



September 8, 2020

Oil Conservation Division, District 1
1625 N. French Dr.
Hobbs, NM 88240

Kelsey Wade
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

Work Plan

Sebastian Federal Com #001H

RP#: 1RP-5749

Tracking#: NRM1929031912

DOR: October 5, 2019

GPS: 32.2243 -103.51539

Unit Letter D, Section 18, Township 24 South, Range 34 East

Lea County, New Mexico

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following work plan in response to a release that occurred at the Sebastian Federal Com #001H tank battery. The release is located in Unit Letter D, Section 18, Township 24 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.2243 North and -103.51539 West.

BACKGROUND

The release was discovered on October 5, 2019. A C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). The release occurred on private surface however the well has Federal minerals associated with it. The initial C-141 is presented in Appendix A. A failed man-way gasket resulted in the release of approximately thirty (30) barrels (bbls) of produced water and ten (10) bbls of oil.

A third-party contractor (Etech) was retained to delineate the impacted area, prepare maps, and site diagrams. The results of the delineation activities are attached.

GROUNDWATER AND REGULATORY FRAMEWORK

In order to determine the depth to groundwater in the project vicinity, a soil boring was installed on the Sebastian Federal Com #001H well pad. The soil boring was advanced to a depth of fifty-five (55) feet BGS. Casing and slotted well screen were installed and the soil boring was left open for 72-hours. No water was discovered in the well following the 72-hour period. The drillers log is shown in Appendix B.

A risk based evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Located	>55 feet

Delineation and Closure Criteria:

Recommended Remedial Action Levels (RRALs)	
Chlorides	10,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

PROPOSED WORK PLAN

- Utilizing mechanical equipment, excavate impacted soil affected above the NMOCD Closure Criteria present within the affected pasture in the area characterized by sample point EFS2 and RS1 and on the production pad in the areas characterized by sample points P1, P3, P4 and V2. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results indicate concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria.
- Excavate impacted soil affected above the NMOCD Reclamation Standard present within the uppermost 4 Ft of the affected pasture in the area characterized by sample point EFS2, EFS3 and V3. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results from confirmation soil samples indicate BTEX, TPH and chloride are below the NMOCD Reclamation Standard.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled with clean “like” material and contoured to match the surrounding terrain.

SAMPLING PLAN

Once the excavation is complete, confirmation soil samples will be collected from the excavated areas. To collect representative samples, composite samples (5-point composite) will be collected every 500 square feet from the bottom and sidewalls of the excavated areas. The soil samples will be laboratory analyzed for the constituents of concern. Discrete soil samples will be collected from the excavation if any “hot spots” are encountered during the excavation.

REMEDICATION TIMEFRAME AND ESTIMATED VOLUME

The remediation will be performed 90 days after the work plan has been approved. Approximately three-hundred and eighty (380) cubic yards of soil will be excavated and hauled offsite for proper disposal.

SITE RECLAMATION AND RESTORATION

Upon completion of the remediation the pasture area will be backfilled with top soil and contoured to match the surrounding terrain. The surface will be left in a rough condition to approximate natural surface deviations. The site will be mechanically seeded with the surface owners approved seed mixture once proper seasonal conditions exist.

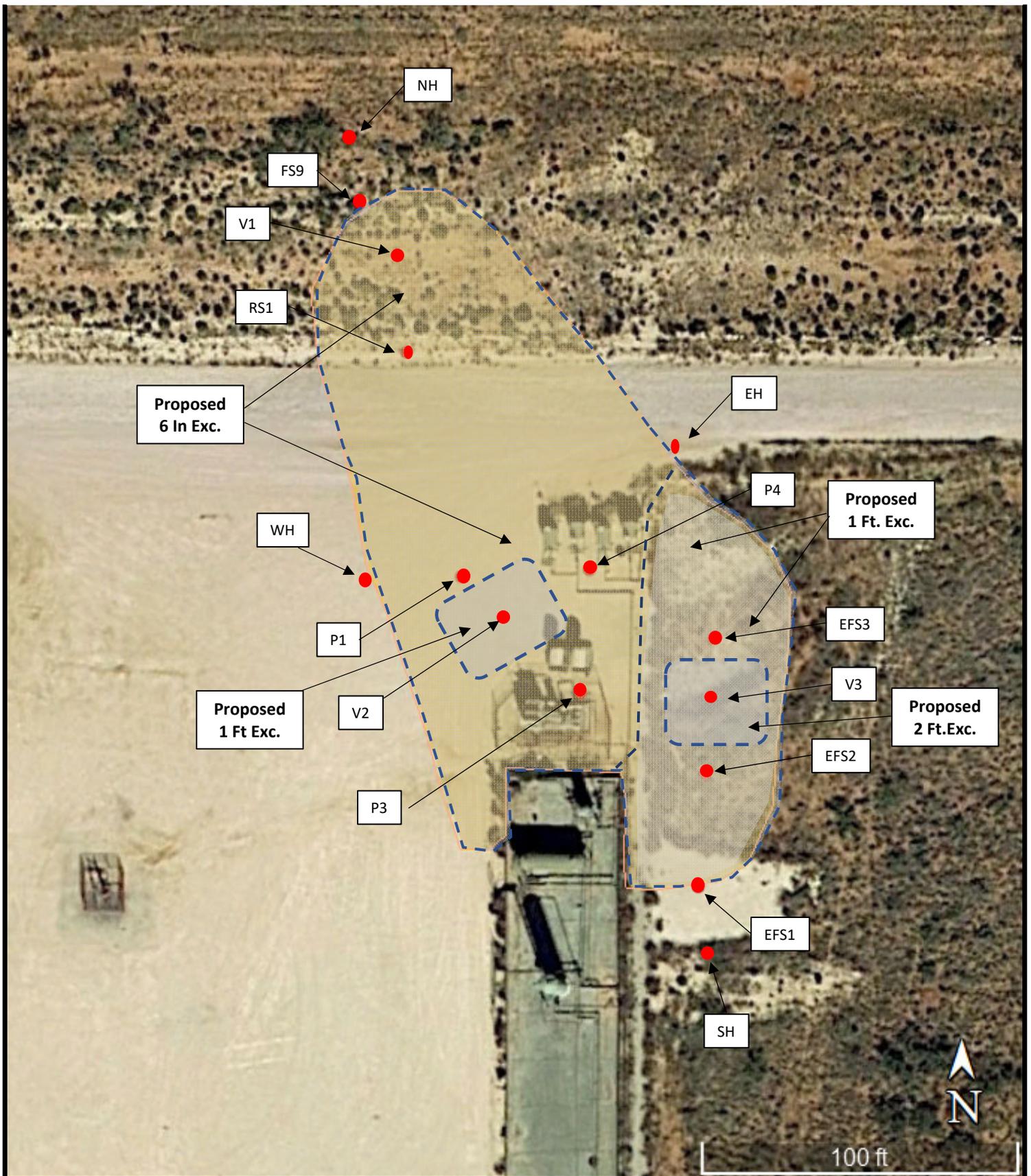
Should you have any questions or concerns on the proposed remediation activities, please do not hesitate to contact me.

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

FIGURES



Legend:

	Confirmation Sample Point
	Affected Area
	Proposed Excavation

Figure 3
 Site and Sample Location Map
 COG Operating, LLC
 Sebastian Fed Com #001H
 GPS: 32.2243, -103.51539
 Lea County



 Drafted:
 Checked: jwl Date: 12/18/19

TABLES

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX TPH AND CHLORIDE IN SOIL
COG Operating, LLC
Sebastian Fed Com #001H
NMOCD Ref. #: 1RP-5749

Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				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 ₃₆ (mg/kg)	TPH C ₆ -C ₃₆ (mg/kg)	Chloride (mg/kg)
P1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	5,310	5,310	1,160	6,470	608
P3 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	4,610	4,610	1,260	5,870	1,340
P3 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
P4 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	3.03	241	21,200	21,441	4,840	26,281	1,170
P4 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
RS1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	1,150	1,150	251	1,401	880
RS1 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EFS1 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EFS2 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	4,130	4,130	902	5,032	1,390
EFS2 @ 1'	11/15/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
EFS3 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	218	218	43.8	261.8	608
FS9 @ Surf.	11/15/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
V1 @ 1'	12/4/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
V1 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
V2 @ 1'	12/4/2019	1'	In-Situ	<0.050	1.10	146	12,800	12,946	2,560	15,506	112
V2 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	158	158	32.9	190.9	32.0
V2 @ 3'	12/4/2019	3'	In-Situ	<0.050	<0.300	<10.0	720	720	127	847	32.0
V3 @ 1'	12/4/2019	1'	In-Situ	<0.050	<0.300	<10.0	95.1	95.1	20.3	115.4	160
V3 @ 2'	12/4/2019	2'	In-Situ	<0.050	<0.300	<10.0	36.7	36.7	<10.0	36.7	224
NH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	41.5	41.5	<10.0	41.5	48.0
NH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
EH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
EH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
WH @ Surf.	12/4/2019	Surf.	In-Situ	<0.050	<0.300	<10.0	39.1	39.1	11.9	51.0	240
WH @ 4'	12/4/2019	4'	In-Situ	<0.050	<0.300	<10.0	16.00	16.00	<10.0	16.0	192
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

NOTES:

- =

Bold text denotes a concentration that exceeds the NMOCD Closure Criteria and/or NMOCD Reclamation Standard

APPENDIX A

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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)

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

Cause of Release

State of New Mexico
Oil Conservation Division

Page 2

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> 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: _____ Title: _____ Signature: <u>Sheldon Nitam</u> Date: _____ email: _____ Telephone: _____
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	
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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> 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

Page 4

Incident ID	
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: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
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: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: _____ Title: _____

Signature: Sheldon Hittman Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B

APPENDIX C



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

November 20, 2019

DANIEL DOMINGUEZ

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: SEBASTION FED COM #001H

Enclosed are the results of analyses for samples received by the laboratory on 11/15/19 15:38.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P1 @ SURFACE (H903894-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.93	96.5	2.00	9.93	
Toluene*	<0.050	0.050	11/18/2019	ND	2.02	101	2.00	15.6	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	2.09	105	2.00	21.8	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	6.11	102	6.00	21.0	
Total BTEX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24		
DRO >C10-C28*	5310	10.0	11/19/2019	ND	221	111	200	1.31		
EXT DRO >C28-C36	1160	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 302 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P3 @ SURFACE (H903894-02)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24		
DRO >C10-C28*	4610	10.0	11/19/2019	ND	221	111	200	1.31		
EXT DRO >C28-C36	1260	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 289 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P3 @ 1' (H903894-03)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904		
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912		
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137		
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272		
Total BTEX	<0.300	0.300	11/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24		
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	221	111	200	1.31		
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 129 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P4 @ SURFACE (H903894-04)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	0.479	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	2.50	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	3.03	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 149 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	241	50.0	11/19/2019	ND	225	112	200	1.24	
DRO >C10-C28*	21200	50.0	11/19/2019	ND	221	111	200	1.31	
EXT DRO >C28-C36	4840	50.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 166 % 41-142

Surrogate: 1-Chlorooctadecane 980 % 37.6-147

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Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: P4 @ 1' (H903894-05)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 139 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	225	112	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	221	111	200	1.31	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 117 % 41-142

Surrogate: 1-Chlorooctadecane 128 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: RS1 @ SURFACE (H903894-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	1150	10.0	11/19/2019	ND	211	106	200	7.20	QR-03, QM-07
EXT DRO >C28-C36	251	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 133 % 37.6-147

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 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: RS1 @ 1' (H903894-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 95.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.3 % 37.6-147

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Analytical Results For:

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 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: EFS1 @ SURFACE (H903894-08)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.0 % 41-142

Surrogate: 1-Chlorooctadecane 84.5 % 37.6-147

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Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: EFS2 @ SURFACE (H903894-09)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/18/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/18/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/18/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/18/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1390	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38		
DRO >C10-C28*	4130	10.0	11/19/2019	ND	211	106	200	7.20		
EXT DRO >C28-C36	902	10.0	11/19/2019	ND						

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 211 % 37.6-147

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Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: EFS2 @ 1' (H903894-10)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: EFS3 @ SURFACE (H903894-11)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	218	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	43.8	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 DANIEL DOMINGUEZ
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	11/15/2019	Sampling Date:	11/15/2019
Reported:	11/20/2019	Sampling Type:	Soil
Project Name:	SEBASTION FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	COG - RURAL LEA COUNTY		

Sample ID: FS9 @ SURFACE (H903894-12)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2019	ND	1.80	90.2	2.00	0.0904	
Toluene*	<0.050	0.050	11/19/2019	ND	1.81	90.3	2.00	0.912	
Ethylbenzene*	<0.050	0.050	11/19/2019	ND	1.82	90.9	2.00	0.137	
Total Xylenes*	<0.150	0.150	11/19/2019	ND	5.47	91.2	6.00	0.272	
Total BTEX	<0.300	0.300	11/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/19/2019	ND	222	111	200	2.38	
DRO >C10-C28*	<10.0	10.0	11/19/2019	ND	211	106	200	7.20	
EXT DRO >C28-C36	<10.0	10.0	11/19/2019	ND					

Surrogate: 1-Chlorooctane 89.4 % 41-142

Surrogate: 1-Chlorooctadecane 90.3 % 37.6-147

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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
*** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc. Project Manager: Daniel Dominguez Address: P.O. Box 301 City: Lovington State: NM Zip: 88260 Phone #: (575) 396-2378 Fax #: (575) 396-1429 Project #: 11378 Project Owner: Concho Project Name: Sebastian Fed Com #001H Project Location: Rural Lea County Sampler Name: Joel Lowry		BILL TO P.O. #: _____ Company: Concho Attn: _____ Address: _____ State: _____ City: _____ Zip: _____ Phone #: _____ Fax #: _____	
FOR LAB USE ONLY Lab I.D. Sample I.D. H903894		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER MATRIX SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER: PRESERV. SAMPLING	
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Relinquished By: <i>[Signature]</i> Date: 11/15/19 Time: 15:38 Relinquished By: <i>[Signature]</i> Date: _____ Time: _____		Received By: <i>[Signature]</i> Date: _____ Time: _____ Received By: <i>[Signature]</i> Date: _____ Time: _____	
Delivered By: (Circle One) <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other Sampler - UPS - Bus - Other: 2.4¢ / 2.8¢ #97		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No CHECKED BY: <i>[Signature]</i>	
FORM-006 Revision 1.0		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: _____ REMARKS: Please email results to danield@etechnv.com, joel@etechnv.com.	



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc. Project Manager: Daniel Dominguez Address: P.O. Box 301 City: Lovington State: NM Zip: 88260 Phone #: (575) 396-2378 Fax #: (575) 396-1429 Project #: 11378 Project Owner: Concho Project Name: Sebastian Fed Com #001H Project Location: Rural Lea County Sampler Name: Joel Lowry		BILL TO P.O. #: _____ Company: Concho Attn: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone #: _____ Fax #: _____	
FOR LAB USE ONLY Lab I.D. Sample I.D. H903894		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	
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Relinquished By: <i>[Signature]</i> Date: 11/15/19 Time: 15:38 Relinquished By: <i>[Signature]</i> Date: _____ Time: _____		Received By: <i>[Signature]</i> Date: _____ Time: _____	
Delivered By: (Circle One) F.I. Sampler - UPS - Bus - Other: 2.44 / 12.80 #97		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Checked By: <i>[Signature]</i>	
FORM-006 Revision 1.0		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ Add'l Fax #: _____ REMARKS: Please email results to danield@etechnv.com, joel@etechnv.com.	



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

December 06, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SEBASTIAN FED COM #001H

Enclosed are the results of analyses for samples received by the laboratory on 12/04/19 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V1 @ 1' (H904060-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V1 @ 2' (H904060-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430		
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30		
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND						

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V2 @ 1' (H904060-03)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	0.148	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	0.951	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	1.10	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	146	50.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	12800	50.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	2560	50.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 148 % 41-142

Surrogate: 1-Chlorooctadecane 532 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V2 @ 2' (H904060-04)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 193 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	158	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	32.9	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 124 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V2 @ 3' (H904060-05)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	720	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	127	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 135 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V3 @ 1' (H904060-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	95.1	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	20.3	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 93.0 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: V3 @ 2' (H904060-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	36.7	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: SH @ SURFACE (H904060-08)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430		
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30		
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND						

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: NH @ SURFACE (H904060-09)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	41.5	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: SH @ 4' (H904060-10)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 163 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: EH @ 4' (H904060-11)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	12/05/2019	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: WH @ SURFACE (H904060-12)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46		
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50		
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75		
Total BTEX	<0.300	0.300	12/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	12/05/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430		
DRO >C10-C28*	39.1	10.0	12/05/2019	ND	197	98.4	200	1.30		
EXT DRO >C28-C36	11.9	10.0	12/05/2019	ND						

Surrogate: 1-Chlorooctane 97.1 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: EH @ SURFACE (H904060-13)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	12/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: WH @ 4' (H904060-14)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	12/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	16.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 98.6 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/04/2019
Reported:	12/06/2019	Sampling Type:	Soil
Project Name:	SEBASTIAN FED COM #001H	Sampling Condition:	Cool & Intact
Project Number:	11378	Sample Received By:	Jodi Henson
Project Location:	RURAL LEA		

Sample ID: NH @ 4' (H904060-15)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/05/2019	ND	1.94	97.1	2.00	2.46	
Toluene*	<0.050	0.050	12/05/2019	ND	1.87	93.5	2.00	3.50	
Ethylbenzene*	<0.050	0.050	12/05/2019	ND	1.90	95.2	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/05/2019	ND	5.76	95.9	6.00	2.75	
Total BTEX	<0.300	0.300	12/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/05/2019	ND	200	99.8	200	0.430	
DRO >C10-C28*	<10.0	10.0	12/05/2019	ND	197	98.4	200	1.30	
EXT DRO >C28-C36	<10.0	10.0	12/05/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating, LLC
 Project Manager: Daniel Dominguez
 Address: 3100 Plains Hwy
 City: Lovington State: NM Zip: 88260
 Phone #: 575-396-2378 Fax #: 575-396-1429
 Project #: 11378 Project Owner: COG Operating, LLC
 Project Name: Sebastian Fed Com #001H
 Project Location: Rural Lea
 P.O. #: Company: COG
 Attn: CO Sheldon Hitchcock
 Address: City: State: NM Zip:
 Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV			DATE	TIME	Chloride	TPH	BTEX 8021
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :					
H904000	010 2'	G 1	1	X								12-4-19	9:17:00	X	X	X	
	010 2'	G 1	1	X								12-4-19	9:14:5	X	X	X	
	020 2'	G 1	1	X								12-4-19	10:00	X	X	X	
	020 2'	G 1	1	X								12-4-19	10:15	X	X	X	
	020 2'	G 1	1	X								12-4-19	10:30	X	X	X	
	030 2'	G 1	1	X								12-4-19	10:45	X	X	X	
	030 2'	G 1	1	X								12-4-19	11:00	X	X	X	
	030 2'	G 1	1	X								12-4-19	11:15	X	X	X	
	030 2'	G 1	1	X								12-4-19	11:30	X	X	X	
	030 2'	G 1	1	X								12-4-19	11:45	X	X	X	

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Relinquished By: *[Signature]* Date: 12/4/19 Time: 16:45
 Received By: *[Signature]*
 Delivered By: (Circle One) UPS - Bus - Other: 5.12/5.52 #97
 Sample Condition: Cool Intact
 Yes No
 CHECKED BY: *[Signature]*
 REMARKS: Email results to daniel@etechemv.com
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating, LLC
 Project Manager: Daniel Dominguez
 Address: 3100 Plains Hwy
 City: Lovington State: NM Zip: 88260
 Phone #: 575-396-2378 Fax #: 575-396-1429
 Project #: 11378 Project Owner: COG Operating, LLC
 Project Name: Sebastian Fed Com #001H
 Project Location: Rural Lea

BILL TO
 P.O. #: _____ Company: COG
 Attn: CO Sheldon Hitchcock
 Address: _____
 City: _____ State: NM Zip: _____
 Phone #: _____ Fax #: _____

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME	Chloride	TPH	BTEX 8021
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE					
11	EH @ 4'	G	1	X	X	X	X	X	12/4/19	12:00	X	X	X
12	WH @ surface	G	1	X	X	X	X	X	12/4/19	1:00	X	X	X
13	EH @ surface	G	1	X	X	X	X	X	12/4/19	12:45	X	X	X
14	WH @ 4'	G	1	X	X	X	X	X	12/4/19	12:15	X	X	X
15	NH @ 4'	G	1	X	X	X	X	X	12/4/19	12:30	X	X	X

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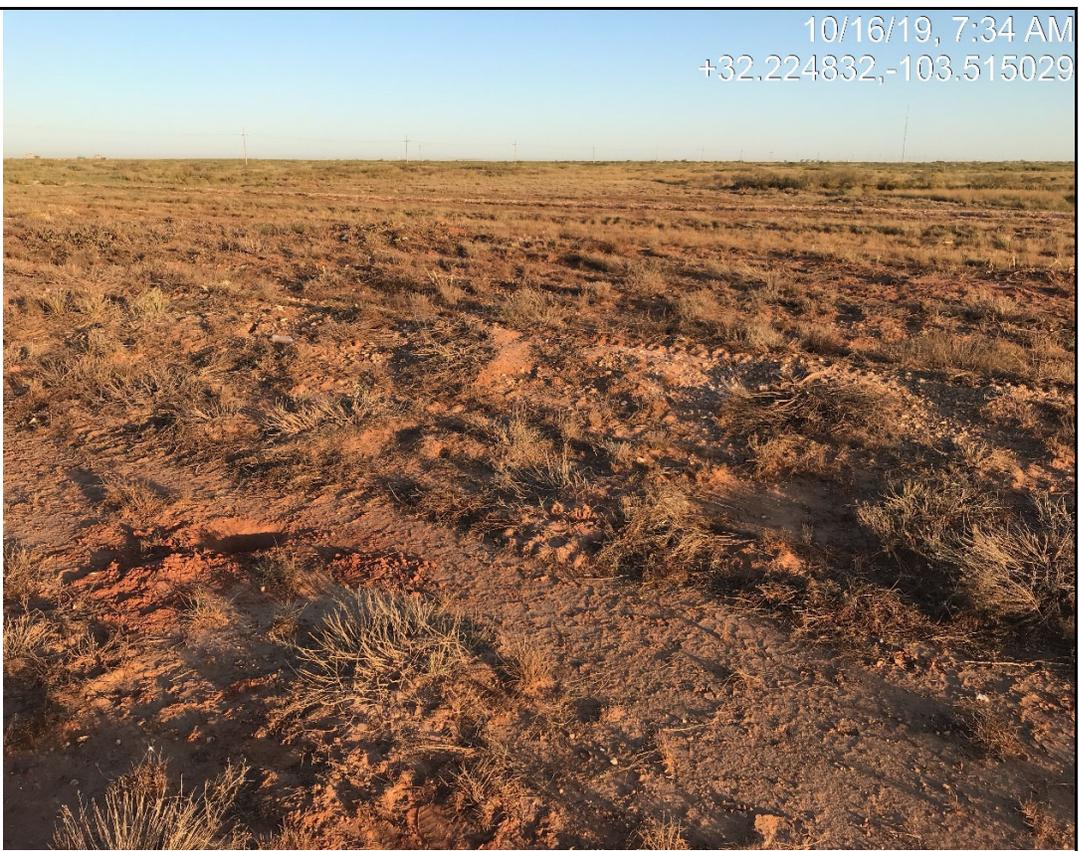
Relinquished By: *[Signature]* Date: 12/4/19
 Received By: *[Signature]* Date: 12/4/19
 Time: 10:45
 Relinquished By: _____ Date: _____
 Received By: _____ Date: _____

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other: 5.1e/15.5e #97
 Sample Condition: Cool Intact Yes No
 CHECKED BY: *[Signature]*
 REMARKS: Email results to danield@etechnv.com

APPENDIX D

Photographic Log

Photo Number: 1	 <p>10/16/19, 7:21 AM +32.224409,-103.515140</p>
Photo Direction: East	
Photo Description: View of the area on the caliche well pad.	

Photo Number: 2	 <p>10/16/19, 7:34 AM +32.224832,-103.515029</p>
Photo Direction: North	
Photo Description: View of the area within the pasture.	

Incident ID	NRM1929031912
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: _____ Title: _____

Signature: Sheldon Nitan Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Robert Hamlet Date: 2/26/2021

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: Robert Hamlet Date: 2/26/2021

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 10182

CONDITIONS OF APPROVAL

Operator:	COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	OGRID:	229137	Action Number:	10182	Action Type:	C-141
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OCD Reviewer	Condition
rhamlet	This Workplan/Remediation proposal is approved with the following conditions: • Borehole install to 55' has been accomplished, depth to water determination is approved for 51'-100' for delineation purposes • Variance is approved for 500 sq ft closure sample size • Please make sure the edges/sidewalls are delineated to 600 mg/kg for chlorides