK1)** Prepared & Analyzed: 08/16/17

% Moisture	ND	0.1	%							
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**Duplicate (P7H1602-DUP1)** Source: 7H15001-26 Prepared & Analyzed: 08/16/17

% Moisture	14.0	0.1	%		14.0			0.00	20	
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**Duplicate (P7H1602-DUP2)** Source: 7H15010-01 Prepared & Analyzed: 08/16/17

% Moisture	3.0	0.1	%		3.0			0.00	20	
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**Duplicate (P7H1602-DUP3)** Source: 7H15016-01 Prepared & Analyzed: 08/16/17

% Moisture	ND	0.1	%		1.0			200	20	
------------	----	-----	---	--	-----	--	--	-----	----	--

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

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: Nash Draw 42 CTB  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1601 - TX 1005**

**Blank (P7H1601-BLK1)**

Prepared & Analyzed: 08/15/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	66.4		"	50.0		133	70-130			S-GC

**LCS (P7H1601-BS1)**

Prepared & Analyzed: 08/15/17

C6-C12	855	25.0	mg/kg wet	1000		85.5	75-125			
>C12-C28	880	25.0	"	1000		88.0	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	64.2		"	50.0		128	70-130			

**LCS Dup (P7H1601-BSD1)**

Prepared & Analyzed: 08/15/17

C6-C12	857	25.0	mg/kg wet	1000		85.7	75-125	0.211	20	
>C12-C28	869	25.0	"	1000		86.9	75-125	1.18	20	
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	62.6		"	50.0		125	70-130			

**Duplicate (P7H1601-DUP1)**

Source: 7H07006-21

Prepared: 08/15/17 Analyzed: 08/16/17

C6-C12	53.6	125	mg/kg dry		ND					20
>C12-C28	14500	125	"		2730				137	20
Surrogate: 1-Chlorooctane	93.2		"	100		93.2	70-130			
Surrogate: o-Terphenyl	49.8		"	50.0		99.7	70-130			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw 42 CTB  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- 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: 8/16/2017

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.

**Arson & Associates, Inc.**  
Environmental Consultants

*Mark Larson / Carson Hughes*

507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

DATE: 8.14.17 PAGE 1 OF 1  
PO #: 170124-01 LAB WORK ORDER #: 7HIS002  
PROJECT LOCATION OR NAME: Abn Mex 42 CTH  
LAI PROJECT #: 17-0124-02 COLLECTOR: SJ

CHAIN-OF-CUSTODY

Data Reported to:

TRRP report?  
 Yes  No

TIME ZONE:  
Time zone/State:

Matrix/AM

Field Sample I.D.

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub>  NaOH

ICE

UNPRESERVED

PRESERVATION

ANALYSES

BTEX  MTBE

TRPH 418.1  TPH 1005  TPH 1006

GASOLINE MOD 8015  DIESEL - MOD 8015

VOC 8260  PAH 8270  HOLDPAH

8081 PESTICIDES  8151 HERBICIDES

TCLP - METALS (RCRA)  TCLP VOC

TCLP - PEST  HERB  Semi-VOC

TOTAL METALS (RCRA)  D.W. 200.8  TCLP

LEAD - TOTAL  TOX  FLASHPOINT

RCl  TSS  % MOISTURE  CYANIDE

TDS  TOX  FLASHPOINT

pH  HEXAVALENT CHROMIUM

EXPLOSIVES  PENTACHLORATE

CHLORIDE  ANIONS  ALKALINITY

FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/>	NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES	TURN AROUND TIME	LABORATORY USE ONLY
S-14 S1 S1 S1	1	8.14.17	15:10	S	1							<input checked="" type="checkbox"/> VOC 8260 <input checked="" type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>	NORMAL <input type="checkbox"/>	RECEIVED BY: <i>Carson Hughes</i>
S-14 NZ1	2	8.14.17	15:30	S	1							<input checked="" type="checkbox"/> VOC 8260 <input checked="" type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>	NORMAL <input type="checkbox"/>	RECEIVED BY: <i>Carson Hughes</i>
S-14 S21	3	8.14.17	15:22	S	1							<input checked="" type="checkbox"/> VOC 8260 <input checked="" type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>	NORMAL <input type="checkbox"/>	RECEIVED BY: <i>Carson Hughes</i>
S-14 E21	4	8.14.17	15:26	S	1							<input checked="" type="checkbox"/> VOC 8260 <input checked="" type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>	NORMAL <input type="checkbox"/>	RECEIVED BY: <i>Carson Hughes</i>
S-14 W21	5	8.14.17	15:20	S	1							<input checked="" type="checkbox"/> VOC 8260 <input checked="" type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>	NORMAL <input type="checkbox"/>	RECEIVED BY: <i>Carson Hughes</i>
TOTAL														

RELINQUISHED BY: (Signature)  
*Carson Hughes*

DATE/TIME  
8.15.17 7:15

RECEIVED BY: (Signature)  
*Carson Hughes*

TURN AROUND TIME  
NORMAL   
1 DAY   
2 DAY   
OTHER  *rush*

LABORATORY USE ONLY  
RECEIVING TEMP: 1.8 THERM #: LVCF  
CUSTODY SEALS -  BROKEN  INTACT  NOT USED  
 CARRIER BILL #  
 HAND DELIVERED

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



# Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: XTO Nash Draw Battery 42

Project Number: 17-0124-02

Location: New Mexico

Lab Order Number: 7H17002



**NELAP/TCEQ # T104704516-16-7**

Report Date: 08/17/17

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: XTO Nash Draw Battery 42  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-6 N 0-4'	7H17002-01	Soil	08/16/17 16:45	08-17-2017 08:16

Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**S-6 N 0-4'**  
**7H17002-01 (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	20.2	1.08	mg/kg dry	1	P7H1714	08/17/17	08/17/17	EPA 300.0	
% Moisture	7.0	0.1	%	1	P7H1701	08/17/17	08/17/17	ASTM D2216	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P7H1706	08/17/17	08/17/17	TPH 8015M	
Surrogate: 1-Chlorooctane		91.2 %	70-130		P7H1706	08/17/17	08/17/17	TPH 8015M	
Surrogate: o-Terphenyl		109 %	70-130		P7H1706	08/17/17	08/17/17	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	08/17/17	08/17/17	calc	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch P7H1701 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1701-BLK1)**

Prepared & Analyzed: 08/17/17

% Moisture	ND	0.1	%							
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**Duplicate (P7H1701-DUP1)**

Source: 7H16006-01

Prepared & Analyzed: 08/17/17

% Moisture	5.0	0.1	%		5.0			0.00	20	
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**Batch P7H1714 - \*\*\* DEFAULT PREP \*\*\***

**Blank (P7H1714-BLK1)**

Prepared & Analyzed: 08/17/17

Chloride	ND	1.00	mg/kg wet							
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**LCS (P7H1714-BS1)**

Prepared & Analyzed: 08/17/17

Chloride	330	1.00	mg/kg wet	400		82.5	80-120			
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**LCS Dup (P7H1714-BSD1)**

Prepared & Analyzed: 08/17/17

Chloride	350	1.00	mg/kg wet	400		87.5	80-120	5.88	20	
----------	-----	------	-----------	-----	--	------	--------	------	----	--

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.  
 P.O. Box 50685  
 Midland TX, 79710

Project: XTO Nash Draw Battery 42  
 Project Number: 17-0124-02  
 Project Manager: Mark Larson

Fax: (432) 687-0456

**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 P7H1706 - TX 1005**

**Blank (P7H1706-BLK1)**

Prepared & Analyzed: 08/17/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	63.3		"	50.0		127	70-130			

**LCS (P7H1706-BS1)**

Prepared & Analyzed: 08/17/17

C6-C12	970	25.0	mg/kg wet	1000		97.0	75-125			
>C12-C28	1020	25.0	"	1000		102	75-125			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	56.7		"	50.0		113	70-130			

**LCS Dup (P7H1706-BSD1)**

Prepared & Analyzed: 08/17/17

C6-C12	970	25.0	mg/kg wet	1000		97.0	75-125	0.0814	20	
>C12-C28	1010	25.0	"	1000		101	75-125	0.990	20	
Surrogate: 1-Chlorooctane	126		"	100		126	70-130			
Surrogate: o-Terphenyl	62.9		"	50.0		126	70-130			

**Duplicate (P7H1706-DUP1)**

Source: 7H17002-01

Prepared & Analyzed: 08/17/17

C6-C12	ND	26.9	mg/kg dry		ND				20	
>C12-C28	ND	26.9	"		ND				20	
Surrogate: 1-Chlorooctane	107		"	108		99.2	70-130			
Surrogate: o-Terphenyl	63.9		"	53.8		119	70-130			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

122

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: XTO Nash Draw Battery 42  
Project Number: 17-0124-02  
Project Manager: Mark Larson

Fax: (432) 687-0456

**Notes and Definitions**

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: 8/17/2017

Brent Barron, Laboratory Director/Technical Director

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Permian Basin Environmental Lab, L.P.

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123



**Arson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

DATE: 8.17.17 PAGE 11 OF 11  
PO #: \_\_\_\_\_ LAB WORK ORDER #: 1111002  
PROJECT LOCATION OR NAME: XTD NASH DRAW 42  
LAI PROJECT #: 11-0124-02 COLLECTOR: SKS

CHAIN-OF-CUSTODY

Data Reported to:

TRRP report?  Yes  No  
S=SOIL P=PAINT  
W=WATER SL=SLUDGE  
A=AIR OT=OTHER

TIME ZONE:  
Time zone/State:

Field Sample I.D. M 042619MM

Lab # \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Matrix S

# of Containers 1

PRESERVATION  
HCl \_\_\_\_\_  
HNO<sub>3</sub> \_\_\_\_\_  
H<sub>2</sub>SO<sub>4</sub>  NaOH   
ICE   
UNPRESERVED

- ANALYSES**
- BTEX  MTBE
  - TRPH 418.1  TPH 1005  TPH 1006
  - GASOLINE MOD 8015
  - DIESEL - MOD 8015
  - VOC 8260
  - SVOC 8270  PAH 8270  HOLDPAH
  - 8082 PESTICIDES  8151 HERBICIDES
  - TCLP - METALS (RCRA)  TCLP VOC
  - TCLP - PEST  Herb  OTHER LIST
  - TOTAL METALS (RCRA)  Semi-VOC
  - LEAD - TOTAL  D.W. 200.8  TCLP
  - RCI  TOX  FLASHPOINT
  - TDS  TSS  % MOISTURE
  - pH  HEXAVALENT CHROMIUM
  - EXPLOSIVES  PERCHLORATE
  - CHLORIDE ANIONS  ALKALINITY
- M 300**

FIELD NOTES

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	TURN AROUND TIME	LABORATORY USE ONLY:
<i>[Signature]</i>					NORMAL <input type="checkbox"/>	RECEIVING TEMP: <u>4.0</u> THERM # <u>WFL1</u>
<i>[Signature]</i>					1 DAY <input checked="" type="checkbox"/>	CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED
<i>[Signature]</i>					2 DAY <input type="checkbox"/>	CARRIER BILL # _____
<i>[Signature]</i>					OTHER <input type="checkbox"/>	HAND DELIVERED <input checked="" type="checkbox"/>
					<u>Push Now</u>	
TOTAL						

**Appendix C**  
**Waste Manifests**

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

S.D.R.  
#020

### NON-HAZARDOUS WASTE MANIFEST

NO **119281**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO: **#020**

G E N E R A T O R	3. COMPANY NAME <b>XTO Energy</b> PHONE NO. <b>(917) 970-2800</b>	4. ADDRESS <b>500 W Illinois # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>	5. PICK-UP DATE <b>8/14/2017</b>		
	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.
	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b> <b>CM</b>		
	b. <b>41420</b>				
	c.				
	d. <b>WT 49720 48640 39600</b>				
A	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H</b>		13. WASTE PROFILE NO. <b>TC 179,380</b> <b>910623</b>		

14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>		
NAME <b>JOE ONTIVEROS</b>	PHONE NO <b>575-887-4048</b>	24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE
--------------------	-----------	------

T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>	17. <b>TRANSPORTER (2)</b>
	NAME: <b>DR ENTERPRISE, LLC / MARK LARSON &amp; ASS</b>	NAME:
	TEXAS I.D. NO.	TEXAS I.D. NO.
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>	IN CASE OF EMERGENCY CONTACT:
	EMERGENCY PHONE: <b>(575) 441-7330</b>	EMERGENCY PHONE:
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material	19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material	
PRINTED/TYPED NAME <b>X</b>	PRINTED/TYPED NAME _____	
SIGNATURE <b>X</b> DATE <b>8/14/2017</b>	SIGNATURE _____ DATE _____	

D I S C P I O L S I A T O R Y	Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
---	---------------	---	------------------------

PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS
---	--------------

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE <b>[Signature]</b>	CELL NO. <b>[Redacted]</b>	DATE <b>8/14/2017</b>	TIME <b>9:35</b>
--	-------------------------------	--------------------------	---------------------

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119282**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **508. #021**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b> PHONE NO. <b>(817) 870-2900</b>	4. ADDRESS <b>500 W Illinois # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>	5. PICK-UP DATE <b>8/14/2017</b>	
	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY
N E R E A T O R	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b>	<b>CM</b>
	b. <b>41960</b>			
	c.			
	d. <b>WT 48940 53040 44320</b>			
A U T H O R I Z E D	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H</b>		13. WASTE PROFILE NO. <b>910623</b>	
	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>			
T R A N S P O R T E R S	NAME <b>JOE ONTIVEROS</b>	PHONE NO. <b>575-987-4048</b>	24-HOUR EMERGENCY NO.	
	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC			
D I S P O S I T O R	PRINTED/TYPED NAME	SIGNATURE	DATE	
	16. <b>TRANSPORTER (1)</b>		17. <b>TRANSPORTER (2)</b>	
D I S P O S I T O R	NAME: <b>OR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>	NAME:		
	TEXAS I.D. NO.	TEXAS I.D. NO.		
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>	IN CASE OF EMERGENCY CONTACT:		
	EMERGENCY PHONE: <b>(675) 311-7337</b>	EMERGENCY PHONE:		
D I S P O S I T O R	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material		19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material	
	PRINTED/TYPED NAME <b>Joe Ontiveros</b>		PRINTED/TYPED NAME _____	
	SIGNATURE _____ DATE <b>8/14/2017</b>		SIGNATURE _____ DATE _____	
D I S P O S I T O R	Lea Land, LLC	ADDRESS: <b>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</b>	PHONE: <b>575-887-4048</b>	
	PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS		
D I S P O S I T O R	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.			
	AUTHORIZED SIGNATURE <b>Joe Ontiveros</b>	CELL NO.	DATE <b>8/14/2017</b>	TIME <b>145</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR  
# 006

### NON-HAZARDOUS WASTE MANIFEST

NO **119283**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **# 006**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>	5. PICK-UP DATE <b>8/14/2017</b>				
	PHONE NO. <b>(817) 870-2800</b>	CITY STATE ZIP <b>Midland Tx 79701</b>	6. TNRCC I.D. NO.				
N E R A T O R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #	
	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b> <b>CM</b>				
	b. <b>4420</b>						
	c.						
A U T H O R I Z E D	d. <b>WT 49420 42740 42380</b>						
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>		13. WASTE PROFILE NO. <b>910623</b>				
T R A N S P O R T E R S	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>						
	NAME <b>JOE ONTIVEROS</b>		PHONE NO. <b>575-887-3048</b>		24-HOUR EMERGENCY NO.		
D I S P O S I T A L Y	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC						
	PRINTED/TYPED NAME		SIGNATURE		DATE		
D I S P O S I T A L Y	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>			
	NAME: <b>SDR ENTERPRISE, LLC / MARK LARSON &amp; ASSOCIATES</b>			NAME:			
D I S P O S I T A L Y	TEXAS I.D. NO.			TEXAS I.D. NO.			
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>			IN CASE OF EMERGENCY CONTACT:			
D I S P O S I T A L Y	EMERGENCY PHONE: <b>(575) 411-7330</b>			EMERGENCY PHONE:			
	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material			
D I S P O S I T A L Y	PRINTED/TYPED NAME <b>Nos Ponce</b>			PRINTED/TYPED NAME			
	SIGNATURE <b>Nos Ponce</b> DATE <b>8/14/2017</b>			SIGNATURE DATE			
D I S P O S I T A L Y	Lea Land, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM		PHONE: 575-887-4048		
	PERMIT NO. WM-01-035 - New Mexico		20. COMMENTS				
D I S P O S I T A L Y	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.						
	AUTHORIZED SIGNATURE <b>Joe Ontiveros</b>		CELL NO.		DATE <b>8/14/2017</b>		TIME

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR

### NON-HAZARDOUS WASTE MANIFEST

NO **119309**

1. PAGE     OF    

2. TRAILER NO. **021**

G E N E R A T O R	3. COMPANY NAME <b>KTO-Energy</b> PHONE NO. <b>(917) 970 2800</b>		4. ADDRESS <b>500 Willinots # 100</b> CITY <b>Midland</b> STATE <b>Tx</b> ZIP <b>79701</b>			5. PICK-UP DATE <b>8/15/2017</b>		
	7. NAME OR DESCRIPTION OF WASTE SHIPPED: a. <b>Non-Regulated, Non Hazardous Waste</b> b. c. d. <b>WT. 43000 46,460 46,720</b>					8. CONTAINERS No. <b>1</b> Type <b>CM</b>	9. TOTAL QUANTITY	10. UNIT Wt/Vol.
12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 42 H</b>							13. WASTE PROFILE NO. <b>910623</b>	

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME <b>JOE ONTIVEROS</b>	PHONE NO <b>575-887-4048</b>	24-HOUR EMERGENCY NO.
------------------------------	---------------------------------	-----------------------

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE
--------------------	-----------	------

T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>		17. <b>TRANSPORTER (2)</b>	
	NAME: <b>DR ENTERPRISE, LLC / MARK LARSON &amp; ASS</b>		NAME:	
TEXAS I.D. NO.		TEXAS I.D. NO.		
IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>		IN CASE OF EMERGENCY CONTACT:		
EMERGENCY PHONE: <b>(575) 141-7330</b>		EMERGENCY PHONE:		
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material		19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material		
PRINTED/TYPED NAME <b>Lea Land</b>		PRINTED/TYPED NAME		
SIGNATURE <b>[Signature]</b> DATE <b>8/15/2017</b>		SIGNATURE DATE		

D I S P O S I T O R Y	Lea Land, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
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PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS
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21. **DISPOSAL FACILITY'S CERTIFICATION:** I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE <b>Santas Gonzalez</b>	CELL NO.	DATE <b>8/15/2017</b>	TIME <b>4:00</b>
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GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119310**

1. PAGE     OF    

2. TRAILER NO. **006**

<b>G E N E R A T O R</b>	3. COMPANY NAME <b>XTD Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>			5. PICK-UP DATE <b>8/15/2017</b>	
	PHONE NO. <b>(817) 870-2800</b>	CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>	6. TNRCC I.D. NO.	
<b>N E R A T I O N A L</b>	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	9. TOTAL QUANTITY
	a. <b>Non-Regulated, Non Hazardous Waste</b>				<b>1</b>	<b>CM</b>
	b. <b>44,080 43,260</b>					
	c.					
<b>A U T H O R I Z E D</b>	d. <b>40,460 45,160 45,260</b>					
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>				13. WASTE PROFILE NO. <b>910623</b>	
<b>T R A N S P O R T E R S</b>	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>					
	NAME <b>JOE ONTIVEROS</b>		PHONE NO. <b>575-887-4048</b>		24-HOUR EMERGENCY NO.	
<b>O R I G I N A L</b>	15. <b>GENERATOR'S CERTIFICATION:</b> I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC					
	PRINTED/TYPED NAME			SIGNATURE		DATE
	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>		
	NAME: <b>DR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>			NAME: <b>SHANNON RUSK</b>		
TEXAS I.D. NO.			TEXAS I.D. NO.			
IN CASE OF EMERGENCY CONTACT: <b>(575) 441-7330</b>			IN CASE OF EMERGENCY CONTACT:			
EMERGENCY PHONE:			EMERGENCY PHONE:			
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material			
PRINTED/TYPED NAME <b>Isauro Garcia N</b>			PRINTED/TYPED NAME _____			
SIGNATURE <b>Isauro Garcia N</b>			SIGNATURE _____			
DATE <b>8/15/2017</b>			DATE _____			
<b>D I S P O S I T O R Y</b>	Lea Land, LLC		ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM		PHONE: 575-887-4048	
	PERMIT NO. <b>WM-01-035 - New Mexico</b>		20. COMMENTS			
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.					
AUTHORIZED SIGNATURE <b>Antonio Gonzalez</b>			CELL NO.		DATE <b>8/15/2017</b>	TIME <b>9:05</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

3DR

### NON-HAZARDOUS WASTE MANIFEST

NO **119311**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **020**

G E N E R A T O R	3. COMPANY NAME <b>XTO Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>			5. PICK-UP DATE <b>8/15/2017</b>				
	PHONE NO. <b>(817) 870-2800</b>	CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>	6. TNRCC I.D. NO.				
N E R A T O R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>				<b>1</b>	<b>CM</b>			
	b. <b>48740</b>								
	c.								
A U T H O R I Z E D	d. <b>WT 46280 47270 50780</b>								
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB # 12 H</b>						13. WASTE PROFILE NO. <b>910623</b>		
14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>									
NAME <b>JOE ONTIVEROS</b>			PHONE NO <b>575-887-4018</b>			24-HOUR EMERGENCY NO.			
15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC									
PRINTED/TYPED NAME					SIGNATURE			DATE	
T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>				17. <b>TRANSPORTER (2)</b>				
	NAME: <b>DR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>				NAME:				
	TEXAS I.D. NO.				TEXAS I.D. NO.				
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>				IN CASE OF EMERGENCY CONTACT:				
	EMERGENCY PHONE: <b>(575) 441-7330</b>				EMERGENCY PHONE:				
18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material					19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material				
PRINTED/TYPED NAME					PRINTED/TYPED NAME				
SIGNATURE					SIGNATURE				
DATE					DATE				
D I S P O S I T O R	Lea Land, LLC			ADDRESS: <b>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</b>			PHONE: <b>575-887-4048</b>		
	PERMIT NO. <b>WM-01-035 - New Mexico</b>			20. COMMENTS					
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.								
AUTHORIZED SIGNATURE					CELL NO.		DATE		TIME
<b>[Signature]</b>							<b>8/15/2017</b>		<b>9:30</b>

GENERATOR: COPIES 1 & 6      DISPOSAL SITE: COPIES 2 & 3      TRANSPORTERS: COPIES 4 & 5



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

TRIP# CROWN  
SDB

### NON-HAZARDOUS WASTE MANIFEST

NO **119312**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **50B**

G E	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>	5. PICK-UP DATE <b>8/15/2017</b>			
	PHONE NO. <b>(817) 870-2800</b>	CITY STATE ZIP <b>Midland Tx 79701</b>	6. TNRCC I.D. NO.			
N E R A	7. NAME OR DESCRIPTION OF WASTE SHIPPED:		8. CONTAINERS No. Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>		<b>1</b> <b>CM</b>			
	b. <b>40,440</b>					
	c.					
	d. WT: <b>41,820 40880 44,140</b>					
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>			13. WASTE PROFILE NO. <b>910623</b>		

14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>		
NAME <b>JOE ONTIVEROS</b>	PHONE NO <b>375-887-4048</b>	24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE
--------------------	-----------	------

T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>	17. <b>TRANSPORTER (2)</b>
	NAME: <b>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>	NAME:
	TEXAS I.D. NO.	TEXAS I.D. NO.
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>	IN CASE OF EMERGENCY CONTACT:
	EMERGENCY PHONE: <b>(575) 441-7333</b>	EMERGENCY PHONE:
	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material	19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material
	PRINTED/TYPED NAME <b>ZELDER + COMPANY</b>	PRINTED/TYPED NAME _____
	SIGNATURE <b>[Signature]</b> DATE <b>8/15/2017</b>	SIGNATURE _____ DATE _____

D F I S C I P O L S I A T O R Y	Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
	PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.			
AUTHORIZED SIGNATURE <b>[Signature]</b>	CELL NO.	DATE <b>8/15/2017</b>	TIME <b>9:40</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

*Triple Crown*

### NON-HAZARDOUS WASTE MANIFEST

NO **119315**

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. **# 501**

G E N E R A T O R	3. COMPANY NAME <i>KTO Energy</i>	4. ADDRESS <i>500 W Illinois # 100</i>			5. PICK-UP DATE <i>8/15/2017</i>	
	PHONE NO. <i>(817) 870-2800</i>	CITY <i>Midland</i>	STATE <i>Tx</i>	ZIP <i>79701</i>	6. TNRCC I.D. NO.	
N E R A T O R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	9. TOTAL QUANTITY
	a. <i>Non-Regulated, Non Hazardous Waste</i>				1	CM
	b.					
	c.					
A T T E S T E R	d. WT. <i>41,280 41,480 40,880</i>					
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <i>NASH UNIT CTB #42 H</i>				13. WASTE PROFILE NO. <i>910623</i>	
T R A N S P O R T E R	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>					
	NAME <i>JOE ONTIVEROS</i>		PHONE NO. <i>575-887-4048</i>		24-HOUR EMERGENCY NO.	
O R T E R	15. <b>GENERATOR'S CERTIFICATION:</b> I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC					
	PRINTED/TYPED NAME			SIGNATURE		DATE
T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>			17. <b>TRANSPORTER (2)</b>		
	NAME: <i>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</i>			NAME:		
	TEXAS I.D. NO.			TEXAS I.D. NO.		
	IN CASE OF EMERGENCY CONTACT: <i>SHANNON RUSK</i> <i>(575) 441-7339</i>			IN CASE OF EMERGENCY CONTACT:		
D I S P O S I T O R Y	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material			19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material		
	PRINTED/TYPED NAME <i>Jim Galvan</i>			PRINTED/TYPED NAME _____		
	SIGNATURE <i>Jim Galvan</i> DATE <i>8/15/2017</i>			SIGNATURE _____ DATE _____		
D I S P O S I T O R Y	Lea Land, LLC		ADDRESS: <i>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</i>		PHONE: <i>575-887-4048</i>	
	PERMIT NO. <i>WM-01-035 - New Mexico</i>			20. COMMENTS		
	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.					
A U T H O R I Z E D	AUTHORIZED SIGNATURE <i>Santos Donzales</i>		CELL NO.		DATE <i>8/15/2017</i>	
					TIME <i>9:45</i>	

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **119329**

1. PAGE     OF    

2. TRAILER NO. **020**

G E N E R A T O R	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>			5. PICK-UP DATE <b>8/18/2017</b>				
	PHONE NO. <b>(817) 870-2800</b>	CITY <b>Midland</b>	STATE <b>Tx</b>	ZIP <b>79701</b>	6. TNRCC I.D. NO.				
N E M P L Y	7. NAME OR DESCRIPTION OF WASTE SHIPPED:				8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>				<b>1</b>	<b>CM</b>			
	b.								
	c.								
A U T H O R I Z E D	d. <b>WT 40460 40,000 51,520</b>								
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>						13. WASTE PROFILE NO. <b>910623</b>		
T R A N S P O R T E R S	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>								
	NAME <b>JOE ONTIVEROS</b>			PHONE NO <b>575-887-4048</b>			24-HOUR EMERGENCY NO.		
D I S P O S I T Y	15. <b>GENERATOR'S CERTIFICATION:</b> I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC								
	PRINTED/TYPED NAME			SIGNATURE			DATE		
D I S P O S I T Y	16. <b>TRANSPORTER (1)</b>				17. <b>TRANSPORTER (2)</b>				
	NAME: <b>FOR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>				NAME:				
D I S P O S I T Y	TEXAS I.D. NO.				TEXAS I.D. NO.				
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK</b>				IN CASE OF EMERGENCY CONTACT:				
D I S P O S I T Y	EMERGENCY PHONE: <b>(575) 441-7330</b>				EMERGENCY PHONE:				
	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material				19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material				
D I S P O S I T Y	PRINTED/TYPED NAME <b>Shannon Rusk</b>				PRINTED/TYPED NAME _____				
	SIGNATURE <b>[Signature]</b> DATE <b>8/18/2017</b>				SIGNATURE _____ DATE _____				
D I S P O S I T Y	Lea Land, LLC			ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM			PHONE: 575-887-4048		
	PERMIT NO. WM-01-035 - New Mexico				20. COMMENTS				
D I S P O S I T Y	21. <b>DISPOSAL FACILITY'S CERTIFICATION:</b> I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.								
	AUTHORIZED SIGNATURE <b>[Signature]</b>				CELL NO.		DATE <b>8/18/2017</b>		TIME <b>9:45</b>

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

SDR  
021

**NON-HAZARDOUS WASTE MANIFEST** NO **119330** 1. PAGE \_\_\_ OF \_\_\_ 2. TRAILER NO. **021**

G E	3. COMPANY NAME <b>XTO-Energy</b>	4. ADDRESS <b>500 W Illinois # 100</b>	5. PICK-UP DATE <b>8/16/2017</b>
	PHONE NO. <b>(817) 970-2800</b>	CITY STATE ZIP <b>Midland TX 79701</b>	6. TNRCC I.D. NO.

N E R	7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
	a. <b>Non-Regulated, Non Hazardous Waste</b>	No. <b>1</b> Type <b>CM</b>			
	b.				
	c.				

A	d. <b>WT 45,680 44,040</b>				
	12. COMMENTS OR SPECIAL INSTRUCTIONS: <b>NASH UNIT CTB #42 H</b>	13. WASTE PROFILE NO. <b>910623</b>			

T	14. <b>IN CASE OF EMERGENCY OR SPILL, CONTACT</b>		
	NAME <b>JOE ONTIVEROS</b>	PHONE NO. <b>575-887-4048</b>	24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

R	PRINTED/TYPED NAME	SIGNATURE	DATE

T R A N S P O R T E R S	16. <b>TRANSPORTER (1)</b>	17. <b>TRANSPORTER (2)</b>
	NAME: <b>SDR ENTERPRISE LLC / MARK LARSON &amp; ASS</b>	NAME:
	TEXAS I.D. NO.	TEXAS I.D. NO.
	IN CASE OF EMERGENCY CONTACT: <b>SHANNON RUSK (575) 411-7330</b>	IN CASE OF EMERGENCY CONTACT:

R	18. <b>TRANSPORTER (1):</b> Acknowledgment of receipt of material	19. <b>TRANSPORTER (2):</b> Acknowledgment of receipt of material
	PRINTED/TYPED NAME <b>Eric Rodri</b>	PRINTED/TYPED NAME _____
	SIGNATURE <b>[Signature]</b> DATE <b>8/16/2017</b>	SIGNATURE _____ DATE _____

D I S C P I O L S I A T Y	Lea Land, LLC	ADDRESS: <b>Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM</b>	PHONE: <b>575-887-4048</b>
---	---------------	---	-------------------------------

PERMIT NO. <b>WM-01-035 - New Mexico</b>	20. COMMENTS
---	--------------

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Herby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE <b>[Signature]</b>	CELL NO.	DATE <b>8/16/2017</b>	TIME <b>9:00</b>
--	----------	--------------------------	---------------------

**Appendix D**

**Photographs**

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Location Sign August 10, 2017



Location Viewing South Prior to Excavation, April 12, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Location Viewing North, June 2, 2017



Location Viewing East Prior to Remediation and Chloride Delineation at DP-11, August 10, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Soil Excavation near DP-7 Viewing Southwest, August 10, 2017



Soil Excavation along South Side of Spill Area Viewing East, August 10, 2017



Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Soil Excavation at S-15 Viewing North, August 11, 2017



Excavation Area Viewing West, August 11, 17

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Final Excavation Area Viewing West, August 16, 2017



Final Excavation Area Viewing South, August 16, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Backfill of Excavation Viewing Southwest, August 21, 2017



Backfill of Excavation Viewing Southwest, August 22, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Water Packing of Excavation Viewing South, August 22, 2017



Backfill of Excavation Viewing South, August 23, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



Final Backfill Viewing Southwest, August 23, 2017



Final Backfill Viewing North, August 23, 2017

Remediation Report  
XTO Energy, Inc.  
Nash Draw Battery #42



New Firewall Viewing Northwest, August 23, 2017

**Appendix E**  
**Initial and Final C-141**

NM OIL CONSERVATION

ARTESIA DISTRICT

State of New Mexico

Form C-141

Energy Minerals and Natural Resources

NOV 03 2016

Revised August 8, 2011

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

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

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

RECEIVED

1630929137

Release Notification and Corrective Action

1630929291

OPERATOR

X Initial Report  Final Report

Name of Company XTO Energy, Inc. 324373	Contact John Robinson
Address 500 West Illinois, Suite 100 Midland, TX 79701	Telephone No. 575-44-5199
Facility Name Nash 42 CTB	Facility Type Battery

Surface Owner BLM	Mineral Owner	API No.
-------------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	18	23 S	30 E					Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

NATURE OF RELEASE

Type of Release Oil	Volume of Release: 124.71 barrels	Volume Recovered 121 barrels
Source of Release Pop off tank	Date and Hour of Occurrence 10-27-16 9:00pm	Date and Hour of Discovery 10-28-16 7:30am
Was Immediate Notice Given? X Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Shelly Tucker BLM and Heather Patterson NMOCD	
By Whom? John Robinson	Date and Hour 10-28-16 11:00 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Rod between float and oil dump broke causing FWKO to dome out and overflow 210 pop off tank. Cleaned up all oil possible and pumped into spare water tank to be circulated through system.

Describe Area Affected and Cleanup Action Taken.\*  
Leak stayed inside berm. Will clean up according to BLM and NMOCD standards

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

Signature:	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: John Robinson	Approved by Environmental Specialist:	
Title: Maintenance Foreman	Approval Date: 11/4/16	Expiration Date: N/A
E-mail Address: john_robinson@xtoenergy.com	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: 11-3-16	Phone: 575-441-5199	

\* Attach Additional Sheets If Necessary

2RP-3976



**Patterson, Heather, EMNRD**

---

**From:** Robinson, John <John\_Robinson@xtoenergy.com>  
**Sent:** Thursday, November 03, 2016 1:52 PM  
**To:** stucker@blm.gov; Patterson, Heather, EMNRD  
**Subject:** FW: form  
**Attachments:** Form-C141.pdf

---

**From:** Snyder, Kathy  
**Sent:** Thursday, November 03, 2016 2:48 PM  
**To:** Robinson, John  
**Subject:** form

***Kathy Snyder***

Office Clerk

XTO Energy, Inc

PO Box 700

Eunice, NM 88231

Phone: 575-394-2089

Fax: 575-394-3362

Email: [Kathy\\_snyder@xtoenergy.com](mailto:Kathy_snyder@xtoenergy.com)

An ExxonMobil Subsidiary

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

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

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company XTO Energy Inc. 324373	Contact Luke Williams
Address 500 West Illinois, Suite 100 Midland TX 79701	Telephone No. 423-682-8873
Facility Name Nash 42	Facility Type Battery

Surface Owner State	Mineral Owner State	API No.
---------------------	---------------------	---------

**LOCATION OF RELEASE**

Unit Letter E	Section 18	Township 23 S	Range 30 E	Feet from the 2100	North/South Line North	Feet from the 615	East/West Line West	County Eddy
------------------	---------------	------------------	---------------	-----------------------	---------------------------	----------------------	------------------------	----------------

Latitude 32.306495° Longitude 1103.927575°

**NATURE OF RELEASE**


Type of Release Oil	Volume of Release 124.71 barrels	Volume Recovered 121 barrels
Source of Release Pop off tank	Date and Hour of Occurrence 10-27-16 9:00pm	Date and Hour of Discovery 10-28-16 7:30am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Shelly Tucker BLM and Heather Patterson NMOCD	
By Whom?	Date and Hour 10-28-16 11:00am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Rod between float and oil dump broke causing FWKO to dome out and overflow 210 pop off tank. Cleaned up all oil possible and pumped into spare water tank to be circulated through system.

Describe Area Affected and Cleanup Action Taken.\*  
Soil samples were collected at 12 locations (DP-1 through DP-12 with direct push technology. Lateral and vertical extent of impact was defined and delineation report was submitted to OCD and SLO on June 30, 2017 and approved on July 27, 2017. Remediation was performed between August 10 – 23, 2017, and included removal of soil to a depth of 18 inches over the spill area, additional soil removal to about 5 feet (S-15) and 12 feet (DP-6) below ground surface (bgs). Confirmation samples were collected from the excavation bottom and from the sidewalls of deeper (5 and 12 foot deep) excavations. Chloride was delineated vertically to below 600 mg/Kg in soil samples from 3 air rotary drilled borings drilled between 20 and 30 feet bgs. Approximately 805.82 tons/cubic yards of contaminated soil was hauled and disposed at Lea Land Landfill, LLC. Excavation backfilling was approved by OCD on August 18, 2017. The excavations were backfilled with caliche on August 21 – 23, 2017.

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

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Luke Williams	Approved by Environmental Specialist:	
Title: EHS Coordinator	Approval Date:	Expiration Date:
E-mail Address: luke_williams@xtoenergy.com	Conditions of Approval: 2RP-3976	Attached <input type="checkbox"/>
Date: August 24, 2017	Phone: (432) 682-8873	

\* Attach Additional Sheets If Necessary

## Littrell, Kyle

---

**From:** Williams, Luke  
**Sent:** Monday, January 22, 2018 4:24 PM  
**To:** Littrell, Kyle  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

---

**From:** Weaver, Crystal, EMNRD [mailto:Crystal.Weaver@state.nm.us]  
**Sent:** Thursday, January 18, 2018 4:13 PM  
**To:** Mark Larson <Mark@laenvironmental.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; 'Groves, Amber' <agroves@slo.state.nm.us>  
**Cc:** Williams, Luke <Luke\_Williams@xtoenergy.com>; MNaranjo@slo.state.nm.us; Honea, Tammy <thonea@slo.state.nm.us>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Because Mark has attested to the integrity of the rest of the liner I will go ahead and move forward with the rest of this approval, however, if next time photos can be taken of the liner after the tanks are removed, gravel/fill material is removed etc. that would be very helpful. When secondary lined containment is said to have contained some or have fully contained all of a spill the integrity check efforts combined with the integrity statement as well as before (pics of standing fluid) after photos (pics of liner after secondary containment is cleaned out and inspection of liner is completed) are something we will need to see every time secondary containment is involved.

Also in order to achieve approval from the State Land Office, now that Amber Groves is no longer working there, I believe either Mark Naranjo or Tammy Honea may be members of the SLO who are helping out with that at the current moment. I am not certain so I made sure to at least tag them on this email so that you could figure it out with them from here.

Thank you.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Wednesday, December 27, 2017 11:47 AM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>

**Cc:** 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

First I want to apologize for not responding sooner as your email was caught up in our mail server and took IT to free up. The attached photographs were presented in the delineation report (June 30, 2017). The loose poly liner beneath the remediation area where large holes were observed was removed prior to performing remediation in the area east of the tanks. The liner under the tanks west of the remediation area appeared intact. Fluid was removed from the liner beneath the tanks with a vacuum truck. A roust-a-bout crew removed gravel from the liner with shovels, wheel borrows and a hydrovac truck. LAI inspected the liner after gravel was removed and observed a few small punctures where the roust-a-bout crew nicked the liner while removing gravel. Standing fluid was observed in the lined sumps between the tanks near the center of the battery and in the northeast corner of the battery prior to removing fluids with a vacuum truck. Standing fluid confirms liner integrity. No nicks or cuts were observed in the liner within the sumps. The liner appeared anchored on all sides. The spray-in liner was installed without removing the tanks. Please contact Luke Williams with XTO at (432) 682-8873 or email [Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, November 30, 2017 1:01 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Groves, Amber'  
**Cc:** Sarah Johnson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Mark,

I was just thinking about this one on the ride home yesterday after I sent the email below and I was wondering a few other things on it. I haven't closed it out in our system or anything yet so I wanted to get your answers on my questions below before I do.

I know there was breaks/tears in the liner in the area in between the battery tanks and that one overflow tank but I noticed all the rest of the area around the actual tanks of the battery no sampling or excavating was done. Those battery tanks were taken out so that the spray in secondary containment could be installed correct? So I am assuming then that no further issues were found with the liner in and around or under the battery tanks correct? Or anywhere else for that matter regarding that liner? I noticed also that once the liner went under all of the pipeline that are along side the battery tanks it looked really loose and not pulled tight or anything does it end up keying in at all or does it just stop existing once you get to the bermed edge of the well pad?

Please advise.

Thank you,

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Weaver, Crystal, EMNRD  
**Sent:** Wednesday, November 29, 2017 2:00 PM  
**To:** 'Mark Larson' <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'Dudley\_McMinn@xtoenergy.com' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>; Sarah Johnson <[SJohnson@laenvironmental.com](mailto:SJohnson@laenvironmental.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash Draw #42 CTB \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Dudley/Mark,

Your request for closure of the above referenced releases are approved. State Land Office locations will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

**\*\*As a side note item doing a delineation on the fly during excavation efforts is not something that OCD is prone to regularly agree to. OCD would prefer to have the impacted areas fully delineated prior to implementation of remedial actions.\*\***

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Friday, August 25, 2017 12:23 PM

**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>

**Cc:** 'Dudley\_McMinn@xtoenergy.com' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>; Sarah Johnson <[SJohnson@laenvironmental.com](mailto:SJohnson@laenvironmental.com)>

**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

All,

Please use the link below to download the remediation reports for 2RP-3976 and 2RP-4253 relating to the crude oil and produced water spills at the XTO Energy, Inc., Nash Draw #42 CTB in Eddy County, New Mexico. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/882fafa7-e31b-4edd-b47d-2fefae38aa11>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205

Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

---

**From:** Bratcher, Mike, EMNRD [<mailto:mike.bratcher@state.nm.us>]  
**Sent:** Friday, August 18, 2017 4:39 PM  
**To:** Mark Larson; Weaver, Crystal, EMNRD; 'Groves, Amber'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

RE: 2RP-3976 & 2RP-4235

Mark,

Based on data provided, you are approved to commence backfill operations. Sorry for a perceived delayed response, but if we actually worked everything in the order received, it would be at least a few weeks before you got a response. We do appreciate the thorough job and uncomplicated reporting you provide, along with XTO's willingness and cooperation in maintaining an environmentally solid operation. I do understand the urgency for this particular project and apologize for any inconvenience.

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Friday, August 18, 2017 8:27 AM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Mike,

This summary is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of XTO Energy Inc. (XTO) to present the delineation and remediation of two (2) spills (2RP-3976 and 2RP-4253) at the Nash Draw CTB #42. LAI

requests approval to backfill the excavations so that XTO may install a spray-in liner and resume production. The final reports for 2RP-3976 and 2RP-4253 will be submitted after the excavations area backfilled along with the final C-141s.

On August 8 - 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO had the gun barrel and overflow tanks removed from the remediation area. Immediately following removal of the tanks, Scarborough Drilling mobilized an air rotary rig to DP-11 for the purpose of delineating chloride as requested by OCD. Soil samples were collected with a jam tube sampler at 10, 15, 20, 25 and 30 feet below ground surface (bgs) and were analyzed for chloride by EPA Method 300. Chloride was below 250 mg/Kg in all samples concluding successful vertical delineation. The poly liner was removed from the remediation area and disposed at Lea Land Landfill. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Additional soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner and from areas beneath the tanks and where staining was observed beneath the liner. The area around DP-8 was excavated to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the area north of DP-12 where the recent produced water spill (2RP-4253) had encroached. On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by Methods SW-846-8021B, SW-846-8015M and 300, respectively.

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

S-5, 5.0' – 5.5' (5,450 mg/Kg)  
S-6, 4.5' – 5.0' (9,780 mg/Kg)  
S-10, 1.5' – 2.0' (3,953 mg/Kg)  
S-14, 1.5' – 2.0' (1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

S-5, 2' East (3,580 mg/Kg)  
S-6, 4' North (1,310 mg/Kg)  
S-6, 2' South (18,450 mg/Kg)  
S-6, 2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

S-13, 1.5' – 2.0' (8,210 mg/Kg)  
S-14, 1.5' – 2.0' (1,050 mg/Kg)  
S-16, 0.5' – 1.0' (3,810 mg/Kg)

Between August 14 – 16, 2017, additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom sample (5.0' – 5.5') at S-14. Scarborough Drilling collected samples every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet at S-13 and 20 feet at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Please refer to Table 2. The excavation and sample location drawing is presented as Figure 2. Photographs are attached. Approximately 525.5 tons/cubic yards of contaminated soil was hauled to Le Land Landfill, LLC. Clean caliche was hauled back from Lea Land for backfilling the excavations. LAI, on behalf of XTO, requests OCD approval to backfill the excavations so that XTO may begin installing the spray-in liner and resume production. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701



Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Mark Larson  
**Sent:** Wednesday, August 09, 2017 7:01 PM  
**To:** 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,  
The tanks (gun barrel and overflow) were emptied today and will be removed on Thursday morning to allow access for equipment to perform remediation. We plan to collect additional samples tomorrow from SB-11 for vertical delineation.  
Mark

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**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Monday, August 07, 2017 9:27 AM  
**To:** Mark Larson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Good morning,

Thank you Mark. I may try to make it out to this one if Amber can not.

**Crystal Weaver**  
Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Sunday, August 6, 2017 6:58 PM  
**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Amber,

This is to inform you that remediation of 2RP-3976 and 2RO-4253 will commence on Monday, August 9, 2017. Please contact Dudley McMinn with XTO Energy, Inc., at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
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[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 27, 2017 5:21 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'McMinn, Dudley'; 'Williams, Luke'  
**Cc:** 'Tucker, Shelly'; Groves, Amber  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

First off thank you Mark for your answers to my questions.

I was checking a few clerical details and I wanted to bring a few more things to all of your attention. On the first spill, given case number 2RP-3976, there was no API number provided on the initial C-141 and since it was mentioned that the release was involving a battery our administrative personnel entered this in our system and gave it a facility number instead of relating it to the API for this location. However, on the second spill, given case number 2RP-4253, an API number was provided on the initial C-141 so our administrative personnel entered this one into our system under the API number. So now we have records for two spills recorded in two different places in our system that in fact actually happened at this same site. Please try to remain consistent on what you go with for C-141 documentation and of course for any documentation.

Also I show in my records that this site is on State Land Office administered service but when I look back in the well file history for this site I see documents being provided to the BLM for this facility. Since I have this site as SLO land I am adding Amber Groves, from the State Land Office, to this email chain and I am thus requesting that someone please help to clarify this matter. **So Shelly or Amber can you all please clear up who is the surface owner for this location?**

Finally, getting back to Mark's answers to my questions.

OCD accepts your proposal for remediation of the above mentioned releases (2RP-3976 and 2RP-4235) with the following conditions:

- Within the answers provided below it is stated that Larson Associates Inc. on behalf of XTO will be submitting samples for laboratory testing of *“total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.”* However, OCD notes that testing for BTEX was not mentioned in either of these statements. OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- Since the second release spanned beyond the extent of the first release it is OCD’s understanding that all impacted areas will be delineated during remedial activities. Excavation depths may vary based on new analytical data.
- Again as mentioned above in bullet point 1, because your response statement below, to my sampling request for areas where there are holes in the liner, does not include the mentioning of sampling for BTEX I want to make it clear that OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- OCD concurs with the answer provided below regarding sampling point DP-11.

Please advise once remedial activities have been scheduled. If this is Federal surface then it will require like approval from BLM, if this is State Land Office surface than it will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## Crystal Weaver

Environmental Specialist

OCD – Artesia District II

811 S. 1<sup>st</sup> Street

Artesia, NM 88210

Office: 575-748-1283 ext. 101

Cell: 575-840-5963

Fax: 575-748-9720

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Friday, July 21, 2017 7:24 AM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The following is submitted on behalf of XTO Energy, Inc. (XTO) in response to your questions below:

**Question:** All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?

**Response:** *it is my opinion that the depth of excavation will be similar to what is proposed since the initial spill was mostly crude oil with an small amount of produced water and the recent spill is mostly produced water with a small amount of crude oil. Soil will be excavated until total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

**Response:** *The area east of the tank battery covered by the initial spill is unlined. The recent spill east of the tank battery occurred the lined area where holes are shown in the liner. Soil samples will be collected from the lined area covered by the spill where holes are observed. The soil samples will be analyzed for TPH as determined by EPA SW-846 Method 8015 for GR, DRO and ORO and chloride by Method 300. Soil will be excavated until TPH in bottom sample and sidewall samples where the excavation exceeds 2 feet is below the RRAL (1,000 mg/Kg). Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

**Response:** *A backhoe may be used to confirmed the chloride concentration in soil at DP-11, 5 – 6 feet. The sample will be analyzed by Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** also just noticed one last thing, the label on your Table 1 says that the table is for 2RP-1486, is that a typo?

**Response:** *Good catch! I used an earlier table as a template and didn't change the remediation permit number. Please find the corrected table attached.*

**Question:** also just noticed one last thing, the remediation permit number you refer to for the recent spill (2RP-4235), is that a typo?

**Response:** *This remediation permit (2RP-4235) is for a release at the Devon Energy Production Company Cotton Draw Unit 84! It appears the 3 and 5 were juxtaposed and should be 2RP-4253.*

Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 13, 2017 2:07 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Tucker, Shelly'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Thank you for the submission of this most recent plan and for the submission of the prior one as well. OCD is fine with the idea of remediating both spills at the same time while you have equipment and workers mobilized, etc. and we are fine with both releases being written about in the same work plan and closure report etc., however, the spills will still be treated as separate cases as far as each will be referred to by its individual tracking number and DOR, and each will have to be closed out on our end as individual incidents. So each will need final C-141s.

With that being said, I have looked things over and I have a few questions for you all:

- All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?
- Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

- Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

I look forward to receiving a response to my questions/requests.

If you have any need for clarification or have any questions of your own please contact myself or Mike Bratcher here at the District II Office.

Thank you,

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Monday, July 3, 2017 4:06 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Tucker, Shelly' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** Re: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Mike/Crystal/Shelly,  
Larson & Associates, Inc. (LAI) submits the delineation report and remediation plan for a crude oil spill at the XTO Energy, Inc. (XTO) Nash Draw 42 CTB. Since submitting the plan on May 23, 2017, XTO reported another spill at the facility on June 14, 2017, prior to receiving OCD approval of the remediation plan for the crude oil spill. XTO would like the OCD to consider allowing remediation of both spills under the remediation plan presented herein. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/aac0757d-4e60-4e7d-b88c-f8ac9693cab9>

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
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[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Mark Larson  
**Sent:** Tuesday, May 23, 2017 8:24 AM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** Re: XTO CTB 42 Revised Delineation Report

Mike/Crystal,

Please use the link below to download the revised delineation report for 2RP-3976. The report was revised to include additional photographs for exposing the liner inside the firewall. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/af3a731c-13d6-4830-8201-6944cbd5f9aa>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



**“Serving the Permian Basin Since 2000”**

## Sarah Johnson

---

**From:** Mark Larson  
**Sent:** Friday, August 25, 2017 1:23 PM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'; 'Groves, Amber'  
**Cc:** 'Dudley\_McMinn@xtoenergy.com'; 'Williams, Luke'; Sarah Johnson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

All,  
Please use the link below to download the remediation reports for 2RP-3976 and 2RP-4253 relating to the crude oil and produced water spills at the XTO Energy, Inc., Nash Draw #42 CTB in Eddy County, New Mexico. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/882fafa7-e31b-4edd-b47d-2fefae38aa11>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



*“Serving the Permian Basin Since 2000”*

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**From:** Bratcher, Mike, EMNRD [mailto:mike.bratcher@state.nm.us]  
**Sent:** Friday, August 18, 2017 4:39 PM  
**To:** Mark Larson; Weaver, Crystal, EMNRD; 'Groves, Amber'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

RE: **2RP-3976 & 2RP-4235**

Mark,

Based on data provided, you are approved to commence backfill operations. Sorry for a perceived delayed response, but if we actually worked everything in the order received, it would be at least a few weeks before you got a response. We do appreciate the thorough job and uncomplicated reporting you provide, along with XTO's willingness and cooperation in maintaining an environmentally solid operation. I do understand the urgency for this particular project and apologize for any inconvenience.

Mike Bratcher



NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Friday, August 18, 2017 8:27 AM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; 'Groves, Amber' <agroves@slo.state.nm.us>  
**Cc:** 'McMinn, Dudley' <Dudley\_McMinn@xtoenergy.com>; 'Williams, Luke' <Luke\_Williams@xtoenergy.com>  
**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Mike,

This summary is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of XTO Energy Inc. (XTO) to present the delineation and remediation of two (2) spills (2RP-3976 and 2RP-4253) at the Nash Draw CTB #42. LAI requests approval to backfill the excavations so that XTO may install a spray-in liner and resume production. The final reports for 2RP-3976 and 2RP-4253 will be submitted after the excavations area backfilled along with the final C-141s.

On August 8 - 9, 2017, XTO personnel shut-in the production and removed above ground piping and electrical from the remediation area. On August 10, 2017, XTO had the gun barrel and overflow tanks removed from the remediation area. Immediately following removal of the tanks, Scarborough Drilling mobilized an air rotary rig to DP-11 for the purpose of delineating chloride as requested by OCD. Soil samples were collected with a jam tube sampler at 10, 15, 20, 25 and 30 feet below ground surface (bgs) and were analyzed for chloride by EPA Method 300. Chloride was below 250 mg/Kg in all samples concluding successful vertical delineation. The poly liner was removed from the remediation area and disposed at Lea Land Landfill. Soil excavation began near the southwest corner of the remediation area and progressed east and north until the entire area was excavated to a depth of approximately 18 inches. Soil was excavated to approximately 5 feet bgs at DP-6. Additional soil was excavated in the vicinity of DP-5 where holes were observed in the poly liner and from areas beneath the tanks and where staining was observed beneath the liner. The area around DP-8 was excavated to about 2 feet bgs. Soil was scraped to about 0.5 feet bgs from the area north of DP-12 where the recent produced water spill (2RP-4253) had encroached. On August 11, 2017, LAI personnel used a stainless steel hand auger and trowel to collect soil samples from the bottom of the excavations at sixteen (16) locations (S-1 through S-16) including the area north of DP-12 where was scraped from the recent spill (S-16). Sidewall samples were collected from the deeper excavations. The samples were analyzed for BTEX, TPH and chloride by Methods SW-846--8021B, SW-846-8015M and 300, respectively.

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following bottom samples:

S-5, 5.0' – 5.5' (5,450 mg/Kg)  
S-6, 4.5' – 5.0' (9,780 mg/Kg)  
S-10, 1.5' – 2.0' (3,953 mg/Kg)  
S-14, 1.5' – 2.0' (1,598.7 mg/Kg)

The laboratory reported TPH above the RRAL (1,000 mg/Kg) in the following sidewall samples:

S-5, 2' East (3,580 mg/Kg)  
S-6, 4' North (1,310 mg/Kg)  
S-6, 2' South (18,450 mg/Kg)  
S-6, 2' East (2,558 mg/Kg)

The laboratory reported chloride above 600 mg/Kg in the following bottom samples:

S-13, 1.5' – 2.0' (8,210 mg/Kg)

S-14, 1.5' – 2.0' (1,050 mg/Kg)

S-16, 0.5' – 1.0' (3,810 mg/Kg)

Between August 14 – 16, 2017, additional soil was excavated at S-5, S-6, S-10 and S-14. TPH was below the RRAL in the final confirmation samples. Chloride was 247 mg/Kg in the bottom sample (5.0' – 5.5') at S-14. Scarborough Drilling collected samples every 5 feet (5, 10, 15, 20 feet, etc.) to 30 feet at S-13 and 20 feet at S-16. Chloride was below 600 mg/Kg in all samples from S-13 and below 250 mg/Kg in all samples from S-16. Please refer to Table 2. The excavation and sample location drawing is presented as Figure 2. Photographs are attached. Approximately 525.5 tons/cubic yards of contaminated soil was hauled to Le Land Landfill, LLC. Clean caliche was hauled back from Lea Land for backfilling the excavations. LAI, on behalf of XTO, requests OCD approval to backfill the excavations so that XTO may begin installing the spray-in liner and resume production. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
Office – 432-687-0901  
Cell – 432- 556-8656  
Fax – 432-687-0456  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



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---

**From:** Mark Larson  
**Sent:** Wednesday, August 09, 2017 7:01 PM  
**To:** 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,  
The tanks (gun barrel and overflow) were emptied today and will be removed on Thursday morning to allow access for equipment to perform remediation. We plan to collect additional samples tomorrow from SB-11 for vertical delineation.  
Mark

---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Monday, August 07, 2017 9:27 AM  
**To:** Mark Larson  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Good morning,

Thank you Mark. I may try to make it out to this one if Amber can not.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Sunday, August 6, 2017 6:58 PM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Groves, Amber' <[agroves@slo.state.nm.us](mailto:agroves@slo.state.nm.us)>

**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal/Amber,

This is to inform you that remediation of 2RP-3976 and 2RO-4253 will commence on Monday, August 9, 2017. Please contact Dudley McMinn with XTO Energy, Inc., at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
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---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]

**Sent:** Thursday, July 27, 2017 5:21 PM

**To:** Mark Larson; Bratcher, Mike, EMNRD; 'McMinn, Dudley'; 'Williams, Luke'

**Cc:** 'Tucker, Shelly'; Groves, Amber

**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

First off thank you Mark for your answers to my questions.

I was checking a few clerical details and I wanted to bring a few more things to all of your attention. On the first spill, given case number 2RP-3976, there was no API number provided on the initial C-141 and since it was mentioned that the release was involving a battery our administrative personnel entered this in our system and gave it a facility number instead of relating it to the API for this location. However, on the second spill, given case number 2RP-4253, an API number was provided on the initial C-141 so our administrative personnel entered this one into our system under the API number. So now we have records for two spills recorded in two different places in our system that in fact actually happened at this same site. Please try to remain consistent on what you go with for C-141 documentation and of course for any documentation.

Also I show in my records that this site is on State Land Office administered service but when I look back in the well file history for this site I see documents being provided to the BLM for this facility. Since I have this site as SLO land I am adding Amber Groves, from the State Land Office, to this email chain and I am thus requesting that someone please help to clarify this matter. **So Shelly or Amber can you all please clear up who is the surface owner for this location?**

Finally, getting back to Mark's answers to my questions.

OCD accepts your proposal for remediation of the above mentioned releases (2RP-3976 and 2RP-4235) with the following conditions:

- Within the answers provided below it is stated that Larson Associates Inc. on behalf of XTO will be submitting samples for laboratory testing of *"total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg."* However, OCD notes that testing for BTEX was not mentioned in either of these statements. OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- Since the second release spanned beyond the extent of the first release it is OCD's understanding that all impacted areas will be delineated during remedial activities. Excavation depths may vary based on new analytical data.
- Again as mentioned above in bullet point 1, because your response statement below, to my sampling request for areas where there are holes in the liner, does not include the mentioning of sampling for BTEX I want to make it clear that OCD requires that all sampling points related to the remediation of this site start out with testing for all required constituents that are mentioned within the Conditions of Approval document that was provided by OCD to you all for each of these releases.
- OCD concurs with the answer provided below regarding sampling point DP-11.

Please advise once remedial activities have been scheduled. If this is Federal surface then it will require like approval from BLM, if this is State Land Office surface than it will require like approval from SLO.

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.

If you have any questions or concerns, and for notification, please contact Mike Bratcher and/or myself in the District II Office.

## Crystal Weaver

Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
Cell: 575-840-5963  
Fax: 575-748-9720

---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]

**Sent:** Friday, July 21, 2017 7:24 AM

**To:** Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>

**Subject:** FW: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Crystal,

The following is submitted on behalf of XTO Energy, Inc. (XTO) in response to your questions below:

**Question:** All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?

**Response:** *it is my opinion that the depth of excavation will be similar to what is proposed since the initial spill was mostly crude oil with an small amount of produced water and the recent spill is mostly produced water with a small amount of crude oil. Soil will be excavated until total petroleum hydrocarbons (TPH) as determined by EPA SW-846 Method 8015 for GR, DRO and ORO is below the RRAL (1,000 mg/Kg The confirmation samples will be analyzed Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

**Question:** Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.

**Response:** *The area east of the tank battery covered by the initial spill is unlined. The recent spill east of the tank battery occurred the lined area where holes are shown in the liner. Soil samples will be collected from the lined area covered by the spill where holes are observed. The soil samples will be will be analyzed for TPH as determined by EPA SW-846 Method 8015 for GR, DRO and ORO and chloride by Method 300. Soil*

*will be excavated until TPH in bottom sample and sidewall samples where the excavation exceeds 2 feet is below the RRAL (1,000 mg/Kg). Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

Response: *A backhoe may be used to confirmed the chloride concentration in soil at DP-11, 5 – 6 feet. The sample will be analyzed by Method 300. Additional vertical samples will be collected to delineate chloride to 600 mg/Kg.*

Question: also just noticed one last thing, the label on your Table 1 says that the table is for 2RP-1486, is that a typo?

Response: *Good catch! I used an earlier table as a template and didn't change the remediation permit number. Please find the corrected table attached.*

Question: also just noticed one last thing, the remediation permit number you refer to for the recent spill (2RP-4235), is that a typo?

Response: *This remediation permit (2RP-4235) is for a release at the Devon Energy Production Company Cotton Draw Unit 84! It appears the 3 and 5 were juxtaposed and should be 2RP-4253.*

Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Mark J. Larson, P.G.  
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---

**From:** Weaver, Crystal, EMNRD [<mailto:Crystal.Weaver@state.nm.us>]  
**Sent:** Thursday, July 13, 2017 2:07 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; 'Tucker, Shelly'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** RE: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

XTO \* Nash #42 Tank Battery \* 30-015-37194 \* 2RP-3976 & 2RP-4253

Hello all,

Thank you for the submission of this most recent plan and for the submission of the prior one as well. OCD is fine with the idea of remediating both spills at the same time while you have equipment and workers mobilized, etc. and we are fine with both releases being written about in the same work plan and closure report etc., however, the spills will still be treated as separate cases as far as each will be referred to by its individual tracking number and DOR, and each will have to be closed out on our end as individual incidents. So each will need final C-141s.

With that being said, I have looked things over and I have a few questions for you all:

- All sampling mentioned in the current work plan (happened on 3/13/17 and 3/14/17) is sampling that relates to the original spill that occurred back on 10/27/16 (2RP-3976) correct? How can a depth of excavation be determined for the new spill area (spill that occurred on 6/14/17, 2RP-4235; which was stated in the C-141 as both oil and produced water fluids were released) without any additional sampling being done on its behalf prior to excavation?
- Holes in the liner are shown in the photographs provided. What is the status of the liner in those areas following spill 1 but prior to spill 2? OCD will require sampling in any areas where there were holes in the liner.
- Also at sample point DP-11 chloride results show at 702ppm at a depth of 5-6ft, as you mentioned, so you would need to resample there or continue to delineate till chlorides show clean.

I look forward to receiving a response to my questions/requests.

If you have any need for clarification or have any questions of your own please contact myself or Mike Bratcher here at the District II Office.

Thank you,

**Crystal Weaver**  
Environmental Specialist  
OCD – Artesia District II  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210  
Office: 575-748-1283 ext. 101  
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---

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Monday, July 3, 2017 4:06 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Tucker, Shelly' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'McMinn, Dudley' <[Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com)>; 'Williams, Luke' <[Luke\\_Williams@xtoenergy.com](mailto:Luke_Williams@xtoenergy.com)>  
**Subject:** Re: 2RP-3976 and 2RP-4235 - Nash Draw 42 CTB Delineation Report and Delineation Plan, June 30, 2017

Mike/Crystal/Shelly,  
Larson & Associates, Inc. (LAI) submits the delineation report and remediation plan for a crude oil spill at the XTO Energy, Inc. (XTO) Nash Draw 42 CTB. Since submitting the plan on May 23, 2017, XTO reported another spill at the facility on June 14, 2017, prior to receiving OCD approval of the remediation plan for the crude oil spill. XTO would like the OCD to consider allowing remediation of both spills under the remediation plan presented herein. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/aac0757d-4e60-4e7d-b88c-f8ac9693cab9>

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---

**From:** Mark Larson  
**Sent:** Tuesday, May 23, 2017 8:24 AM  
**To:** 'Bratcher, Mike, EMNRD'; 'Weaver, Crystal, EMNRD'  
**Cc:** 'McMinn, Dudley'; 'Williams, Luke'  
**Subject:** Re: XTO CTB 42 Revised Delineation Report

Mike/Crystal,  
Please use the link below to download the revised delineation report for 2RP-3976. The report was revised to include additional photographs for exposing the liner inside the firewall. Please contact Dudley McMinn with XTO Energy at (432) 682-8873 or [Dudley\\_McMinn@xtoenergy.com](mailto:Dudley_McMinn@xtoenergy.com) or me if you have questions.

Link: <https://files.acrobat.com/a/preview/af3a731c-13d6-4830-8201-6944cbd5f9aa>

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
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Sante Fe Main Office  
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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**

QUESTIONS

Action 530568

**QUESTIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nAB1630929291
Incident Name	NAB1630929291 NASH 42 CTB @ FAB1630929137
Incident Type	Oil Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAB1630929137] NASH 42 CTB

<b>Location of Release Source</b>	
<i>Please answer all the questions in this group.</i>	
Site Name	NASH 42 CTB
Date Release Discovered	10/27/2016
Surface Owner	Federal

<b>Incident Details</b>	
<i>Please answer all the questions in this group.</i>	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

<b>Nature and Volume of Release</b>	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Cause: Equipment Failure   Tank (Any)   Crude Oil   Released: 125 BBL   Recovered: 121 BBL   Lost: 4 BBL.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 530568

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>Yes</b>
Reasons why this would be considered a submission for a notification of a major release	<b>From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.</b>

*With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.*

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

*Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.*

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.

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEEnvNotifications@exxonmobil.com Date: 12/01/2025
--	--

Sante Fe Main Office  
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**State of New Mexico**  
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**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 530568

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	High
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	145
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	31700
GRO+DRO (EPA SW-846 Method 8015M)	23730
BTEX (EPA SW-846 Method 8021B or 8260B)	254
Benzene (EPA SW-846 Method 8021B or 8260B)	18.9

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	07/27/2017
On what date will (or did) the final sampling or liner inspection occur	08/23/2017
On what date will (or was) the remediation complete(d)	08/23/2017
What is the estimated surface area (in square feet) that will be reclaimed	3978
What is the estimated volume (in cubic yards) that will be reclaimed	806
What is the estimated surface area (in square feet) that will be remediated	3978
What is the estimated volume (in cubic yards) that will be remediated	806

*These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.*

*The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.*

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**Oil Conservation Division**  
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**Santa Fe, NM 87505**

QUESTIONS, Page 4

Action 530568

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	<a href="#">fEEM0112342028 LEA LAND LANDFILL</a>
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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.

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: <a href="mailto:NMEnvNotifications@exxonmobil.com">NMEnvNotifications@exxonmobil.com</a> Date: 12/01/2025
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 5

Action 530568

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Deferral Requests Only</b>	
<i>Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 530568

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	<b>530604</b>
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	<b>08/14/2017</b>
What was the (estimated) number of samples that were to be gathered	<b>5</b>
What was the sampling surface area in square feet	<b>200</b>

<b>Remediation Closure Request</b>	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3978
What was the total volume (cubic yards) remediated	806
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	3978
What was the total volume (in cubic yards) reclaimed	806
Summarize any additional remediation activities not included by answers (above)	see submitted report

*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 (in .pdf format) 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.*

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.

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEEnvNotifications@exxonmobil.com Date: 12/01/2025
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Action 530568

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	No



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CONDITIONS

Action 530568

**CONDITIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 530568
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**CONDITIONS**

Created By	Condition	Condition Date
michael.buchanan	Remediation closure has been approved as demonstrated in Appendix A of the closure report and email chain correspondence.	12/4/2025
michael.buchanan	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. The OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	12/4/2025
michael.buchanan	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	12/4/2025
michael.buchanan	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	12/4/2025
michael.buchanan	A revegetation report will not be accepted until revegetation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	12/4/2025
michael.buchanan	Per 19.15.29.13 E. NMAC, if a reclamation and revegetation report has been submitted to the surface owner, it may be used if the requirements of the surface owner provide equal or better protection of freshwater, human health, and the environment. A copy of the approval of the reclamation and revegetation report from the surface owner and a copy of the approved reclamation and revegetation report will need to be submitted to the OCD via the Permitting website.	12/4/2025