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IE3DS-200304-C-1410

SITE ASSESSMENT SUMMARY

&

PROPOSED VARIANCE AND REMEDIATION WORK PLAN

COG Operating, LLC
SRO 5 State Com #506H & 507H
Eddy County, New Mexico
Unit Letter "I/L", Section 32/33, Township 25 South, Range 28 East
Latitude 32.08505° North, Longitude 104.10065° West
NMOCD Reference No. 2RP-5717

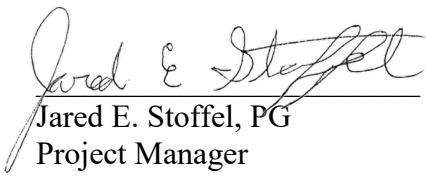
Prepared For:

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

Prepared By:

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

December 2019



Jared E. Stoffel, PG
Project Manager

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INTRODUCTION

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Site Assessment Summary and Proposed Variance and Remediation Work Plan* for the Release Site known as the SRO 5 State Com #506H & 507H (the Site). The legal description of the Site is Unit Letter "I/L", Section 32/33, Township 25 South, Range 28 East, in Eddy County, New Mexico. The subject property is owned by the State of New Mexico and administered by New Mexico State Land Office (NMSLO). The GPS coordinates for the Site are N 32.08505°, W 104.10065°. A topographical map is provided as **Figure 1**. Photographs are provided in the photolog as **Appendix C**.

BACKGROUND

On August 14, 2019, COG discovered a recycled produced water release had occurred at the Site. The Release was attributed to a third-party contractor line-strike. On the discovery date, COG notified the New Mexico Oil and Conservation Division (NMOCD) and New Mexico State Land Office (NMSLO) of the Release. The Release was assigned an NMOCD Reference number of **2RP-5717**. During initial response activities, a vacuum truck was dispatched to recover all freestanding fluids. On August 28, 2019, the initial Release Notification and Corrective Action (Form C-141) was submitted to the NMOCD. The Form C-141 indicated one-thousand two-hundred and ninety-one (1,291) barrels (bbl) of recycled produced water was released. No recycled produced water was recovered during initial response activities. The Release affected an area measuring approximately 103,500 square feet (sq. ft.). The C-141 indicated the impacted area was located in pastureland. A copy of the submitted Form C-141 for the Release is provided in **Appendix A**.

REGULATORY FRAMEWORK

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Sections 31 or 32, Township 25 South, Range 28 East. The nearest well recorded in the NMOSE groundwater database is located approximately three quarters (0.75) of a mile northeast of the Site and has a depth to groundwater of approximately ninety (90) feet below ground surface (bgs). A reference map utilized by the NMOCD indicates groundwater should be encountered at less than twenty-five (25) feet bgs. No water wells were observed within one-thousand (1,000) feet of the Site. No surface water was observed within one-thousand (1,000) feet of the Release.

Based on the inferred depth to groundwater at the SRO 5 State Com #506H & 507H Release Site, the NMOCD *Closure Criteria for Soils Impacted by a Release* may not warrant the most stringent closure criteria listed, due to the lack of definitive depth to groundwater data. However, the SRO 5 State Com #506H & 507H is located both in the 'medium karst' and 'high karst' areas as outlined in Bureau of Land Management (BLM) publicly available Karst Potential Map. The NMOCD stance on the regulation of releases in 'medium to high karst' areas is unclear, consequently COG will utilize the most stringent NMOCD Closure Criteria for Soils Impacted by a Release for the SRO 5 State Com #506H & 507H as follows:

- Benzene – 10 mg/kg
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) – 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) –100 mg/kg
- Chloride – 600 mg/kg

SITE BACKGROUND SAMPLING AND EVAUATION

On September 17, 2019, background soil investigation activities commenced at the Release Site. The COG SRO 5 State 504H & 505H Release Site is located adjacent to the SRO 5 State 506H & 507H Release Site; consequently, background chloride concentrations for the area were evaluated concurrently. The COG SRO 5 State 504H & 505H will be addressed in a separate document. Utilizing a backhoe, five (5) trench locations (Background-1, Background-2, Background-3, Background-4, and Background-5) were selected outside the impacted area, in highly vegetated areas unlikely to have been impacted by oil and gas activities. An effort was made to place the trenches between fifty (50) to one-hundred (100) feet from the Release margins. A high-pressure pipeline maintained by Crestwood Operating is located along the western margin of the SRO 5 State 506H & 507H Release Site and underlies the northernmost extent of the SRO 5 State 504H & 505H Release Site margin. As a precaution, the western margin background soil samples were collected between fifty (50) and one-hundred (100) feet west of the pipeline. A summary of the analytical results is presented in **Table 1**. Sample locations are depicted on **Figure 4**.

Background Sampling Details

Trench Background-1 was advanced approximately sixty (60) feet east of the Release margin of the SRO 5 State 504H & 505H and approximately sixty (60) feet southwest of the Crestwood high-pressure pipeline. Utilizing a backhoe, twelve (12) soil samples were collected at one-foot intervals to a total depth of 12.0' below surface. The soil samples exhibited chloride concentrations ranging from 39 mg/kg to 1,620 mg/kg.

Trench Background-2 was advanced approximately sixty (60) feet east of the Release margin of the SRO 5 State 506H in a vegetated area. Utilizing a backhoe, twelve (12) soil samples were collected at one-foot intervals to a total depth of 12.0' below surface. The soil samples exhibited chloride concentrations ranging from 24.6 mg/kg to 3,770 mg/kg.

Trench Background-3 was advanced approximately sixty (60) feet west of the Crestwood high-pressure pipeline, which parallels the western Release margin of the SRO 5 State 506H & 507H, in a vegetated area. Utilizing a backhoe, twelve (12) soil samples were collected at one-foot intervals to a total depth of 12.0' below surface. The soil samples exhibited chloride concentrations ranging from 8.89 mg/kg to 553 mg/kg.

Trench Background-4 was advanced south of trench Background-3, approximately sixty (60) feet west of the Crestwood high-pressure pipeline, which parallels the western Release margin of the SRO 5 State 506H & 507H, in a vegetated area. Utilizing a backhoe, twelve (12) soil samples

were collected at one-foot intervals to a total depth of 12.0' below surface. The soil samples exhibited chloride concentrations ranging from 8.44 mg/kg to 679 mg/kg.

Trench Background-5 was advanced approximately sixty (60) feet west of the Release margin of the SRO 5 State 504H & 505H, in a vegetated area. Utilizing a backhoe, twelve (12) soil samples were collected at one-foot intervals to a total depth of 12.0' below surface. The soil samples exhibited chloride concentrations ranging from 10.3 mg/kg to 1,220 mg/kg.

Background Summary

In summary, background sample location Background-3 exhibited chloride concentrations below the NMOCD regulatory guideline of 600 mg/kg in each submitted soil sample. Background sample location Background-4 laboratory analyses indicated one (1) soil sample (Background-4 @ 12') with chloride concentrations above the NMOCD regulatory guideline. Background soil sample locations Background-1, Background-2, and Background-5 exhibited multiple soil samples with chloride concentrations above the NMOCD regulatory guideline. Exceedances ranged from 610 mg/kg in Background-2 @ 12' to 3,770 mg/kg in Background-2 @ 8'.

When evaluating the full range of chloride concentrations in soil samples collected from sample locations Background-1, Background-2, and Background-5, there appears to be no discernable pattern in horizons with elevated chloride concentrations. The majority of elevated chloride concentrations occur at depth, below four (4) feet bgs. Laterally, the elevated background chloride concentrations are located outside the Release area to the east (Background-3), the southwest (Background-1), and south (Background-5). Topographically, Background-2 is at a similar elevation to the Release area, while Background-1 is slightly upslope and Background-5 is substantially upslope. The elevated chloride concentrations exhibited in background samples collected adjacent to the Release Site appear to be independent of topography, lateral distance from Release, or depth below ground surface.

COG asserts the chloride concentrations at the Release Site are likely naturally occurring background levels. As the background chloride concentrations are substantially greater than the NMOCD regulatory guidelines, COG has elected to delineate the Release Site to below background chloride concentrations rather than the NMOCD regulatory guidelines.

SOIL INVESTIGATION SUMMARY

On September 4, 5, 6, and 9, 2019, an initial soil investigation was conducted at the Release Site. During the investigation, sixteen (16) investigation trenches (TT-1 through TT-16) were advanced within the Release area, utilizing a backhoe, to characterize the vertical extent of the impacted area. Each of the soil samples collected from any of the delineation trenches utilized to characterize the vertical extent of the impacted area exhibited TPH and BTEX concentrations below the laboratory reporting limit. The chloride concentrations exhibited by soil samples collected from the delineation trenches utilized to characterize the vertical extent of the impacted area are summarized below.

In addition, twelve (12) sample locations (TT-N1, TT-S1, TT-W1, W2, W3, W4, W5, E1, E2, E3, E4, and E5) were advanced, utilizing a hand auger or a backhoe, outside the margins of the Release

area to confirm the horizontal extent of the Release area. Each of the soil samples collected from the delineation sample locations utilized to confirm the horizontal extent of the Release area exhibited TPH and BTEX concentrations below the laboratory reporting limit. The chloride concentrations exhibited by the horizontal delineation soil samples are summarized below. A summary of the analytical results is presented in **Table 2**. Sample locations are depicted on **Figure 4**.

Vertical Extent of Chlorides Summary

Trench TT-1 was advanced in the eastern half of the northernmost extent of the Release area. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 8.03 mg/kg to 686 mg/kg.

Trench TT-2 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-1. Utilizing a backhoe, five (5) soil samples were collected for chloride and soil samples exhibited chloride concentrations ranging from <4.98 mg/kg to 248 mg/kg.

Trench TT-3 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-2. Utilizing a backhoe, ten (10) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 155 mg/kg to 1,100 mg/kg.

Trench TT-4 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-3. Utilizing a backhoe, eight (8) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 231 mg/kg to 1,370 mg/kg.

Trench TT-5 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-4. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 19.5 mg/kg to 369 mg/kg.

Trench TT-6 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-5. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 48.0 mg/kg to 331 mg/kg.

Trench TT-7 was advanced in the eastern half of the Release area, approximately one-hundred and ten (110) feet south of TT-6. Utilizing a backhoe, twelve (12) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 455 mg/kg to 2,020 mg/kg.

Trench TT-8 was advanced in the eastern half of the southernmost extent of the Release area. Utilizing a backhoe, five (5) soil samples were collected for chloride and exhibited chloride concentrations ranging from 39.3 mg/kg to 382 mg/kg.

Trench TT-9 was advanced approximately seventy-five (75) feet west of TT-1. Utilizing a backhoe, five (5) soil samples were collected analyses and exhibited chloride concentrations ranging from <4.96 mg/kg to 25.5 mg/kg.

Trench TT-10 was advanced approximately seventy-five (75) feet west of TT-2. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <4.99 mg/kg to 5.06 mg/kg.

Trench TT-11 was advanced approximately seventy-five (75) feet west of TT-3. Utilizing a backhoe, twelve (12) soil samples were collected analyses and exhibited chloride concentrations ranging from 26.7 mg/kg to 1,630 mg/kg.

Trench TT-12 was advanced approximately seventy-five (75) feet west of TT-4. Utilizing a backhoe, fourteen (14) soil samples were collected analyses and exhibited chloride concentrations ranging from 26.0 mg/kg to 2,340 mg/kg.

Trench TT-13 was advanced approximately seventy-five (75) feet west of TT-5. Utilizing a backhoe, twelve (12) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 29.1 mg/kg to 1,410 mg/kg.

Trench TT-14 was advanced approximately seventy-five (75) feet west of TT-6. Utilizing a hand auger, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 89.6 mg/kg to 5,730 mg/kg.

Trench TT-15 was advanced approximately seventy-five (75) feet west of TT-7. Utilizing a hand auger, twelve (12) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 1,270 mg/kg to 2,230 mg/kg.

Trench TT-16 was advanced approximately seventy-five (75) feet west of TT-8. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 12.7mg/kg to 709 mg/kg.

Horizontal Extent of Chlorides Summary

Trench TT-N1 was advanced to the north of the Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 4.96 mg/kg to 279 mg/kg.

Trench TT-S1 was advanced to the south of the Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 11.6 mg/kg to 347 mg/kg.

Sample location E1 was advanced to the east of the northern Release margin utilizing a hand auger. Four (4) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <4.96 mg/kg to 5.77 mg/kg.

Sample location E2 was advanced to the east of the Release margin utilizing a hand auger. Four (4) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <5.04 mg/kg to 375 mg/kg.

Sample location E3 was advanced to the east of the Release margin utilizing a hand auger. Four (4) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <4.97 mg/kg to 10.7 mg/kg.

Sample location E4 was advanced to the east of the Release margin utilizing a hand auger. Four (4) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <5.02 mg/kg to 249 mg/kg.

Sample location E5 was advanced to the east of the southern Release margin utilizing a hand auger. Four (4) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 25.0 mg/kg to 697 mg/kg.

Trench TT-W1 was advanced to the west of the northern Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from <4.96 mg/kg to 5.95 mg/kg.

Trench W2 was advanced to the west of the Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 6.00 mg/kg to 403 mg/kg.

Trench W3 was advanced to the west of the Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 8.84 mg/kg to 52.4 mg/kg.

Trench W4 was advanced to the west of the Release margin. Utilizing a backhoe, five (5) soil samples were collected for chloride analysis and exhibited chloride concentrations ranging from <5.00 mg/kg to 25.7 mg/kg.

Trench W5 was advanced to the between trench W4 and trench TT-15. Utilizing a backhoe, twelve (12) soil samples were collected for chloride analyses and exhibited chloride concentrations ranging from 1280 mg/kg to 3320 mg/kg.

Site Re-Evaluation - Geo-Probe Drilling

Following delineation activities, the Release Site experienced several rain events which could have affected the chloride concentrations at the Site. On October 17 and 24, 2019, a Geoprobe® direct push rig was mobilized to evaluate how chloride concentrations in a selected subset of sample locations were affected by rain events in late September and early October. A total of six (6) locations, TT-7, TT-11, TT-12, TT-15, TT-16 and W5, were selected to be re-sampled and advanced deeper, if possible. Soil borings SB-7A, SB-11A, SB-12A, SB-15A, SB-16 and SB-16A were advanced within five (5) feet of the previous trenching locations and were advanced to refusal in each location. A summary of the analytical results are presented in **Table 1**. The sample locations are depicted in **Figure 4**.

On October 17, 2019, eighteen (18) soil samples were collected from SB-7A and were submitted to the laboratory for chloride analyses. A review of the analytical results indicated chloride

concentrations exceeded background concentrations in soil samples TT-7 @ 0-1', TT-7 @ 2', TT-7 @ 3', and TT-7 @ 4'.

On October 24, 2019, sixty-two (62) soil samples were collected from SB-11A, SB-12A, SB-15A, SB-16A and SB-W5A and were submitted to the laboratory for chloride analysis. A review of the analytical results indicated soil samples SB-11A @ 4', SB-11 @ 10', SB-12A @ 4', SB-15A @ 0-1', SB-15A @ 2', SB-15A @ 3', SB-15A @ 4', SB-15A @ 9', SB-15A @ 10', SB-15A @ 11', SB-16A @ 0-1', SB-16A @ 3', SB-16A @ 4', SB-16A @ 7', SB-W5A @ 2', SB-W5A @ 3', SB-W5A @ 4', SB-W5A @ 5', SB-W5A @ 6', SB-W5A @ 7', SB-W5A @ 8', SB-W5A @ 9', SB-W5A @ 10', and SB-W5A @ 11' exhibited chloride concentrations above background chloride concentrations. The data collected in October 2019 did not deviate substantially from the data collected in September 2019.

REMEDIATION PLAN AND PROPOSED LINER VARIANCE

Based on the laboratory analytical results from the soil samples collected in September 2019, the Release Site does not appear to be impacted above NMOCD regulatory guidelines by TPH or BTEX constituents. In addition, the Release Site exhibits background chloride concentrations which exceed the NMOCD regulatory guideline of 600 mg/kg.

Background Chloride Concentration Summary

Based on the background evaluation, COG asserts the chloride concentrations at the Release Site are likely naturally occurring background levels. As the background chloride concentrations are substantially greater than the NMOCD regulatory guidelines, COG asserts the evidence of elevated background chloride concentrations warrants a variance in the NMOCD regulatory closure guidelines for the SRO 5 State 506H & 507H Release Site. COG has elected to remediate the Release Site to below background chloride concentrations rather than the NMOCD regulatory guidelines.

COG proposes chloride concentrations guidelines be adjusted to 722 mg/kg for soils located between the surface and four (4) foot bgs. As a collection of data, the surface to four (4) foot intervals in each of the five (5) background trench locations exhibited one (1) exceedance of 722 mg/kg chloride in soil sample Background-1 @ 4'. In addition, COG maintains vertical delineation of chloride impact to below background concentrations within the Release area has been accomplished at each delineation location within the Release area. Chloride concentrations in the deepest soil sample at each sampling location ranged from <4.97 in soil sample TT-9 @ 5' to 1,450 mg/kg in soil sample SB-16A @ 10'. Soil samples Background-1 @ 12' (1,620 mg/kg), Background-2 @ 7' (1,650 mg/kg), and Background-2 @ 8' (3,770 mg/kg) exhibit chloride concentrations significantly greater than chloride concentrations in soil sample SB-16A @ 10'. COG maintains further chloride delineation at the Release Site is unwarranted.

Proposed Remediation and Liner Variance

COG proposes the following field activities designed to advance the SRO 5 State 506H & 507H Release Site toward an NMOCD-approved closure. The proposed excavation and lined areas are shown on **Figure 3 and Table 2**. The proposed liner is an engineering control designed to inhibit

the vertical migration of contaminants left in-situ. Impacted soil excavated during remediation activities will be staged on a polyurethane liner pending final disposition at a NMOCD-approved disposal facility.

- The areas represented by test trench TT-4 and TT-12 will be excavated to an approximate depth of two (2) feet bgs, to remove the clean overburden material. Analytical results suggest chloride concentrations in the soil interval are below NMOCD regulatory guidelines and may be used as backfill material. Once segregated, a composite soil stockpile sample (1 per 100 cubic yards) will be collected and submitted for chloride analysis. If chloride concentrations are below the NMOCD regulatory guideline, the soil will be utilized to backfill on-site excavations. If chloride concentrations are above the NMOCD regulatory guideline for chloride concentrations, the soil will be transported under manifest to an NMOCD approved disposal facility.

- The areas represented by test trenches TT-4 and TT-12 will be further excavated to a depth of approximately four (4) feet bgs, and the impacted material will be stockpiled to be disposed of at an NMOCD approved disposal facility. Once excavated to the appropriate depth, the area of TT-12 will be capped with a (20) mil polyurethane liner at the base of the approximately four (4) foot excavation.

- The areas represented by test trenches TT-7, TT-15, TT-16 and W5 will be excavated to an approximate depth of four (4) feet bgs, and the impacted material will be stockpiled to be disposed of at an NMOCD approved disposal facility. Once excavated to the appropriate depth, the areas of TT-7, TT-15, TT-16 and W5 will be capped with a (20) mil polyurethane liner at the base of the approximately four (4) foot excavation.

<u>Confirmation Sampling/Sampling Variance</u>

- Collect one (1) five-point composite sidewall confirmation soil sample for every four hundred (400) square feet (one-hundred (100) linear feet) of excavated sidewall to ensure the lateral extent of the impact has been removed.

- Collect one (1) five-point composite floor confirmation soil sample for every two-thousand five-hundred (2,500) square feet of excavation floor to ensure the vertical extent of impact has been removed.

- After review of analytical results from the excavation confirmation soil samples, the excavated area will be backfilled with locally-sourced, non-impacted ‘like’ material and returned to grade.

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COG is prepared to begin the activities outlined in this *Site Assessment Summary and Proposed Variance and Remediation Work Plan* after receiving NMOCD and NMSLO approval. On completion of remediation activities, a Remediation Summary and Closure Report will be prepared detailing field activities and laboratory analytical results from confirmation soil samples.

If you have any questions, or need any additional information, please feel free to contact myself or Ike Tavarez by phone or email.

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TABLE 1

Summary of Sampling Analytical Results (Background Results)

Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)
Background-1 @ 0-1'	9/17/19	9/17/19	0 -1'	In-Situ	–	–	–	–	–	–	–	39.0
Background-1 @ 2'	9/17/19	9/17/19	2'	In-Situ	–	–	–	–	–	–	–	358
Background-1 @ 3'	9/17/19	9/17/19	3'	In-Situ	–	–	–	–	–	–	–	427
Background-1 @ 4'	9/17/19	9/17/19	4'	In-Situ	–	–	–	–	–	–	–	**722**
Background-1 @ 5'	9/17/19	9/17/19	5'	In-Situ	–	–	–	–	–	–	–	**916**
Background-1 @ 6'	9/17/19	9/17/19	6'	In-Situ	–	–	–	–	–	–	–	**982**
Background-1 @ 7'	9/17/19	9/17/19	7'	In-Situ	–	–	–	–	–	–	–	391
Background-1 @ 8'	9/17/19	9/17/19	8'	In-Situ	–	–	–	–	–	–	–	**777**
Background-1 @ 9'	9/17/19	9/17/19	9'	In-Situ	–	–	–	–	–	–	–	**817**
Background-1 @ 10'	9/17/19	9/17/19	10'	In-Situ	–	–	–	–	–	–	–	**1,040**
Background-1 @ 11'	9/17/19	9/17/19	11'	In-Situ	–	–	–	–	–	–	–	**1,150**
Background-1 @ 12'	9/17/19	9/17/19	12'	In-Situ	–	–	–	–	–	–	–	**1,620**
Background-2 @ 0-1'	9/17/19	9/17/19	0-1'	In-Situ	–	–	–	–	–	–	–	24.6
Background-2 @ 2'	9/17/19	9/17/19	2'	In-Situ	–	–	–	–	–	–	–	41.6
Background-2 @ 3'	9/17/19	9/17/19	3'	In-Situ	–	–	–	–	–	–	–	46.4
Background-2 @ 4'	9/17/19	9/17/19	4'	In-Situ	–	–	–	–	–	–	–	305
Background-2 @ 5'	9/17/19	9/17/19	5'	In-Situ	–	–	–	–	–	–	–	**1,020**
Background-2 @ 6'	9/17/19	9/17/19	6'	In-Situ	–	–	–	–	–	–	–	**1,240**
Background-2 @ 7'	9/17/19	9/17/19	7'	In-Situ	–	–	–	–	–	–	–	**1,650**
Background-2 @ 8'	9/17/19	9/17/19	8'	In-Situ	–	–	–	–	–	–	–	**3,770**
Background-2 @ 9'	9/17/19	9/17/19	9'	In-Situ	–	–	–	–	–	–	–	292
Background-2 @ 10'	9/17/19	9/17/19	10'	In-Situ	–	–	–	–	–	–	–	152
Background-2 @ 11'	9/17/19	9/17/19	11'	In-Situ	–	–	–	–	–	–	–	**992**
Background-2 @ 12'	9/17/19	9/17/19	12'	In-Situ	–	–	–	–	–	–	–	**610**
Background-3 @ 0-1'	9/17/19	9/17/19	0-1'	In-Situ	–	–	–	–	–	–	–	8.99
Background-3 @ 2'	9/17/19	9/17/19	2'	In-Situ	–	–	–	–	–	–	–	11.2
Background-3 @ 3'	9/17/19	9/17/19	3'	In-Situ	–	–	–	–	–	–	–	9.04

R Denotes Mechanical Refusal at Sample Depth

TABLE 1

Summary of Sampling Analytical Results (Background Results)

Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)
Background-3 @ 4'	9/17/19	9/17/19	4'	In-Situ	–	–	–	–	–	–	–	25.8
Background-3 @ 5'	9/17/19	9/17/19	5'	In-Situ	–	–	–	–	–	–	–	553
Background-3 @ 6'	9/17/19	9/17/19	6'	In-Situ	–	–	–	–	–	–	–	100
Background-3 @ 7'	9/17/19	9/17/19	7'	In-Situ	–	–	–	–	–	–	–	140
Background-3 @ 8'	9/17/19	9/17/19	8'	In-Situ	–	–	–	–	–	–	–	199
Background-3 @ 9'	9/17/19	9/17/19	9'	In-Situ	–	–	–	–	–	–	–	235
Background-3 @10'	9/17/19	9/17/19	10'	In-Situ	–	–	–	–	–	–	–	251
Background-3 @ 11'	9/17/19	9/17/19	11'	In-Situ	–	–	–	–	–	–	–	280
Background-3 @ 12'	9/17/19	9/17/19	12'	In-Situ	–	–	–	–	–	–	–	146
Background-4 @ 1'	9/17/19	9/17/19	1'	In-Situ	–	–	–	–	–	–	–	8.44
Background-4 @ 2'	9/17/19	9/17/19	2'	In-Situ	–	–	–	–	–	–	–	17.1
Background-4 @ 3'	9/17/19	9/17/19	3'	In-Situ	–	–	–	–	–	–	–	105
Background-4 @ 4'	9/17/19	9/17/19	4'	In-Situ	–	–	–	–	–	–	–	306
Background-4 @ 5'	9/17/19	9/17/19	5'	In-Situ	–	–	–	–	–	–	–	384
Background-4 @ 6'	9/17/19	9/17/19	6'	In-Situ	–	–	–	–	–	–	–	489
Background-4 @ 7'	9/17/19	9/17/19	7'	In-Situ	–	–	–	–	–	–	–	379
Background-4 @ 8'	9/17/19	9/17/19	8'	In-Situ	–	–	–	–	–	–	–	561
Background-4 @ 9'	9/17/19	9/17/19	9'	In-Situ	–	–	–	–	–	–	–	359
Background-4 @ 10'	9/17/19	9/17/19	10'	In-Situ	–	–	–	–	–	–	–	422
Background-4 @ 11'	9/17/19	9/17/19	11'	In-Situ	–	–	–	–	–	–	–	318
Background-4 @ 12'	9/17/19	9/17/19	12'	In-Situ	–	–	–	–	–	–	–	**679**
Background-5 @ 0-1'	9/17/19	9/17/19	0-1'	In-Situ	–	–	–	–	–	–	–	10.3
Background-5 @ 2'	9/17/19	9/17/19	2'	In-Situ	–	–	–	–	–	–	–	50.7
Background-5 @ 3'	9/17/19	9/17/19	3'	In-Situ	–	–	–	–	–	–	–	59.8
Background-5 @ 4'	9/17/19	9/17/19	4'	In-Situ	–	–	–	–	–	–	–	114
Background-5 @ 5'	9/17/19	9/17/19	5'	In-Situ	–	–	–	–	–	–	–	388
Background-5 @ 6'	9/17/19	9/17/19	6'	In-Situ	–	–	–	–	–	–	–	461

R Denotes Mechanical Refusal at Sample Depth

TABLE 1

Summary of Sampling Analytical Results (Background Results)

Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)
Background-5 @ 7'	9/17/19	9/17/19	7'	In-Situ	–	–	–	–	–	–	–	587
Background-5 @ 8'	9/17/19	9/17/19	8'	In-Situ	–	–	–	–	–	–	–	**643**
Background-5 @ 9'	9/17/19	9/17/19	9'	In-Situ	–	–	–	–	–	–	–	**911**
Background-5 @ 10'	9/17/19	9/17/19	10'	In-Situ	–	–	–	–	–	–	–	**769**
Background-5 @ 11'	9/17/19	9/17/19	11'	In-Situ	–	–	–	–	–	–	–	**1,220**
Background-5 @ 12'	9/17/19	9/17/19	12'	In-Situ	–	–	–	–	–	–	–	**639**

R Denotes Mechanical Refusal at Sample Depth

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-1 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00200	<0.002	<49.8	<49.8	<49.8	<49.8	<49.8	686	–
TT-1 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	8.03	–
TT-1 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	14.7	–
TT-1 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	15.3	–
TT-1 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	14.9	–
TT-2 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	35.1	–
TT-2 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	128	–
TT-2 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	248	–
TT-2 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	43.0	–
TT-2 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	<4.98	–
TT-3 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	155	–
TT-3 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	294	–
TT-3 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	385	–
TT-3 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	703	–
TT-3 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	1,100	–
TT-3 @ 6'	9/5/19	–	6'	In-Situ	–	–	–	–	–	–	–	961	–
TT-3 @ 7'	9/5/19	–	7'	In-Situ	–	–	–	–	–	–	–	901	–
TT-3 @ 8'	9/5/19	–	8'	In-Situ	–	–	–	–	–	–	–	832	–
TT-3 @ 9'	9/5/19	–	9'	In-Situ	–	–	–	–	–	–	–	641	–
TT-3 @ 10'	9/5/19	–	10'	In-Situ	–	–	–	–	–	–	–	597	–
TT-4 @ 0-1'	9/5/19	–	0-1'	Overburden	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	231	–
TT-4 @ 2'	9/5/19	–	2'	Overburden	–	–	–	–	–	–	–	476	–
TT-4 @ 3'	9/5/19	–	3'	Excavate	–	–	–	–	–	–	–	**860**	–
TT-4 @ 4'	9/5/19	–	4'	Excavate	–	–	–	–	–	–	–	**1,110**	–

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-4 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	1,370	–
TT-4 @ 6'	9/5/19	–	6'	In-Situ	–	–	–	–	–	–	–	925	–
TT-4 @ 7'	9/5/19	–	7'	In-Situ	–	–	–	–	–	–	–	688	–
TT-4 @ 8'	9/5/19	–	8'	In-Situ	–	–	–	–	–	–	–	547	–
TT-5 @ 0-1'	9/4/19	–	0-1'	In-Situ	<0.00200	<0.002	<49.9	<49.9	<49.9	<49.9	<49.9	19.5	–
TT-5 @ 2'	9/4/19	–	2'	In-Situ	–	–	–	–	–	–	–	36.0	–
TT-5 @ 3'	9/4/19	–	3'	In-Situ	–	–	–	–	–	–	–	93.6	–
TT-5 @ 4'	9/4/19	–	4'	In-Situ	–	–	–	–	–	–	–	205	–
TT-5 @ 5'	9/4/19	–	5'	In-Situ	–	–	–	–	–	–	–	369	–
TT-6 @ 0-1'	9/4/19	–	0-1'	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50	48.0	–
TT-6 @ 2'	9/4/19	–	2'	In-Situ	–	–	–	–	–	–	–	105	–
TT-6 @ 3'	9/4/19	–	3'	In-Situ	–	–	–	–	–	–	–	129	–
TT-6 @ 4'	9/4/19	–	4'	In-Situ	–	–	–	–	–	–	–	281	–
TT-6 @ 5'	9/4/19	–	5'	In-Situ	–	–	–	–	–	–	–	331	–
TT-7 @ 0-1'	9/4/19	10/17/19	0-1'	Excavate	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	493	**1,460**
TT-7 @ 2'	9/4/19	10/17/19	2'	Excavate	–	–	–	–	–	–	–	455	**1,050**
TT-7 @ 3'	9/4/19	10/17/19	3'	Excavate	–	–	–	–	–	–	–	**1,210**	**1,210**
TT-7 @ 4'	9/4/19	10/17/19	4'	Excavate	–	–	–	–	–	–	–	**1,580**	**1,570**
TT-7 @ 5'	9/4/19	10/17/19	5'	At-Risk Liner	–	–	–	–	–	–	–	**1,780**	1,530
TT- 7 @ 6'	9/4/19	10/17/19	6'	At-Risk Liner	–	–	–	–	–	–	–	**1,990**	1,540
TT-7 @ 7'	9/4/19	10/17/19	7'	At-Risk Liner	–	–	–	–	–	–	–	**2,020**	1,350
TT-7 @ 8'	9/6/19	10/17/19	8'	At-Risk Liner	–	–	–	–	–	–	–	1,400	1,490
TT-7 @ 9'	9/6/19	10/17/19	9'	At-Risk Liner	–	–	–	–	–	–	–	1,400	1,230
TT-7 @ 10'	9/6/19	10/17/19	10'	At-Risk Liner	–	–	–	–	–	–	–	1,330	921
TT-7 @ 11'	9/6/19	10/17/19	11'	At-Risk Liner	–	–	–	–	–	–	–	1,220	1,010

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-7 @ 12'	9/6/19	10/17/19	12'	At-Risk Liner	–	–	–	–	–	–	–	943	903
SB-7A @ 13'	–	10/17/19	13'	At-Risk Liner	–	–	–	–	–	–	–	–	924
SB-7A @ 14'	–	10/17/19	14'	At-Risk Liner	–	–	–	–	–	–	–	–	1,280
SB-7A @ 15'	–	10/17/19	15'	At-Risk Liner	–	–	–	–	–	–	–	–	1,230
SB-7A @ 16'	–	10/17/19	16'	At-Risk Liner	–	–	–	–	–	–	–	–	751
SB-7A @ 17'	–	10/17/19	17'	At-Risk Liner	–	–	–	–	–	–	–	–	1,120
SB-7A @ 18'	–	10/17/19	18'	At-Risk Liner	–	–	–	–	–	–	–	–	939
TT-8 @ 0-1'	9/4/19	–	0-1'	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50	39.3	–
TT-8 @ 2'	9/4/19	–	2'	In-Situ	–	–	–	–	–	–	–	349	–
TT-8 @ 3'	9/4/19	–	3'	In-Situ	–	–	–	–	–	–	–	373	–
TT-8 @ 4'	9/4/19	–	4'	In-Situ	–	–	–	–	–	–	–	346	–
TT-8 @ 5'	9/4/19	–	5'	In-Situ	–	–	–	–	–	–	–	382	–
TT-9 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	25.5	–
TT-9 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	<4.96	–
TT-9 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	<5.04	–
TT-9 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	<5.05	–
TT-9 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	<4.97	–
TT-10 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	5.06	–
TT-10 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	<5.05	–
TT-10 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	<5.04	–
TT-10 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	<5.00	–
TT-10 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	<4.99	–
TT-11 @ 0-1'	9/5/19	10/24/19	0-1'	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50	26.7	52.1
TT-11 @ 2'	9/5/19	10/24/19	2'	In-Situ	–	–	–	–	–	–	–	57.4	281

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-11 @ 3'	9/5/19	10/24/19	3'	In-Situ	–	–	–	–	–	–	–	287	673
TT-11 @ 4'	9/5/19	10/24/19	4'	In-Situ	–	–	–	–	–	–	–	677	**789**
TT-11 @ 5'	9/5/19	10/24/19	5'	In-Situ	–	–	–	–	–	–	–	1,600	646
TT-11 @ 6'	9/5/19	10/24/19	6'	In-Situ	–	–	–	–	–	–	–	904	889
TT-11 @ 7'	9/5/19	10/24/19	7'	In-Situ	–	–	–	–	–	–	–	812	1,100
TT-11 @ 8'	9/5/19	10/24/19	8'	In-Situ	–	–	–	–	–	–	–	756	1,150
TT-11 @ 9'	9/5/19	10/24/19	9'	In-Situ	–	–	–	–	–	–	–	797	1,400
TT-11 @ 10'	9/5/19	10/24/19	10'	In-Situ	–	–	–	–	–	–	–	1,460	**1,630**
TT-11 @ 11'	9/5/19	10/24/19	11'	In-Situ	–	–	–	–	–	–	–	**1,630**	1,030
TT-11 @ 12'R	9/5/19	10/24/19	12'	In-Situ	–	–	–	–	–	–	–	1,140	384
TT-12 @ 0-1'	9/6/19	10/24/19	0-1'	Overburden	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50	26.0	23.5
TT-12 @ 2'	9/6/19	10/24/19	2'	Overburden	–	–	–	–	–	–	–	114	192
TT-12 @ 3'	9/6/19	10/24/19	3'	Excavate	–	–	–	–	–	–	–	718	626
TT-12 @ 4'	9/6/19	10/24/19	4'	Excavate	–	–	–	–	–	–	–	**1,670**	**1,360**
TT-12 @ 5'	9/6/19	10/24/19	5'	At-Risk Liner	–	–	–	–	–	–	–	**2,230**	1,400
TT-12 @ 6'	9/6/19	10/24/19	6'	At-Risk Liner	–	–	–	–	–	–	–	**2,340**	615
TT-12 @ 7'	9/6/19	10/24/19	7'	At-Risk Liner	–	–	–	–	–	–	–	1,510	605
TT-12 @ 8'	9/6/19	10/24/19	8'	At-Risk Liner	–	–	–	–	–	–	–	1,170	478
TT-12 @ 9'	9/6/19	10/24/19	9'	At-Risk Liner	–	–	–	–	–	–	–	1,260	363
TT-12 @ 10'	9/6/19	10/24/19	10'	At-Risk Liner	–	–	–	–	–	–	–	1,070	261
TT-12 @ 11'	9/6/19	–	11'	At-Risk Liner	–	–	–	–	–	–	–	1,170	–
TT-12 @ 12'	9/6/19	–	12'	At-Risk Liner	–	–	–	–	–	–	–	1,200	–
TT-12 @ 13'	9/6/19	–	13'	At-Risk Liner	–	–	–	–	–	–	–	1,430	–
TT-12 @ 14' R	9/6/19	–	14'	At-Risk Liner	–	–	–	–	–	–	–	1,160	–
TT-13 @ 0-1'	9/6/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	30.8	–
TT-13 @ 2'	9/6/19	–	2'	In-Situ	–	–	–	–	–	–	–	29.1	–

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-13 @ 3'	9/6/19	–	3'	In-Situ	–	–	–	–	–	–	–	116	–
TT-13 @ 4'	9/6/19	–	4'	In-Situ	–	–	–	–	–	–	–	**874**	–
TT-13 @ 5'	9/6/19	–	5'	In-Situ	–	–	–	–	–	–	–	1,390	–
TT-13 @ 6'	9/6/19	–	6'	In-Situ	–	–	–	–	–	–	–	1,410	–
TT-13 @ 7'	9/6/19	–	7'	In-Situ	–	–	–	–	–	–	–	864	–
TT-13 @ 8'	9/6/19	–	8'	In-Situ	–	–	–	–	–	–	–	994	–
TT-13 @ 9'	9/6/19	–	9'	In-Situ	–	–	–	–	–	–	–	943	–
TT-13 @ 10'	9/6/19	–	10'	In-Situ	–	–	–	–	–	–	–	741	–
TT-13 @ 11'	9/6/19	–	11'	In-Situ	–	–	–	–	–	–	–	777	–
TT-13 @ 12'	9/6/19	–	12'	In-Situ	–	–	–	–	–	–	–	521	–
TT-14 @ 0-1'	9/6/19	–	0-1'	Excavate	<0.00200	<0.002	<49.8	<49.8	<49.8	<49.8	<49.8	**5,730**	–
TT-14 @ 2'	9/6/19	–	2'	Excavate	–	–	–	–	–	–	–	**2,290**	–
TT-14 @ 3'	9/6/19	–	3'	In-Situ	–	–	–	–	–	–	–	131	–
TT-14 @ 4'	9/6/19	–	4'	In-Situ	–	–	–	–	–	–	–	89.6	–
TT-14 @ 5'	9/6/19	–	5'	In-Situ	–	–	–	–	–	–	–	108	–
TT-15 @ 0-1'	9/6/19	–	0-1'	Excavate	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50	**1,510**	**774**
TT-15 @ 2'	9/6/19	10/24/19	2'	Excavate	–	–	–	–	–	–	–	**1,800**	**1,070**
TT-15 @ 3'	9/6/19	10/24/19	3'	Excavate	–	–	–	–	–	–	–	**2,000**	**1,480**
TT-15 @ 4'	9/6/19	10/24/19	4'	Excavate	–	–	–	–	–	–	–	**2,110**	**1,540**
TT-15 @ 5'	9/6/19	10/24/19	5'	At-Risk Liner	–	–	–	–	–	–	–	**2,180**	1,360
TT-15 @ 6'	9/6/19	10/24/19	6'	At-Risk Liner	–	–	–	–	–	–	–	**2,230**	1,340
TT-15 @ 7'	9/6/19	10/24/19	7'	At-Risk Liner	–	–	–	–	–	–	–	**2,070**	1,320
TT-15 @ 8'	9/6/19	10/24/19	8'	At-Risk Liner	–	–	–	–	–	–	–	**2,110**	1,060
TT-15 @ 9'	9/6/19	10/24/19	9'	At-Risk Liner	–	–	–	–	–	–	–	**2,160**	**1,970**
TT-15 @ 10'	9/6/19	10/24/19	10'	At-Risk Liner	–	–	–	–	–	–	–	**1,990**	**1,900**
TT-15 @ 11'	9/6/19	10/24/19	11'	At-Risk Liner	–	–	–	–	–	–	–	**1,720**	**1,620**

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-15 @ 12' R	9/6/19	10/24/19	12'	At-Risk Liner	–	–	–	–	–	–	–	1,270	839
SB-15A @ 13'	–	10/24/19	13'	At-Risk Liner	–	–	–	–	–	–	–	–	1,510
SB-15A @ 14'	–	10/24/19	14'	At-Risk Liner	–	–	–	–	–	–	–	–	1,250
SB-15A @ 15'	–	10/24/19	15'	At-Risk Liner	–	–	–	–	–	–	–	–	886
TT-16 @ 0-1'	9/6/19	10/24/19	0-1'	Excavate	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50	12.7	**1,140**
TT-16 @ 2'	9/6/19	10/24/19	2'	Excavate	–	–	–	–	–	–	–	15.5	409
TT-16 @ 3'	9/6/19	10/24/19	3'	Excavate	–	–	–	–	–	–	–	205	**2,610**
TT-16 @ 4'	9/6/19	10/24/19	4'	Excavate	–	–	–	–	–	–	–	678	**1,010**
TT-16 @ 5'	9/6/19	10/24/19	5'	In-Situ	–	–	–	–	–	–	–	709	1,350
SB-16A @ 6'	–	10/24/19	6'	At-Risk Liner	–	–	–	–	–	–	–	–	1,220
SB-16A @ 7'	–	10/24/19	7'	At-Risk Liner	–	–	–	–	–	–	–	–	**1,740**
SB-16A @ 8'	–	10/24/19	8'	At-Risk Liner	–	–	–	–	–	–	–	–	1,180
SB-16A @ 9'	–	10/24/19	9'	At-Risk Liner	–	–	–	–	–	–	–	–	1,100
SB-16A @ 10'	–	10/24/19	10'	At-Risk Liner	–	–	–	–	–	–	–	–	1,450
TT-N1 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00200	<0.002	<49.8	<49.8	<49.8	<49.8	<49.8	279	–
TT-N1 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	6.69	–
TT-N1 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	8.30	–
TT-N1 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	9.45	–
TT- N1 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	4.96	–
TT-S1 @ 0-1'	9/4/19	–	0-1'	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50	11.6	–
TT-S1 @ 2'	9/4/19	–	2'	In-Situ	–	–	–	–	–	–	–	55.2	–
TT-S1 @ 3'	9/4/19	–	3'	In-Situ	–	–	–	–	–	–	–	294	–
TT-S1 @ 4'	9/4/19	–	4'	In-Situ	–	–	–	–	–	–	–	347	–
TT-S1 @ 5'	9/4/19	–	5'	In-Situ	–	–	–	–	–	–	–	205	–

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
E1 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50	5.49	–
E1 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	5.77	–
E1 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	<5.02	–
E1 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	<4.96	–
E2 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	<5.04	–
E2 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	5.17	–
E2 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	217	–
E2 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	375	–
E3 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	5.58	–
E3 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	<4.97	–
E3 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	6.53	–
E3 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	10.7	–
E4 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	<5.02	–
E4 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	12.8	–
E4 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	112	–
E4 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	249	–
E5 @ 0-1'	9/4/19	–	0-1'	In-Situ	<0.00200	<0.002	<49.9	<49.9	<49.9	<49.9	<49.9	25.0	–
E5 @ 2'	9/4/19	–	2'	In-Situ	–	–	–	–	–	–	–	220	–
E5 @ 3'	9/4/19	–	3'	In-Situ	–	–	–	–	–	–	–	449	–
E5 @ 4'	9/4/19	–	4'	In-Situ	–	–	–	–	–	–	–	697	–
TT-W1 @ 0-1'	9/5/19	–	0-1'	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50	<5.04	–
TT-W1 @ 2'	9/5/19	–	2'	In-Situ	–	–	–	–	–	–	–	<4.96	–

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
TT-W1 @ 3'	9/5/19	–	3'	In-Situ	–	–	–	–	–	–	–	<5.02	–
TT-W1 @ 4'	9/5/19	–	4'	In-Situ	–	–	–	–	–	–	–	<5.05	–
TT-W1 @ 5'	9/5/19	–	5'	In-Situ	–	–	–	–	–	–	–	5.95	–
W2 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	6.00	–
W2 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	20.1	–
W2 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	38.3	–
W2 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	45.3	–
W2 @ 5'	9/9/19	–	5'	In-Situ	–	–	–	–	–	–	–	403	–
W3 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50	9.98	–
W3 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	12.5	–
W3 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	8.84	–
W3 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	15.5	–
W3 @ 5'	9/9/19	–	5'	In-Situ	–	–	–	–	–	–	–	52.4	–
W4 @ 0-1'	9/9/19	–	0-1'	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50	25.7	–
W4 @ 2'	9/9/19	–	2'	In-Situ	–	–	–	–	–	–	–	<5.00	–
W4 @ 3'	9/9/19	–	3'	In-Situ	–	–	–	–	–	–	–	5.08	–
W4 @ 4'	9/9/19	–	4'	In-Situ	–	–	–	–	–	–	–	5.62	–
W4 @ 5'	9/9/19	–	5'	In-Situ	–	–	–	–	–	–	–	6.10	–
W5 @ 0-1'	9/10/19	10/24/19	0-1'	Excavate	<0.00200	<0.002	<49.9	<49.9	<49.9	<49.9	<49.9	**1,520**	458
W5 @ 2'	9/10/19	10/24/19	2'	Excavate	–	–	–	–	–	–	–	**1,780**	**1,870**
W5 @ 3'	9/10/19	10/24/19	3'	Excavate	–	–	–	–	–	–	–	**2,170**	**1,910**
W5 @ 4'	9/10/19	10/24/19	4'	Excavate	–	–	–	–	–	–	–	**2,460**	**2,350**
W5 @ 5'	9/10/19	10/24/19	5'	At-Risk Liner	–	–	–	–	–	–	–	**2,880**	**2,510**
W5 @ 6'	9/10/19	10/24/19	6'	At-Risk Liner	–	–	–	–	–	–	–	**2,780**	**2,480**

TABLE 2
Summary of Sampling Analytical Results (Delineation Samples)
Concentrations of BTEX, TPH, and/or Chloride in Soil

Sample ID	Date	Chloride Re-Sample Date	Depth	Proposed Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300	E 300
					Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}- C_{35} (mg/kg)	TPH C_6- C_{35} (mg/kg)	Chloride (mg/kg)	Chloride (mg/kg) Re-sampled 10/17/19 OR 10/24/19
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**
W5 @ 7'	9/10/19	10/24/19	7'	At-Risk Liner	–	–	–	–	–	–	–	**3,320**	**2,000**
W5 @ 8'	9/10/19	10/24/19	8'	At-Risk Liner	–	–	–	–	–	–	–	**2,550**	**1,990**
W5 @ 9'	9/10/19	10/24/19	9'	At-Risk Liner	–	–	–	–	–	–	–	**2,330**	**2,140**
W5 @ 10'	9/10/19	10/24/19	10'	At-Risk Liner	–	–	–	–	–	–	–	**1,650**	**1,480**
W5 @ 11'	9/10/19	10/24/19	11'	At-Risk Liner	–	–	–	–	–	–	–	1,530	**1,620**
W5 @ 12'	9/10/19	10/24/19	12'	At-Risk Liner	–	–	–	–	–	–	–	1,280	806
SB-W5A @ 13'	–	10/24/19	13'	At-Risk Liner	–	–	–	–	–	–	–	–	795
SB-W5A @ 14'	–	10/24/19	14'	At-Risk Liner	–	–	–	–	–	–	–	–	745
SB-W5A @ 15'	–	10/24/19	15'	At-Risk Liner	–	–	–	–	–	–	–	–	840
NMOCD Closure Criteria					**10**	**50**	**-**	**-**	**-**	**-**	**100**	**722 (0-4 bgs) 1,620 (>4 bgs)**	**722 (0-4 bgs) 1,620 (>4 bgs)**

Proposed Excavation Depth and Removal

Proposed 20 mil Liner

Clean Overburden Material

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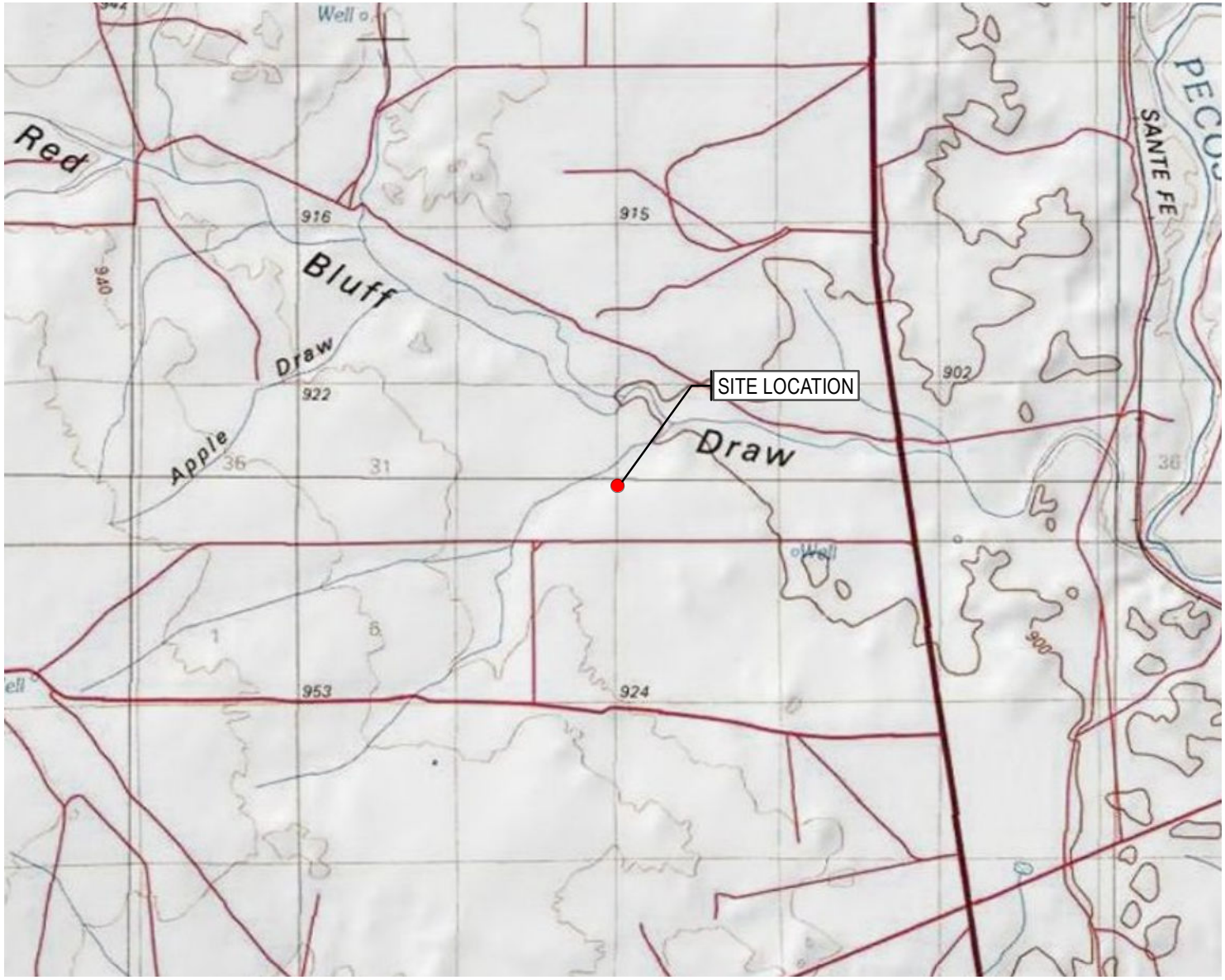


LEGEND

Site Location

BASEMAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES - RED BLUFF, NM.

N

0 0.5 1

MILE

1 " = 1 MILE

1:63,360

TRC

505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080

TRC - GIS

PROJECT:

SRO 5 STATE COM # 506H & 507H
EDDY COUNTY, NM

TITLE:

TOPOGRAPHIC MAP

DRAWN BY:	MHORN
CHECKED BY:	JSTOFFEL
APPROVED BY:	
DATE:	OCTOBER 2019
PROJ. NO.:	360484
FILE:	360484_1.mxd

FIGURE 1

S:\1-PROJECTS\ConchoResources\360484_SRO_State\360484_2.mxd -- Saved By: SRAY on 10/3/2019, 14:38:01 PM

LEGEND

- Site Location
- Water Well
- 1/2 Mile Radius
- 100-Year- Floodplain (FEMA)

SOURCES:
BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (2/21/2019);
FEMA FLOOD PLAIN (2019);
OSE POINTS OF DIVERSION (2019).

N

0 2,000 4,000 FT

1 " = 2,000 FEET

1:24,000

TRC

505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080

TRC - GIS

PROJECT:

SRO 5 STATE COM # 506H & 507H
EDDY COUNTY, NM

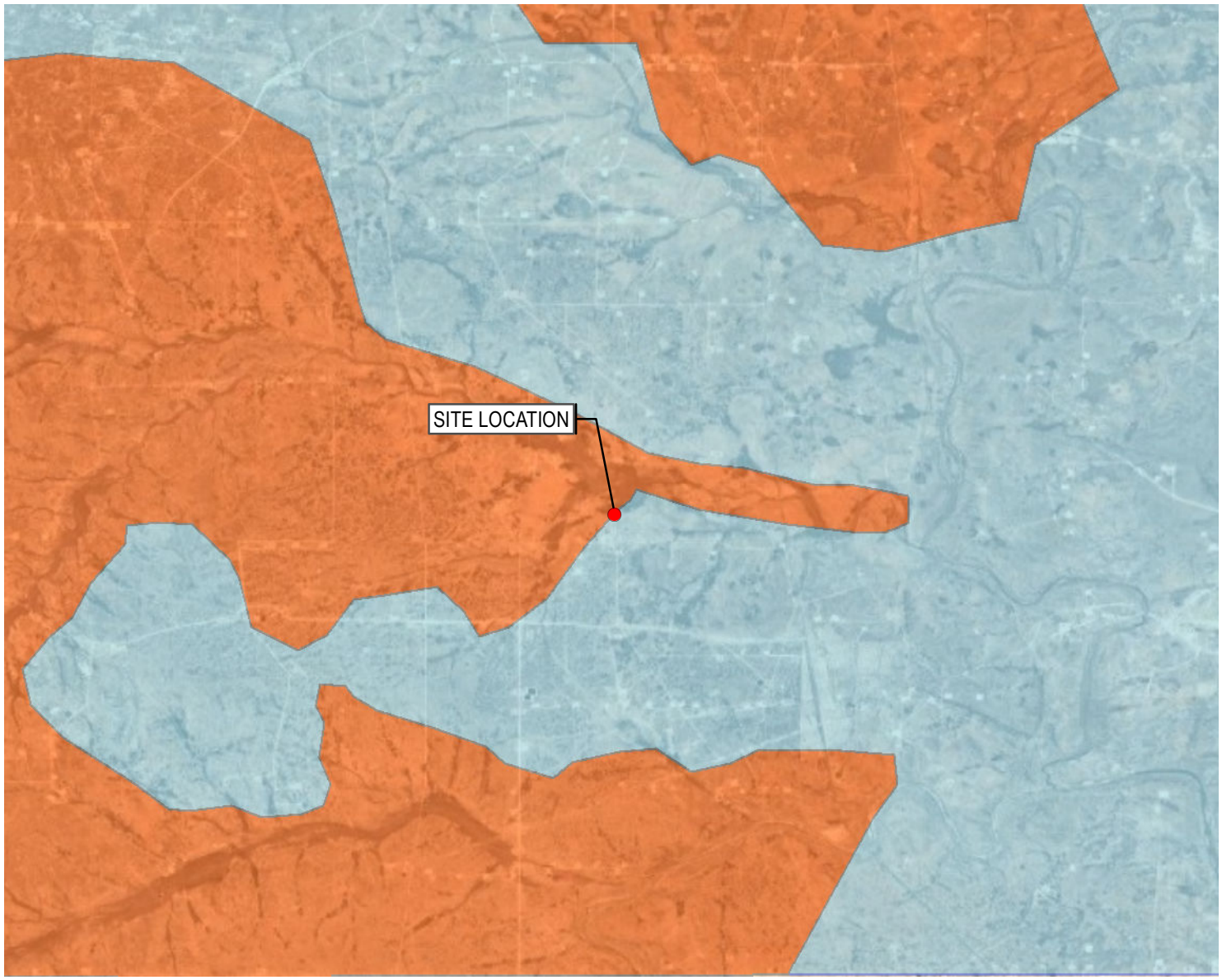
TITLE:

AERIAL MAP

DRAWN BY:	MHORN
CHECKED BY:	JSTOFFEL
APPROVED BY:	
DATE:	OCTOBER 2019
PROJ. NO.:	360484
FILE:	360484_2.mxd

FIGURE 2

S:\1-PROJECTS\ConchoResources\360484_SRO_State\360484_3.mxd -- Saved By: SRAY on 10/3/2019, 14:38:51 PM



LEGEND

MEDIUM KARST POTENTIAL

HIGH KARST POTENTIAL

SOURCES:
BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (2/21/2019);
KARST DATA FROM NM BLM (APRIL 2018).

N

0 1 2

MILES

1 IN = 2 MILES

1:126,720

TRC

505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080

TRC - GIS

PROJECT:

SRO 5 STATE COM # 506H & 507H
EDDY COUNTY, NM

TITLE:

KARST POTENTIAL MAP

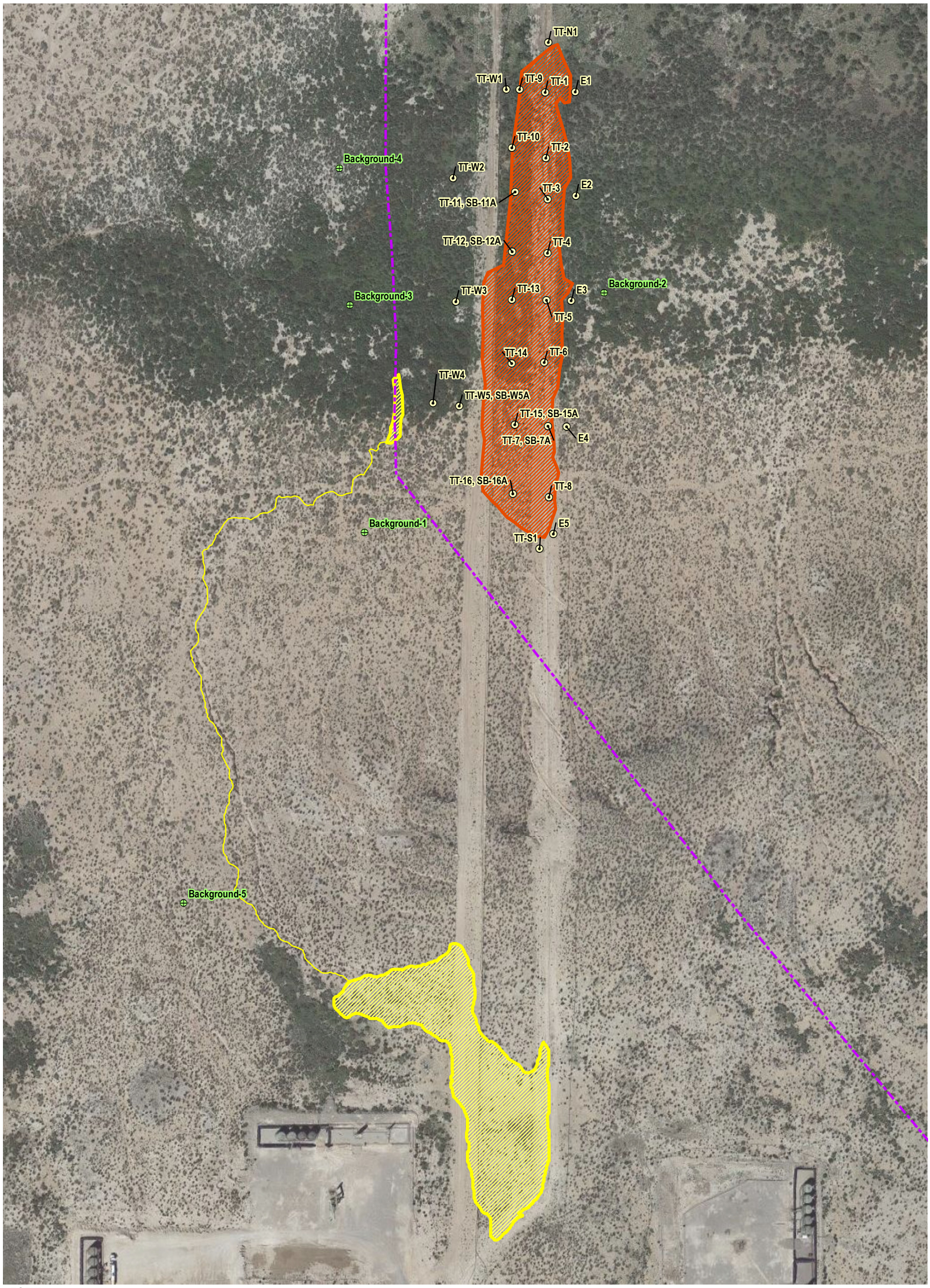
DRAWN BY:	MHORN
CHECKED BY:	JSTOFFEL
APPROVED BY:	
DATE:	OCTOBER 2019
PROJ. NO.:	360484
FILE:	360484_3.mxd

FIGURE 3

Plot Date: 12/10/2019, 17:37:36 PM by SRAY -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\ConchoResources\360484_SRO_State\360484_4.mxd

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- Sample Locations
- Background Locations
- Crestwood 20" High Pressure Pipeline
- Release Area
- Adjacent Release Area

0 87.5 175 FEET

1 " = 175 '

1:2,100

N

BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (2/21/2019);

TRC
505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080

PROJECT:

SRO 5 STATE COM # 506H & 507H
EDDY COUNTY, NM

TITLE:

RELEASE AREA AND SAMPLE LOCATION MAP

DRAWN BY:	MHORN
CHECKED BY:	JSTOFFEL
APPROVED BY:	JSTOFFEL
DATE:	DECEMBER 2019
PROJ. NO.:	360484
FILE:	360484_4.mxd

FIGURE 4

S:\1-PROJECTS\ConchoResources\360484_SRO_State\360484_5.mxd -- Saved By: SRAY on 12/16/2019, 12:54:43 PM

LEGEND

- BACKGROUND LOCATIONS
- SAMPLE LOCATIONS
- CRESTWOOD 20" HIGH PRESSURE PIPELINE
- RELEASE AREA
- PROPOSED LINER LOCATION
- PROPOSED 4' EXCAVATION

SOURCES:
BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (2/21/2019)

N

0 200 400 FEET

1 IN = 214 FEET

1:2,569

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505 East Huntland Drive
Suite #250
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Phone: 512.329.6080

TRC - GIS

PROJECT:

SRO 5 STATE COM # 506H & 507H
EDDY COUNTY, NM

TITLE:

PROPOSED EXCAVATION AND LINER LOCATION MAP

DRAWN BY:	MHORN
CHECKED BY:	JSTOFFEL
APPROVED BY:	
DATE:	DECEMBER 2019
PROJ. NO.:	360484
FILE:	360484_5.mxd

FIGURE 3

Appendix A: Photographic Documentation

COG- SRO 5 State Com 506 & 507
Date: 10/01/2019

Photographic Documentation

Photograph No. 1 **Date:** **9/9/2019** **Direction:** **East** **Description:** **View of Release area.**	
Photograph No. 2 **Date:** **9/9/2019** **Direction:** **South** **Description:** **View of Release area.**	

COG- SRO 5 State Com 506 & 507
Date: 10/01/2019

Photographic Documentation

Photograph No. 3 **Date:** **9/9/2019** **Direction:** **Northeast** **Description:** **View of Release area**	
Photograph No. 4 **Date:** **9/9/2019** **Direction:** **Northeast** **Description:** **View of Release area.**	

COG- SRO 5 State Com 506 & 507
Date: 10/01/2019

Photographic Documentation

Photograph No. 5 **Date:** **9/9/2019** **Direction:** **West** **Description:** **View of Release area.**	
Photograph No. 6 **Date:** **9/9/2019** **Direction:** **West** **Description:** **View of Crestwood pipeline right of way and adjacent Release area.**	

Appendix B: Depth to Groundwater Data

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 584867 **Northing (Y):** 3550180.34 **Radius:** 805

New Mexico Office of the State Engineer

Wells with Well Log Information

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	POD Sub-basin Code	County	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 01278	C	ED		4	3		28	25S	28E	585470	3551338*	1270	04/04/1965	04/08/1965	05/27/1965	205	90	ABBOTT, MUNELL	46
C 03836 POD1	C	ED	Shallow	2	2	4	29	25S	28E	584682	3551934	1726	04/06/2015	04/08/2015	04/16/2015	300	30	JOHN SIRMAN	1654
C 01573 POD1	C	ED	Shallow	3	1	4	20	25S	28E	584144	3553361	3226	01/15/1975	01/20/1975	01/23/1975	176	96	MURRELL ABBOTT	46

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 584871 **Northing (Y):** 3550218 **Radius:** 4024

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

New Mexico Office of the State Engineer

Wells with Well Log Information

No wells found.

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 32 **Township:** 25S **Range:** 28E

New Mexico Office of the State Engineer

Wells with Well Log Information

No wells found.

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 33 **Township:** 25S **Range:** 28E

Appendix C: Release Notification and Corrective Action (Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	nRM1933644528
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Jennifer Knowlton	Contact Telephone	(575) 748-1570
Contact email	JKnowlton@concho.com	Incident # *(assigned by OCD)*	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.08505 Longitude -104.10065
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	SRO 5 State Com #506H & 507H	Site Type	Flowline
Date Release Discovered	August 14, 2019	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
I/L	32/33	25S	28E	Eddy

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 1291	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a third party rupturing a flowline. The flowline is being repaired.
The release was in the pasture. A vacuum truck was dispatched to remove all freestanding fluids.
Concho will evaluate the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The volume released was greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notice was given by DeAnn Grant via e-mail August 14, 2019 at 1:19 pm to Mike Bratcher and Ryan Mann.

Initial Response

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

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

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

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

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

Printed Name: DeAnn Grant Title: HSE Administrative Assistant

Signature: DeAnn Grant Date: 8/28/2019

email: agrant@concho.com Telephone: (432) 253-4513

OCD Only

Received by: _____ Date: _____

****** LIQUID SPILLS - VOLUME CALCULATIONS ******

Location of spill: SRO State Com #506H & #507H **Date of Spill:** 14-Aug-2019

If the leak/spill is associated with production equipment, i.e. - wellhead, stuffing box, flowline, tank battery, production vessel, transfer pump, or storage tank **place an "X" here:** X

Input Data:

	OIL:	WATER:
If spill volumes from measurement, i.e. metering, tank volumes, etc. are known enter the volumes here:	0.0 BBL	0.0 BBL

If "known" spill volumes are given, input data for the following "Area Calculations" is optional. The above will override the calculated volumes.

Total Area Calculations

Total Surface Area	width		length		wet soil depth	oil (%)
Rectangle Area #1	114 ft		908 ft	X	6.00 in	0%
Rectangle Area #2	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #3	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #4	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #5	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #6	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #7	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #8	0 ft	X	0 ft	X	0 in	0%

Standing Liquid Calculations

Standing Liquid Area	width		length		liquid depth	oil (%)
Rectangle Area #1	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #2	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #3	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #4	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #5	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #6	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #7	0 ft	X	0 ft	X	0 in	0%
Rectangle Area #8	0 ft	X	0 ft	X	0 in	0%

okay

production system leak - DAILY PRODUCTION DATA REQUIRED

Average Daily Production: Oil 0 BBL Water 0 BBL 0 Gas (MCFD)

Total Hydrocarbon Content in gas: 0% (percentage)

Did leak occur before the separator?: YES N/A *(place an "X")*

H2S Content in Produced Gas: 0 PPM

H2S Content in Tank Vapors: 0 PPM

Amount of Free Liquid Recovered: 0 BBL okay

Percentage of Oil in Free Liquid Recovered: 0% (percentage)

Liquid holding factor *: 0.14 gal per gal

Use the following when the spill wets the grains of the soil.
* Sand = **0.08** gallon (gal.) liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.14** gal. liquid per gal. volume of soil.
* Sandy clay loam soil = **0.14** gal liquid per gal. volume of soil.
* Clay loam = **0.16** gal. liquid per gal. volume of soil.

Use the following when the liquid completely fills the pore space of the soil:
Occurs when the spill soaked soil is contained by barriers, natural (or not).
* Clay loam = **0.20** gal. liquid per gal. volume of soil.
* Gravelly (caliche) loam = **0.25** gal. liquid per gal. volume of soil.
* Sandy loam = **0.5** gal. liquid per gal. volume of soil.

Total Solid/Liquid Volume: **103,512 sq. ft.** **51,756 cu. ft.** **cu. ft.**

Total Free Liquid Volume: **sq. ft.** **cu. ft.** **cu. ft.**

Estimated Volumes Spilled

	H2O	OIL
Liquid in Soil:	1290.4 BBL	0.0 BBL
Free Liquid:	0.0 BBL	0.0 BBL
Totals:	**1290.4 BBL**	**0.0 BBL**
Total Liquid Spill Liquid:	**1290.4 BBL**	**0.00 BBL**

Estimated Production Volumes Lost

	H2O	OIL
Estimated Production Spilled:	**0.0** BBL	**0.0** BBL

Estimated Surface Damage

Surface Area: 103,512 sq. ft.

Surface Area: 2.3763 acre

Recovered Volumes

Estimated oil recovered: **BBL** check - okay

Estimated water recovered: **BBL** check - okay

Estimated Weights, and Volumes

Saturated Soil =	5,796,672 lbs	51,756 cu. ft.	1,917 cu. yds.
Total Liquid =	1,290 BBL	54,199 gallon	450,935 lbs

Air Emission from flowline leaks:

Volume of oil spill:	-	BBL
Separator gas calculated:	-	MCF
Separator gas released:	-	MCF
Gas released from oil:	-	lb
H2S released:	-	lb
Total HC gas released:	-	lb
Total HC gas released:	-	MCF

Air Emission of Reporting Requirements:

	New Mexico	Texas
HC gas release reportable?	NO	NO
H2S release reportable?	NO	NO

State of New Mexico
Oil Conservation Division

Incident ID	nRM1933644528
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☒ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☐ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☐ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nRM1933644528
District RP	
Facility ID	
Application ID	

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: Date: 10/1/19

email: itavarez@concho.com Telephone: (432) 685-2573

OCD Only

Received by: Cristina Eads Date: 06/04/2020

State of New Mexico
Oil Conservation Division

Incident ID	nRM1933644528
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: Date: 10/1/19

email: itavarez@concho.com Telephone: (432) 685-2573

OCD Only

Received by: Cristina Eads Date: 03/04/2020

☐ Approved ☐ Approved with Attached Conditions of Approval ☒ Denied ☐ Deferral Approved

Signature: Date: 06/04/2020

Appendix D: Analytical Laboratory Reports