



September 13, 2019

B5A2X-190913-C-1410

Mike Bratcher
Oil Conservation Division, District 2
811 S First Street
Artesia, NM 88210

Closure Report:

Pine Springs 2 State SWD #001

API#: 30-015-42348

RP#: 2RP-5512

DOR: June 12, 2019

GPS: 32.071434 -104.3667831

**Unit Letter K, Section 2, Township 26 South, Range 25 East
Eddy County, New Mexico**

Mr. Bratcher,

COG Operating, LLC (COG) is pleased to submit the following closure report in response to an illegal dump that occurred at the Pine Springs 2 State SWD #001. The release was located in Unit Letter K, Section 2, Township 26 South and Range 25 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.071434 North and -104.3667831 West.

BACKGROUND

The release was discovered on June 12, 2019. A C-141 report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the New Mexico State Land Office (NMSLO). The C-141 is presented in Appendix A. The release was caused by an illegal dump of approximately twenty (20) barrels (bbls) of produced water. The person(s) responsible for this illegal dump remain unknown at the time of this report.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the New Mexico Office of the State Engineer groundwater in the project vicinity is approximately twenty-three (23) feet below ground surface (BGS). The water well information 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 the release was within a high karst potential area. No other receptors (water wells, playas, 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.)
High Karst	>100 feet

DELINEATION AND CLOSURE CRITERIA:

Table I Closure Criteria	
Chlorides	600 mg/kg
TPH (GRO and DRO and MRO)	100 mg/kg
TPH (GRO and DRO)	N/A
Benzene	10 mg/kg
Total BTEX	50 mg/kg

Remedial Actions

- The impacted area was initially excavated to a depth of two (2) feet BGS.
- Confirmation soil samples were taken from the bottom and sidewalls of the excavation per NMED 19.15.29.13.
- Upon receipt of analytical data from the initial excavation activities it was determined that certain portions of the excavation would have to be extended vertically or horizontally. These locations were excavated further and to a depth of three (3) feet BGS in the bottom of the excavation.

- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were taken from the bottom and sidewalls of the re-excavated areas per NMAC 19.15.29.
- Upon receipt of acceptable analytical results from the confirmation soil sampling activities the excavation was backfilled with clean “like” material.

SITE RECLAMATION AND RESTORATION

Per NMED 19.15.29.13 the affected area was backfilled with non-contaminated material with concentrations below 600 mg/kg of chlorides. The surface was left in a rough condition to approximate natural surface deviations. The site will be mechanically seeded with BLM LG seed mixture and monitored for regrowth.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division grant closure approval for the Pine Springs 2 State #001 illegal dump that occurred on June 12, 2019.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,

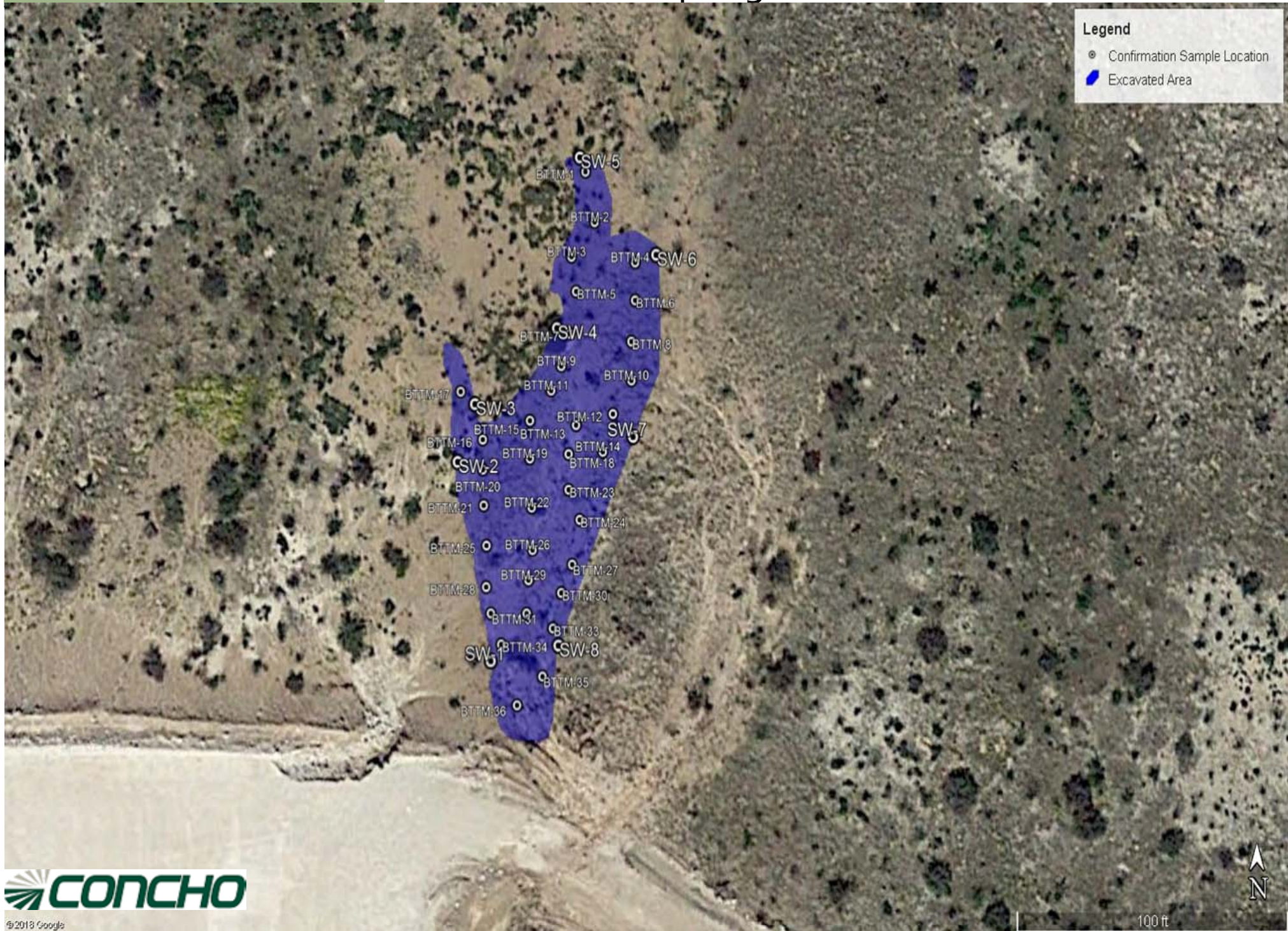


Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

FIGURES

June 12, 2019

Pine Springs 2 State SWD #001



TABLES

Table 1
COG Operating LLC.
Pine Springs State SWD #001
Eddy County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total			
NMOCD RRAL Limits (mg/kg)					-	-	-	100	-	-	100	10	50	600
BTTM-1	2	8/7/2019		X	<15.0	209.0	43.0	252.0	<15.0	209.0	209.0	<0.00200	<0.00200	58.6
BTTM-2	2	8/7/2019		X	<15.0	181.0	43.4	224.4	<15.0	181.0	181.0	<0.00198	<0.00198	59.5
BTTM-3	2	8/7/2019		X	<14.9	150.0	31.2	181.2	<14.9	150.0	150.0	<0.00199	<0.00199	59.7
BTTM-4	2	8/7/2019		X	<15.0	185.0	39.0	224.0	<15.0	185.0	185.0	<0.00200	<0.00200	71
BTTM-5	2	8/7/2019		X	<15.0	202.0	41.4	243.4	<15.0	202.0	202.0	<0.00198	<0.00198	74.9
BTTM-6	2	8/7/2019		X	<14.9	181.0	37.9	218.9	<14.9	181.0	181.0	<0.00200	<0.00200	81.8
BTTM-7	2	8/7/2019	X		<15.0	25.7	<15.0	25.7	<15.0	25.7	25.7	<0.00200	<0.00200	76
BTTM-8	2	8/7/2019	X		<15.0	27.2	<15.0	27.2	<15.0	27.2	27.2	<0.00199	<0.00199	160
BTTM-9	2	8/7/2019	X		<15.0	26.1	<15.0	26.1	<15.0	26.1	26.1	<0.00198	<0.00198	195
BTTM-10	2	8/7/2019	X		<14.9	22.9	<14.9	22.9	<14.9	22.9	22.9	<0.00199	<0.00199	161
BTTM-11	2	8/7/2019	X		<15.0	31.8	<15.0	31.8	<15.0	31.8	31.8	<0.00199	<0.00199	141
BTTM-12	2	8/7/2019	X		<15.0	31.9	<15.0	31.9	<15.0	31.9	31.9	<0.00200	<0.00200	155
BTTM-13	2	8/7/2019		X	<15.0	137.0	30.2	167.2	<15.0	137.0	137.0	<0.00199	<0.00199	154
BTTM-14	2	8/7/2019		X	<15.0	151.0	32.0	183.0	<15.0	151.0	151.0	<0.00199	<0.00199	244
BTTM-15	2	8/7/2019	X		<15.0	68.2	<15.0	68.2	<15.0	68.2	68.2	<0.00200	<0.00200	228
BTTM-16	2	8/7/2019	X		<14.9	71.0	<14.9	71.0	<14.9	71.0	71.0	<0.00200	<0.00200	203
BTTM-17	2	8/7/2019	X		<15.0	61.5	<15.0	61.5	<15.0	61.5	61.5	<0.00199	<0.00199	193
BTTM-18	2	8/7/2019		X	<15.0	63.8	<15.0	63.8	<15.0	63.8	63.8	<0.00200	<0.00200	2800
BTTM-19	2	8/7/2019		X	<15.0	222.0	47.8	269.8	<15.0	222.0	222.0	<0.00198	<0.00198	54100
BTTM-20	2	8/7/2019		X	<15.0	202.0	42.7	244.7	<15.0	202.0	202.0	<0.00199	<0.00199	163
BTTM-21	2	8/7/2019		X	<15.0	256.0	59.6	315.6	<15.0	256.0	256.0	<0.00200	<0.00200	157
BTTM-22	2	8/7/2019		X	<15.0	252.0	57.8	309.8	<15.0	252.0	252.0	<0.00199	0.0	154
BTTM-23	2	8/7/2019		X	<15.0	229.0	54.6	283.6	<15.0	229.0	229.0	<0.00198	0.0	144
BTTM-24	2	8/7/2019		X	<15.0	220.0	50.2	270.2	<15.0	220.0	220.0	<0.00200	0.0	159
BTTM-25	2	8/7/2019	X		<15.0	56.8	<15.0	56.8	<15.0	56.8	56.8	<0.00200	<0.00200	147
BTTM-26	2	8/7/2019	X		<14.9	49.9	<14.9	49.9	<14.9	49.9	49.9	<0.00200	<0.00200	120
BTTM-27	2	8/7/2019	X		<15.0	42.3	<15.0	42.3	<15.0	42.3	42.3	<0.00200	<0.00200	148
BTTM-28	2	8/7/2019	X		<15.0	30.6	<15.0	30.6	<15.0	30.6	30.6	<0.00200	<0.00200	95.9
BTTM-29	2	8/7/2019	X		<15.0	45.8	<15.0	45.8	<15.0	45.8	45.8	<0.00200	<0.00200	139
BTTM-30	2	8/7/2019	X		<15.0	49.4	<15.0	49.4	<15.0	49.4	49.4	<0.00198	<0.00198	123
BTTM-31	2	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00200	<0.00200	54.4
BTTM-32	2	8/7/2019	X		<14.9	<14.9	<14.9	0.0	<14.9	<14.9	0.0	<0.00199	<0.00199	56.2
BTTM-33	2	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00198	<0.00198	59.2
BTTM-34	2	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00198	<0.00198	67.5
BTTM-35	2	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00200	<0.00200	58.4
BTTM-36	2	8/7/2019	X		<15.0	40.4	<15.0	40.4	<15.0	40.4	40.4	<0.00201	<0.00201	129
BTTM-1	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-2	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-3	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-4	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-5	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-6	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#

Table 1
COG Operating LLC.
Pine Springs State SWD #001
Eddy County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO	Total			
BTTM-13	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-14	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-18	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	48
BTTM-19	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	32
BTTM-20	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
BTTM-21	3	8/21/2019	X		<10.0	20	<10.0	#	#	#	#	#	#	#
BTTM-22	3	8/21/2019	X		<10.0	16.7	<10.0	#	#	#	#	#	#	#
BTTM-23	3	8/21/2019	X		<10.0	15.6	<10.0	#	#	#	#	#	#	#
BTTM-24	3	8/21/2019	X		<10.0	<10.0	<10.0	#	#	#	#	#	#	#
SW-1	N/A	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00200	<0.00200	54.4
SW-2	N/A	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00198	<0.00198	79.2
SW-3	N/A	8/7/2019		X	<15.0	313	55.9	368.9	<15.0	313	313.0	<0.00199	<0.00199	254
SW-4	N/A	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00200	<0.00200	38
SW-5	N/A	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00198	<0.00198	35.7
SW-6	N/A	8/7/2019		X	20.1	129	34.5	163.5	20.1	129	129.0	<0.00198	<0.00198	30.3
SW-7	N/A	8/7/2019	X		<15.0	<15.0	<15.0	0.0	<15.0	<15.0	0.0	<0.00200	<0.00200	82.9
SW-8	N/A	8/7/2019		X	<15.0	139	37.4	176.4	<15.0	139	139.0	<0.00200	<0.00200	179
SW-3	N/A	8/21/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	#	#	#
SW-6	N/A	8/21/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	#	#	#
SW-8	N/A	8/21/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	#	#	#

(#) Not Analyzed

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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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

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?
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

☐ 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 <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 Nitan</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?	☐ 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: <i>Each of the following items must be included in the report.</i> ☐ 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.

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

Legend

OSE PODs

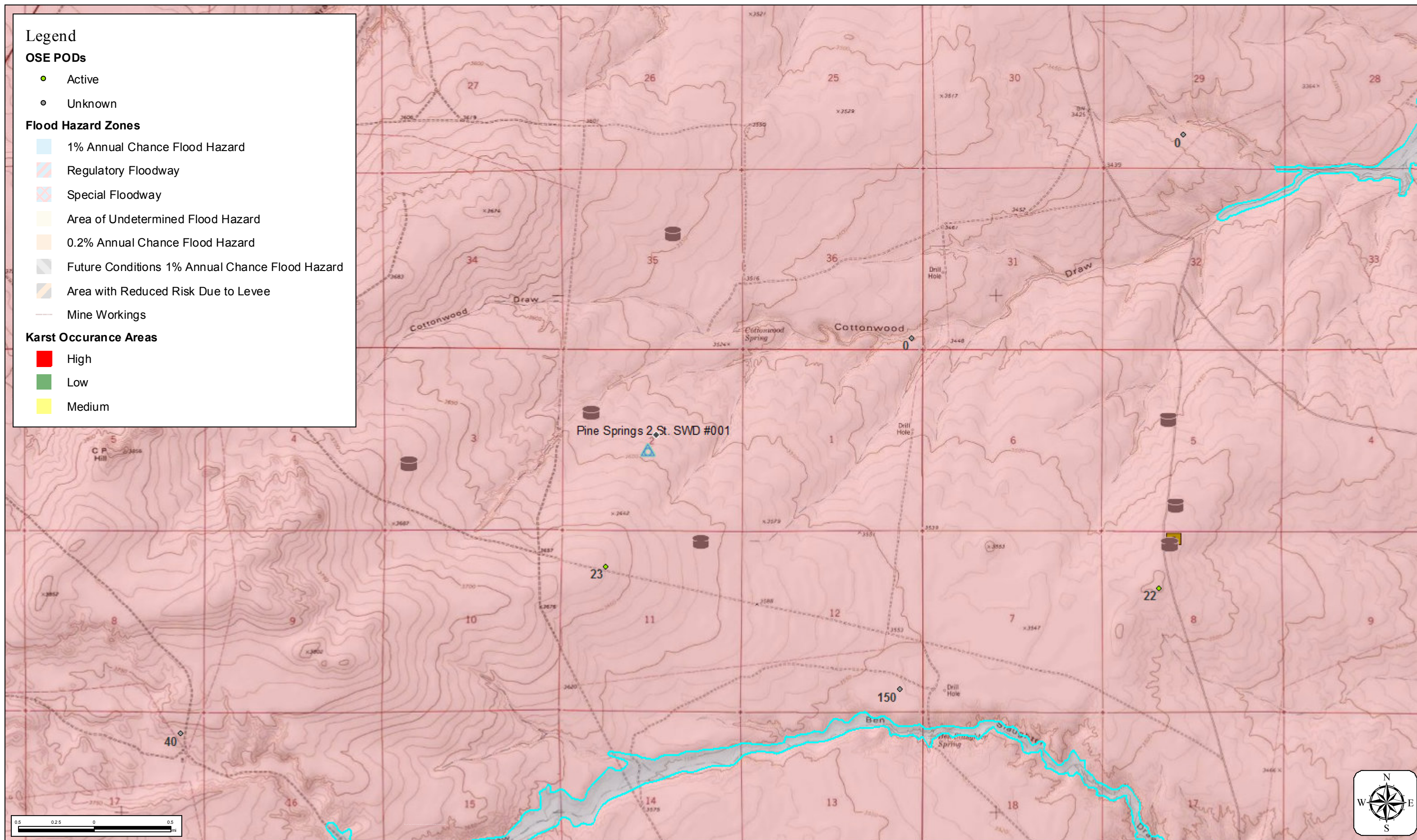
- Active
- Unknown

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Mine Workings

Karst Occurance Areas

- High
- Low
- Medium





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03321	C	ED		4	1	1	11	26S	25E	559375	3547431	956	150	23	127
C 02152	C	ED		3	4	33	25S	25E	556763	3549567*		3081	200		
C 02366	CUB	ED		4	4	12	26S	25E	562027	3546345*		3156	80	150	-70
C 02367	CUB	ED		2	2	17	26S	25E	555560	3545912*		4723	30	40	-10
C 02407	C	ED		1	4	1	08	26S	26E	564347	3547268*	4872	160	22	138

Average Depth to Water: **58 feet**

Minimum Depth: **22 feet**

Maximum Depth: **150 feet**

Record Count: 5

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 559599

Northing (Y): 3548362

Radius: 5000

*UTM location was derived from PLSS - see Help

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

APPENDIX C



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633553-001	633553-002	633553-003	633553-004	633553-005	633553-006
	<i>Field Id:</i>	Bttm-1	Bttm-2	Bttm-3	Bttm-4	Bttm-5	Bttm-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 12:00	Aug-07-19 12:05	Aug-07-19 12:10	Aug-07-19 12:15	Aug-07-19 12:20	Aug-07-19 12:25
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-09-19 11:30	Aug-09-19 11:30	Aug-09-19 11:30	Aug-09-19 11:30	Aug-09-19 11:30	Aug-09-19 11:30
	<i>Analyzed:</i>	Aug-11-19 21:39	Aug-11-19 21:59	Aug-11-19 22:20	Aug-11-19 22:40	Aug-11-19 23:00	Aug-11-19 23:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30
	<i>Analyzed:</i>	Aug-09-19 15:59	Aug-09-19 16:16	Aug-09-19 16:22	Aug-09-19 16:28	Aug-09-19 16:33	Aug-09-19 16:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		58.6 49.7	59.5 50.4	59.7 49.7	71.0 50.0	74.9 49.9	81.8 50.4
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-10-19 09:43	Aug-10-19 10:41	Aug-10-19 10:59	Aug-10-19 11:18	Aug-10-19 11:37	Aug-10-19 11:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics		209 15.0	181 15.0	150 14.9	185 15.0	202 15.0	181 14.9
Motor Oil Range Hydrocarbons (MRO)		43.0 15.0	43.4 15.0	31.2 14.9	39.0 15.0	41.4 15.0	37.9 14.9
Total TPH		252 15.0	224 15.0	181 14.9	224 15.0	243 15.0	219 14.9

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633553-007	633553-008	633553-009	633553-010	633553-011	633553-012
	<i>Field Id:</i>	Bttm-7	Bttm-8	Bttm-9	Bttm-10	Bttm-11	Bttm-12
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 12:30	Aug-07-19 12:35	Aug-07-19 12:40	Aug-07-19 12:45	Aug-07-19 12:50	Aug-07-19 12:55
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-09-19 11:30	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-11-19 23:40	Aug-10-19 20:01	Aug-10-19 20:21	Aug-10-19 20:41	Aug-10-19 21:01	Aug-10-19 21:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00396 0.00396	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05
	<i>Analyzed:</i>	Aug-09-19 16:44	Aug-09-19 16:50	Aug-09-19 17:47	Aug-09-19 17:52	Aug-09-19 17:58	Aug-09-19 18:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		76.0 49.8	160 49.5	195 50.0	161 50.0	141 50.4	155 50.2
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-10-19 12:14	Aug-10-19 12:33	Aug-10-19 12:52	Aug-10-19 13:10	Aug-10-19 13:48	Aug-10-19 14:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics		25.7 15.0	27.2 15.0	26.1 15.0	22.9 14.9	31.8 15.0	31.9 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		25.7 15.0	27.2 15.0	26.1 15.0	22.9 14.9	31.8 15.0	31.9 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633553-013	633553-014	633553-015	633553-016	633553-017	633553-018
	<i>Field Id:</i>	Bttm-13	Bttm-14	Bttm-15	Bttm-16	Bttm-17	Bttm-18
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 13:00	Aug-07-19 13:05	Aug-07-19 13:10	Aug-07-19 13:15	Aug-07-19 13:20	Aug-07-19 13:25
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-10-19 21:42	Aug-10-19 22:02	Aug-10-19 22:22	Aug-10-19 22:42	Aug-10-19 23:02	Aug-11-19 00:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05
	<i>Analyzed:</i>	Aug-09-19 18:20	Aug-09-19 18:26	Aug-09-19 18:32	Aug-09-19 18:37	Aug-09-19 18:43	Aug-09-19 19:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		154 49.8	244 50.5	228 50.1	203 49.5	193 49.7	2800 50.2
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-10-19 14:26	Aug-10-19 14:45	Aug-10-19 15:04	Aug-10-19 15:23	Aug-10-19 15:42	Aug-10-19 16:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics		137 15.0	151 15.0	68.2 15.0	71.0 14.9	61.5 15.0	63.8 15.0
Motor Oil Range Hydrocarbons (MRO)		30.2 15.0	32.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		167 15.0	183 15.0	68.2 15.0	71.0 14.9	61.5 15.0	63.8 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633553-019	633553-020	633553-021	633553-022	633553-023	633553-024
	<i>Field Id:</i>	Bttm-19	Bttm-20	Bttm-21	Bttm-22	Bttm-23	Bttm-24
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 13:30	Aug-07-19 13:35	Aug-07-19 13:40	Aug-07-19 13:45	Aug-07-19 13:50	Aug-07-19 13:55
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00
	<i>Analyzed:</i>	Aug-11-19 00:40	Aug-11-19 01:01	Aug-11-19 01:21	Aug-11-19 01:41	Aug-11-19 02:01	Aug-11-19 02:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	0.00219 0.00199	0.00267 0.00198	0.00343 0.00200
m,p-Xylenes		<0.00396 0.00396	<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398	<0.00397 0.00397	<0.00400 0.00400
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	0.00219 0.00199	0.00267 0.00198	0.00343 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:05
	<i>Analyzed:</i>	Aug-09-19 19:11	Aug-09-19 19:28	Aug-09-19 19:34	Aug-09-19 19:39	Aug-09-19 19:45	Aug-09-19 19:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		54100 6250	163 50.0	157 49.7	154 50.4	144 50.0	159 50.0
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00
	<i>Analyzed:</i>	Aug-10-19 16:21	Aug-10-19 16:40	Aug-10-19 18:16	Aug-10-19 19:12	Aug-10-19 19:31	Aug-10-19 19:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics		222 15.0	202 15.0	256 15.0	252 15.0	229 15.0	220 15.0
Motor Oil Range Hydrocarbons (MRO)		47.8 15.0	42.7 15.0	59.6 15.0	57.8 15.0	54.6 15.0	50.2 15.0
Total TPH		270 15.0	245 15.0	316 15.0	310 15.0	284 15.0	270 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	633553-025	633553-026	633553-027	633553-028	633553-029	633553-030
	Field Id:	Bttm-25	Bttm-26	Bttm-27	Bttm-28	Bttm-29	Bttm-30
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-07-19 14:00	Aug-07-19 14:05	Aug-07-19 14:10	Aug-07-19 14:15	Aug-07-19 14:20	Aug-07-19 14:25
BTEX by EPA 8021B	Extracted:	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:00	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30
	Analyzed:	Aug-11-19 02:41	Aug-11-19 03:01	Aug-11-19 03:21	Aug-11-19 08:58	Aug-11-19 09:18	Aug-11-19 09:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00399 0.00399	<0.00401 0.00401	<0.00399 0.00399	<0.00399 0.00399	<0.00399 0.00399	<0.00396 0.00396
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	Extracted:	Aug-09-19 15:05	Aug-09-19 15:05	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30
	Analyzed:	Aug-09-19 19:56	Aug-09-19 20:02	Aug-09-19 23:21	Aug-09-19 23:27	Aug-09-19 23:34	Aug-09-19 23:40
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		147 50.0	120 50.5	148 49.8	95.9 50.0	139 50.2	123 50.5
TPH By SW8015 Mod	Extracted:	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00
	Analyzed:	Aug-10-19 20:08	Aug-10-19 20:27	Aug-10-19 20:46	Aug-10-19 21:05	Aug-10-19 21:24	Aug-10-19 21:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics		56.8 15.0	49.9 14.9	42.3 15.0	30.6 15.0	45.8 15.0	49.4 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		56.8 15.0	49.9 14.9	42.3 15.0	30.6 15.0	45.8 15.0	49.4 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633553

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	633553-031	633553-032	633553-033	633553-034	633553-035	633553-036
	Field Id:	Bttm-31	Bttm-32	Bttm-33	Bttm-34	Bttm-35	Bttm-36
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-07-19 14:30	Aug-07-19 14:35	Aug-07-19 14:40	Aug-07-19 14:50	Aug-07-19 14:50	Aug-07-19 14:55
BTEX by EPA 8021B	Extracted:	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30
	Analyzed:	Aug-11-19 09:58	Aug-11-19 10:18	Aug-11-19 10:39	Aug-11-19 10:59	Aug-11-19 11:19	Aug-11-19 11:39
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00396 0.00396	<0.00397 0.00397	<0.00399 0.00399	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	Extracted:	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30	Aug-09-19 15:30
	Analyzed:	Aug-10-19 00:08	Aug-10-19 00:15	Aug-10-19 00:36	Aug-10-19 00:42	Aug-10-19 00:49	Aug-10-19 00:55
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		54.4 49.5	56.2 49.9	59.2 49.7	67.5 50.4	58.4 49.9	129 49.7
TPH By SW8015 Mod	Extracted:	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00
	Analyzed:	Aug-10-19 22:21	Aug-10-19 22:40	Aug-10-19 22:58	Aug-10-19 23:17	Aug-10-19 23:36	Aug-10-19 23:55
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	40.4 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	40.4 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 633553

for
COG Operating LLC

Project Manager: Sheldon Hitchcock

Pine Springs St. SWD #001

13-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-AUG-19

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **633553**
Pine Springs St. SWD #001
Project Address: Eddy, NM

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 633553. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 633553 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Bttm-1	S	08-07-19 12:00		633553-001
Bttm-2	S	08-07-19 12:05		633553-002
Bttm-3	S	08-07-19 12:10		633553-003
Bttm-4	S	08-07-19 12:15		633553-004
Bttm-5	S	08-07-19 12:20		633553-005
Bttm-6	S	08-07-19 12:25		633553-006
Bttm-7	S	08-07-19 12:30		633553-007
Bttm-8	S	08-07-19 12:35		633553-008
Bttm-9	S	08-07-19 12:40		633553-009
Bttm-10	S	08-07-19 12:45		633553-010
Bttm-11	S	08-07-19 12:50		633553-011
Bttm-12	S	08-07-19 12:55		633553-012
Bttm-13	S	08-07-19 13:00		633553-013
Bttm-14	S	08-07-19 13:05		633553-014
Bttm-15	S	08-07-19 13:10		633553-015
Bttm-16	S	08-07-19 13:15		633553-016
Bttm-17	S	08-07-19 13:20		633553-017
Bttm-18	S	08-07-19 13:25		633553-018
Bttm-19	S	08-07-19 13:30		633553-019
Bttm-20	S	08-07-19 13:35		633553-020
Bttm-21	S	08-07-19 13:40		633553-021
Bttm-22	S	08-07-19 13:45		633553-022
Bttm-23	S	08-07-19 13:50		633553-023
Bttm-24	S	08-07-19 13:55		633553-024
Bttm-25	S	08-07-19 14:00		633553-025
Bttm-26	S	08-07-19 14:05		633553-026
Bttm-27	S	08-07-19 14:10		633553-027
Bttm-28	S	08-07-19 14:15		633553-028
Bttm-29	S	08-07-19 14:20		633553-029
Bttm-30	S	08-07-19 14:25		633553-030
Bttm-31	S	08-07-19 14:30		633553-031
Bttm-32	S	08-07-19 14:35		633553-032
Bttm-33	S	08-07-19 14:40		633553-033
Bttm-34	S	08-07-19 14:50		633553-034
Bttm-35	S	08-07-19 14:50		633553-035
Bttm-36	S	08-07-19 14:55		633553-036



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pine Springs St. SWD #001

Project ID:
Work Order Number(s): 633553

Report Date: 13-AUG-19
Date Received: 08/09/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098127 Inorganic Anions by EPA 300

Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits due to a misinjection.

Samples in the analytical batch are: 633576-003, -004

Lab Sample ID 633576-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 633576-003, -004.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3098299 BTEX by EPA 8021B

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

Batch: LBA-3098324 BTEX by EPA 8021B

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

Batch: LBA-3098382 BTEX by EPA 8021B

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



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-1**
Lab Sample Id: 633553-001

Matrix: Soil
Date Collected: 08.07.19 12.00

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.6	49.7	mg/kg	08.09.19 15.59		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 09.43	U	1
Diesel Range Organics	C10C28DRO	209	15.0	mg/kg	08.10.19 09.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	43.0	15.0	mg/kg	08.10.19 09.43		1
Total TPH	PHC635	252	15.0	mg/kg	08.10.19 09.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 09.43	
o-Terphenyl	84-15-1	91	%	70-135	08.10.19 09.43	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-1**
Lab Sample Id: 633553-001

Matrix: Soil
Date Collected: 08.07.19 12.00

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.11.19 21.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 21.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 21.39		
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.11.19 21.39		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-2**
Lab Sample Id: 633553-002

Matrix: Soil
Date Collected: 08.07.19 12.05

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.5	50.4	mg/kg	08.09.19 16.16		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 10.41	U	1
Diesel Range Organics	C10C28DRO	181	15.0	mg/kg	08.10.19 10.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	43.4	15.0	mg/kg	08.10.19 10.41		1
Total TPH	PHC635	224	15.0	mg/kg	08.10.19 10.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	08.10.19 10.41	
o-Terphenyl	84-15-1	85	%	70-135	08.10.19 10.41	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-2**
Lab Sample Id: 633553-002

Matrix: Soil
Date Collected: 08.07.19 12.05

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.19 21.59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 21.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.11.19 21.59		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 21.59		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-3**
Lab Sample Id: 633553-003

Matrix: Soil
Date Collected: 08.07.19 12.10

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Date Prep: 08.09.19 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.7	49.7	mg/kg	08.09.19 16.22		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Date Prep: 08.09.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 10.59	U	1
Diesel Range Organics	C10C28DRO	150	14.9	mg/kg	08.10.19 10.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	31.2	14.9	mg/kg	08.10.19 10.59		1
Total TPH	PHC635	181	14.9	mg/kg	08.10.19 10.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 10.59	
o-Terphenyl	84-15-1	89	%	70-135	08.10.19 10.59	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-3**
Lab Sample Id: 633553-003

Matrix: Soil
Date Collected: 08.07.19 12.10

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 22.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.19 22.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.11.19 22.20		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 22.20		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-4**
Lab Sample Id: 633553-004

Matrix: Soil
Date Collected: 08.07.19 12.15

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.0	50.0	mg/kg	08.09.19 16.28		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 11.18	U	1
Diesel Range Organics	C10C28DRO	185	15.0	mg/kg	08.10.19 11.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	39.0	15.0	mg/kg	08.10.19 11.18		1
Total TPH	PHC635	224	15.0	mg/kg	08.10.19 11.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.10.19 11.18	
o-Terphenyl	84-15-1	89	%	70-135	08.10.19 11.18	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-4**
Lab Sample Id: 633553-004

Matrix: Soil
Date Collected: 08.07.19 12.15

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 22.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 22.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.11.19 22.40		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.11.19 22.40		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-5**
Lab Sample Id: 633553-005

Matrix: Soil
Date Collected: 08.07.19 12.20

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.9	49.9	mg/kg	08.09.19 16.33		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 11.37	U	1
Diesel Range Organics	C10C28DRO	202	15.0	mg/kg	08.10.19 11.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	41.4	15.0	mg/kg	08.10.19 11.37		1
Total TPH	PHC635	243	15.0	mg/kg	08.10.19 11.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 11.37	
o-Terphenyl	84-15-1	89	%	70-135	08.10.19 11.37	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-5**
Lab Sample Id: 633553-005

Matrix: Soil
Date Collected: 08.07.19 12.20

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.19 23.00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 23.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.11.19 23.00		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.11.19 23.00		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-6**
Lab Sample Id: 633553-006

Matrix: Soil
Date Collected: 08.07.19 12.25

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	81.8	50.4	mg/kg	08.09.19 16.39		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 11.55	U	1
Diesel Range Organics	C10C28DRO	181	14.9	mg/kg	08.10.19 11.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.9	14.9	mg/kg	08.10.19 11.55		1
Total TPH	PHC635	219	14.9	mg/kg	08.10.19 11.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 11.55	
o-Terphenyl	84-15-1	89	%	70-135	08.10.19 11.55	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-6**
Lab Sample Id: 633553-006

Matrix: Soil
Date Collected: 08.07.19 12.25

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.11.19 23.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 23.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 23.20		
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.11.19 23.20		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-7**
Lab Sample Id: 633553-007

Matrix: Soil
Date Collected: 08.07.19 12.30

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	76.0	49.8	mg/kg	08.09.19 16.44		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 12.14	U	1
Diesel Range Organics	C10C28DRO	25.7	15.0	mg/kg	08.10.19 12.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 12.14	U	1
Total TPH	PHC635	25.7	15.0	mg/kg	08.10.19 12.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.10.19 12.14	
o-Terphenyl	84-15-1	86	%	70-135	08.10.19 12.14	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-7**
Lab Sample Id: 633553-007

Matrix: Soil
Date Collected: 08.07.19 12.30

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 11.30

Basis: Wet Weight

Seq Number: 3098324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 23.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 23.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.11.19 23.40		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 23.40		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-8**
Lab Sample Id: 633553-008

Matrix: Soil
Date Collected: 08.07.19 12.35

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	160	49.5	mg/kg	08.09.19 16.50		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 12.33	U	1
Diesel Range Organics	C10C28DRO	27.2	15.0	mg/kg	08.10.19 12.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 12.33	U	1
Total TPH	PHC635	27.2	15.0	mg/kg	08.10.19 12.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.10.19 12.33	
o-Terphenyl	84-15-1	91	%	70-135	08.10.19 12.33	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-8**
Lab Sample Id: 633553-008

Matrix: Soil
Date Collected: 08.07.19 12.35

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 20.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 20.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.10.19 20.01		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.10.19 20.01		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-9**
Lab Sample Id: 633553-009

Matrix: Soil
Date Collected: 08.07.19 12.40

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	195	50.0	mg/kg	08.09.19 17.47		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 12.52	U	1
Diesel Range Organics	C10C28DRO	26.1	15.0	mg/kg	08.10.19 12.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 12.52	U	1
Total TPH	PHC635	26.1	15.0	mg/kg	08.10.19 12.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.10.19 12.52	
o-Terphenyl	84-15-1	87	%	70-135	08.10.19 12.52	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-9**
Lab Sample Id: 633553-009

Matrix: Soil
Date Collected: 08.07.19 12.40

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.10.19 20.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.10.19 20.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.10.19 20.21		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.10.19 20.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-10**
Lab Sample Id: 633553-010

Matrix: Soil
Date Collected: 08.07.19 12.45

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Date Prep: 08.09.19 15.05

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	161	50.0	mg/kg	08.09.19 17.52		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Date Prep: 08.09.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 13.10	U	1
Diesel Range Organics	C10C28DRO	22.9	14.9	mg/kg	08.10.19 13.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.10.19 13.10	U	1
Total TPH	PHC635	22.9	14.9	mg/kg	08.10.19 13.10		1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	87	%	70-135	08.10.19 13.10	
84-15-1	83	%	70-135	08.10.19 13.10	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-10**
Lab Sample Id: 633553-010

Matrix: Soil
Date Collected: 08.07.19 12.45

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 20.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 20.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.10.19 20.41		
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.10.19 20.41		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-11**
Lab Sample Id: 633553-011

Matrix: Soil
Date Collected: 08.07.19 12.50

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Date Prep: 08.09.19 15.05

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	141	50.4	mg/kg	08.09.19 17.58		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Date Prep: 08.09.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 13.48	U	1
Diesel Range Organics	C10C28DRO	31.8	15.0	mg/kg	08.10.19 13.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 13.48	U	1
Total TPH	PHC635	31.8	15.0	mg/kg	08.10.19 13.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.10.19 13.48	
o-Terphenyl	84-15-1	87	%	70-135	08.10.19 13.48	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-11**
Lab Sample Id: 633553-011

Matrix: Soil
Date Collected: 08.07.19 12.50

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 21.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 21.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.10.19 21.01		
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.10.19 21.01		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-12**
Lab Sample Id: 633553-012

Matrix: Soil
Date Collected: 08.07.19 12.55

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	155	50.2	mg/kg	08.09.19 18.04		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 14.07	U	1
Diesel Range Organics	C10C28DRO	31.9	15.0	mg/kg	08.10.19 14.07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 14.07	U	1
Total TPH	PHC635	31.9	15.0	mg/kg	08.10.19 14.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.10.19 14.07	
o-Terphenyl	84-15-1	92	%	70-135	08.10.19 14.07	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-12**
Lab Sample Id: 633553-012

Matrix: Soil
Date Collected: 08.07.19 12.55

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.10.19 21.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 21.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.10.19 21.21		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.10.19 21.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-13**
Lab Sample Id: 633553-013

Matrix: Soil
Date Collected: 08.07.19 13.00

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	154	49.8	mg/kg	08.09.19 18.20		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 14.26	U	1
Diesel Range Organics	C10C28DRO	137	15.0	mg/kg	08.10.19 14.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.2	15.0	mg/kg	08.10.19 14.26		1
Total TPH	PHC635	167	15.0	mg/kg	08.10.19 14.26		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 14.26		
o-Terphenyl	84-15-1	88	%	70-135	08.10.19 14.26		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-13**
Lab Sample Id: 633553-013

Matrix: Soil
Date Collected: 08.07.19 13.00

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 21.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 21.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.10.19 21.42		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.10.19 21.42		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-14**
Lab Sample Id: 633553-014

Matrix: Soil
Date Collected: 08.07.19 13.05

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	244	50.5	mg/kg	08.09.19 18.26		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 14.45	U	1
Diesel Range Organics	C10C28DRO	151	15.0	mg/kg	08.10.19 14.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	32.0	15.0	mg/kg	08.10.19 14.45		1
Total TPH	PHC635	183	15.0	mg/kg	08.10.19 14.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.10.19 14.45	
o-Terphenyl	84-15-1	88	%	70-135	08.10.19 14.45	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-14**
Lab Sample Id: 633553-014

Matrix: Soil
Date Collected: 08.07.19 13.05

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 22.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 22.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.10.19 22.02		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.10.19 22.02		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-15**
Lab Sample Id: 633553-015

Matrix: Soil
Date Collected: 08.07.19 13.10

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	228	50.1	mg/kg	08.09.19 18.32		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 15.04	U	1
Diesel Range Organics	C10C28DRO	68.2	15.0	mg/kg	08.10.19 15.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 15.04	U	1
Total TPH	PHC635	68.2	15.0	mg/kg	08.10.19 15.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	08.10.19 15.04	
o-Terphenyl	84-15-1	79	%	70-135	08.10.19 15.04	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-15**
Lab Sample Id: 633553-015

Matrix: Soil
Date Collected: 08.07.19 13.10

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.10.19 22.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 22.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.10.19 22.22		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.10.19 22.22		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-16**
Lab Sample Id: 633553-016

Matrix: Soil
Date Collected: 08.07.19 13.15

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	203	49.5	mg/kg	08.09.19 18.37		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 15.23	U	1
Diesel Range Organics	C10C28DRO	71.0	14.9	mg/kg	08.10.19 15.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.10.19 15.23	U	1
Total TPH	PHC635	71.0	14.9	mg/kg	08.10.19 15.23		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 15.23		
o-Terphenyl	84-15-1	88	%	70-135	08.10.19 15.23		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-16**
Lab Sample Id: 633553-016

Matrix: Soil
Date Collected: 08.07.19 13.15

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.10.19 22.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.10.19 22.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.10.19 22.42		
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.10.19 22.42		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-17**
Lab Sample Id: 633553-017

Matrix: Soil
Date Collected: 08.07.19 13.20

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	193	49.7	mg/kg	08.09.19 18.43		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 15.42	U	1
Diesel Range Organics	C10C28DRO	61.5	15.0	mg/kg	08.10.19 15.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 15.42	U	1
Total TPH	PHC635	61.5	15.0	mg/kg	08.10.19 15.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 15.42	
o-Terphenyl	84-15-1	85	%	70-135	08.10.19 15.42	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-17**
Lab Sample Id: 633553-017

Matrix: Soil
Date Collected: 08.07.19 13.20

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.10.19 23.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.10.19 23.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.10.19 23.02		
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.10.19 23.02		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-18**
Lab Sample Id: 633553-018

Matrix: Soil
Date Collected: 08.07.19 13.25

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2800	50.2	mg/kg	08.09.19 19.06		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 16.02	U	1
Diesel Range Organics	C10C28DRO	63.8	15.0	mg/kg	08.10.19 16.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 16.02	U	1
Total TPH	PHC635	63.8	15.0	mg/kg	08.10.19 16.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.10.19 16.02	
o-Terphenyl	84-15-1	95	%	70-135	08.10.19 16.02	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-18**
Lab Sample Id: 633553-018

Matrix: Soil
Date Collected: 08.07.19 13.25

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 00.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 00.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.11.19 00.20		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.11.19 00.20		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-19**
Lab Sample Id: 633553-019

Matrix: Soil
Date Collected: 08.07.19 13.30

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Date Prep: 08.09.19 15.05

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54100	6250	mg/kg	08.09.19 19.11		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Date Prep: 08.09.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 16.21	U	1
Diesel Range Organics	C10C28DRO	222	15.0	mg/kg	08.10.19 16.21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	47.8	15.0	mg/kg	08.10.19 16.21		1
Total TPH	PHC635	270	15.0	mg/kg	08.10.19 16.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	08.10.19 16.21	
o-Terphenyl	84-15-1	86	%	70-135	08.10.19 16.21	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-19**
Lab Sample Id: 633553-019

Matrix: Soil
Date Collected: 08.07.19 13.30

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 00.40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 00.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 00.40		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.11.19 00.40		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-20**
Lab Sample Id: 633553-020

Matrix: Soil
Date Collected: 08.07.19 13.35

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	50.0	mg/kg	08.09.19 19.28		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098131

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 16.40	U	1
Diesel Range Organics	C10C28DRO	202	15.0	mg/kg	08.10.19 16.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	42.7	15.0	mg/kg	08.10.19 16.40		1
Total TPH	PHC635	245	15.0	mg/kg	08.10.19 16.40		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	84	%	70-135	08.10.19 16.40		
o-Terphenyl	84-15-1	83	%	70-135	08.10.19 16.40		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-20**
Lab Sample Id: 633553-020

Matrix: Soil
Date Collected: 08.07.19 13.35

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 01.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.19 01.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.11.19 01.01		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 01.01		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-21**
Lab Sample Id: 633553-021

Matrix: Soil
Date Collected: 08.07.19 13.40

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	157	49.7	mg/kg	08.09.19 19.34		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 18.16	U	1
Diesel Range Organics	C10C28DRO	256	15.0	mg/kg	08.10.19 18.16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	59.6	15.0	mg/kg	08.10.19 18.16		1
Total TPH	PHC635	316	15.0	mg/kg	08.10.19 18.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 18.16	
o-Terphenyl	84-15-1	90	%	70-135	08.10.19 18.16	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-21**
Lab Sample Id: 633553-021

Matrix: Soil
Date Collected: 08.07.19 13.40

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 01.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 01.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.11.19 01.21		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 01.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-22**
Lab Sample Id: 633553-022

Matrix: Soil
Date Collected: 08.07.19 13.45

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	154	50.4	mg/kg	08.09.19 19.39		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 19.12	U	1
Diesel Range Organics	C10C28DRO	252	15.0	mg/kg	08.10.19 19.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	57.8	15.0	mg/kg	08.10.19 19.12		1
Total TPH	PHC635	310	15.0	mg/kg	08.10.19 19.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 19.12	
o-Terphenyl	84-15-1	91	%	70-135	08.10.19 19.12	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-22**
Lab Sample Id: 633553-022

Matrix: Soil
Date Collected: 08.07.19 13.45

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 01.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 01.41	U	1
Ethylbenzene	100-41-4	0.00219	0.00199	mg/kg	08.11.19 01.41		1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 01.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 01.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 01.41	U	1
Total BTEX		0.00219	0.00199	mg/kg	08.11.19 01.41		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.11.19 01.41		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 01.41		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-23**
Lab Sample Id: 633553-023

Matrix: Soil
Date Collected: 08.07.19 13.50

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.05

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	144	50.0	mg/kg	08.09.19 19.45		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 19.31	U	1
Diesel Range Organics	C10C28DRO	229	15.0	mg/kg	08.10.19 19.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	54.6	15.0	mg/kg	08.10.19 19.31		1
Total TPH	PHC635	284	15.0	mg/kg	08.10.19 19.31		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 19.31		
o-Terphenyl	84-15-1	96	%	70-135	08.10.19 19.31		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-23**
Lab Sample Id: 633553-023

Matrix: Soil
Date Collected: 08.07.19 13.50

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 02.01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 02.01	U	1
Ethylbenzene	100-41-4	0.00267	0.00198	mg/kg	08.11.19 02.01		1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.19 02.01	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 02.01	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 02.01	U	1
Total BTEX		0.00267	0.00198	mg/kg	08.11.19 02.01		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.11.19 02.01		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 02.01		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-24**
Lab Sample Id: 633553-024

Matrix: Soil
Date Collected: 08.07.19 13.55

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Date Prep: 08.09.19 15.05

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	159	50.0	mg/kg	08.09.19 19.51		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Date Prep: 08.09.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 19.50	U	1
Diesel Range Organics	C10C28DRO	220	15.0	mg/kg	08.10.19 19.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	50.2	15.0	mg/kg	08.10.19 19.50		1
Total TPH	PHC635	270	15.0	mg/kg	08.10.19 19.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	08.10.19 19.50	
o-Terphenyl	84-15-1	87	%	70-135	08.10.19 19.50	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-24**
Lab Sample Id: 633553-024

Matrix: Soil
Date Collected: 08.07.19 13.55

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 02.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 02.21	U	1
Ethylbenzene	100-41-4	0.00343	0.00200	mg/kg	08.11.19 02.21		1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.11.19 02.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 02.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 02.21	U	1
Total BTEX		0.00343	0.00200	mg/kg	08.11.19 02.21		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.11.19 02.21		
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.11.19 02.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-25**
Lab Sample Id: 633553-025

Matrix: Soil
Date Collected: 08.07.19 14.00

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	50.0	mg/kg	08.09.19 19.56		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 20.08	U	1
Diesel Range Organics	C10C28DRO	56.8	15.0	mg/kg	08.10.19 20.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 20.08	U	1
Total TPH	PHC635	56.8	15.0	mg/kg	08.10.19 20.08		1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	85	%	70-135	08.10.19 20.08	
84-15-1	79	%	70-135	08.10.19 20.08	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-25**
Lab Sample Id: 633553-025

Matrix: Soil
Date Collected: 08.07.19 14.00

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 02.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 02.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.11.19 02.41		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 02.41		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-26**
Lab Sample Id: 633553-026

Matrix: Soil
Date Collected: 08.07.19 14.05

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098127

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	120	50.5	mg/kg	08.09.19 20.02		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 20.27	U	1
Diesel Range Organics	C10C28DRO	49.9	14.9	mg/kg	08.10.19 20.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.10.19 20.27	U	1
Total TPH	PHC635	49.9	14.9	mg/kg	08.10.19 20.27		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	87	%	70-135	08.10.19 20.27		
o-Terphenyl	84-15-1	85	%	70-135	08.10.19 20.27		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-26**
Lab Sample Id: 633553-026

Matrix: Soil
Date Collected: 08.07.19 14.05

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.11.19 03.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 03.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 03.01		
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.11.19 03.01		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-27**
Lab Sample Id: 633553-027

Matrix: Soil
Date Collected: 08.07.19 14.10

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	148	49.8	mg/kg	08.09.19 23.21		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 20.46	U	1
Diesel Range Organics	C10C28DRO	42.3	15.0	mg/kg	08.10.19 20.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 20.46	U	1
Total TPH	PHC635	42.3	15.0	mg/kg	08.10.19 20.46		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	89	%	70-135	08.10.19 20.46		
o-Terphenyl	84-15-1	89	%	70-135	08.10.19 20.46		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-27**
Lab Sample Id: 633553-027

Matrix: Soil
Date Collected: 08.07.19 14.10

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.00

Basis: Wet Weight

Seq Number: 3098382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 03.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 03.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 03.21		
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.11.19 03.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-28**
Lab Sample Id: 633553-028

Matrix: Soil
Date Collected: 08.07.19 14.15

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	95.9	50.0	mg/kg	08.09.19 23.27		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 21.05	U	1
Diesel Range Organics	C10C28DRO	30.6	15.0	mg/kg	08.10.19 21.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 21.05	U	1
Total TPH	PHC635	30.6	15.0	mg/kg	08.10.19 21.05		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	89	%	70-135	08.10.19 21.05		
o-Terphenyl	84-15-1	90	%	70-135	08.10.19 21.05		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-28**
Lab Sample Id: 633553-028

Matrix: Soil
Date Collected: 08.07.19 14.15

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 08.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 08.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.11.19 08.58		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.11.19 08.58		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-29**
Lab Sample Id: 633553-029

Matrix: Soil
Date Collected: 08.07.19 14.20

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	139	50.2	mg/kg	08.09.19 23.34		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 21.24	U	1
Diesel Range Organics	C10C28DRO	45.8	15.0	mg/kg	08.10.19 21.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 21.24	U	1
Total TPH	PHC635	45.8	15.0	mg/kg	08.10.19 21.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	82	%	70-135	08.10.19 21.24		
o-Terphenyl	84-15-1	78	%	70-135	08.10.19 21.24		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-29**
Lab Sample Id: 633553-029

Matrix: Soil
Date Collected: 08.07.19 14.20

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 09.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 09.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.11.19 09.18		
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.11.19 09.18		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-30**
Lab Sample Id: 633553-030

Matrix: Soil
Date Collected: 08.07.19 14.25

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	123	50.5	mg/kg	08.09.19 23.40		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 21.43	U	1
Diesel Range Organics	C10C28DRO	49.4	15.0	mg/kg	08.10.19 21.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 21.43	U	1
Total TPH	PHC635	49.4	15.0	mg/kg	08.10.19 21.43		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 21.43		
o-Terphenyl	84-15-1	82	%	70-135	08.10.19 21.43		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-30**
Lab Sample Id: 633553-030

Matrix: Soil
Date Collected: 08.07.19 14.25

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 09.38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 09.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 09.38		
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.11.19 09.38		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-31**
Lab Sample Id: 633553-031

Matrix: Soil
Date Collected: 08.07.19 14.30

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.4	49.5	mg/kg	08.10.19 00.08		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 22.21	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.10.19 22.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 22.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.10.19 22.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	90	%	70-135	08.10.19 22.21		
o-Terphenyl	84-15-1	88	%	70-135	08.10.19 22.21		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-31**
Lab Sample Id: 633553-031

Matrix: Soil
Date Collected: 08.07.19 14.30

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 09.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 09.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 09.58		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.11.19 09.58		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-32**
Lab Sample Id: 633553-032

Matrix: Soil
Date Collected: 08.07.19 14.35

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.2	49.9	mg/kg	08.10.19 00.15		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	08.10.19 22.40	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9	mg/kg	08.10.19 22.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	08.10.19 22.40	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.10.19 22.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-135	08.10.19 22.40		
o-Terphenyl	84-15-1	91	%	70-135	08.10.19 22.40		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-32**
Lab Sample Id: 633553-032

Matrix: Soil
Date Collected: 08.07.19 14.35

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 10.18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.19 10.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 10.18		
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.11.19 10.18		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-33**
Lab Sample Id: 633553-033

Matrix: Soil
Date Collected: 08.07.19 14.40

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.2	49.7	mg/kg	08.10.19 00.36		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 22.58	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.10.19 22.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 22.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.10.19 22.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	08.10.19 22.58		
o-Terphenyl	84-15-1	92	%	70-135	08.10.19 22.58		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-33**
Lab Sample Id: 633553-033

Matrix: Soil
Date Collected: 08.07.19 14.40

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 10.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 10.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 10.39		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.11.19 10.39		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-34**
Lab Sample Id: 633553-034

Matrix: Soil
Date Collected: 08.07.19 14.50

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.5	50.4	mg/kg	08.10.19 00.42		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 23.17	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.10.19 23.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 23.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.10.19 23.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.10.19 23.17	
o-Terphenyl	84-15-1	87	%	70-135	08.10.19 23.17	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-34**
Lab Sample Id: 633553-034

Matrix: Soil
Date Collected: 08.07.19 14.50

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.19 10.59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 10.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.11.19 10.59		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.11.19 10.59		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-35**
Lab Sample Id: 633553-035

Matrix: Soil
Date Collected: 08.07.19 14.50

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.4	49.9	mg/kg	08.10.19 00.49		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 23.36	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.10.19 23.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 23.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.10.19 23.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	08.10.19 23.36		
o-Terphenyl	84-15-1	91	%	70-135	08.10.19 23.36		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-35**
Lab Sample Id: 633553-035

Matrix: Soil
Date Collected: 08.07.19 14.50

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 11.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 11.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.11.19 11.19		
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.11.19 11.19		



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-36**
Lab Sample Id: 633553-036

Matrix: Soil
Date Collected: 08.07.19 14.55

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098128

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 15.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	129	49.7	mg/kg	08.10.19 00.55		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.10.19 23.55	U	1
Diesel Range Organics	C10C28DRO	40.4	15.0	mg/kg	08.10.19 23.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.10.19 23.55	U	1
Total TPH	PHC635	40.4	15.0	mg/kg	08.10.19 23.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.10.19 23.55	
o-Terphenyl	84-15-1	83	%	70-135	08.10.19 23.55	



Certificate of Analytical Results 633553



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **Bttm-36**
Lab Sample Id: 633553-036

Matrix: Soil
Date Collected: 08.07.19 14.55

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.11.19 11.39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.11.19 11.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.11.19 11.39		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 11.39		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

COG Operating LLC
Pine Springs St. SWD #001

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

MB Sample Id: 7683921-1-BLK

Matrix: Solid

LCS Sample Id: 7683921-1-BKS

Prep Method: E300P

Date Prep: 08.09.19

LCSD Sample Id: 7683921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	238	95	259	104	90-110	8	20	mg/kg	08.09.19 13:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3098127

MB Sample Id: 7683952-1-BLK

Matrix: Solid

LCS Sample Id: 7683952-1-BKS

Prep Method: E300P

Date Prep: 08.09.19

LCSD Sample Id: 7683952-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	267	107	90-110	9	20	mg/kg	08.09.19 17:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3098128

MB Sample Id: 7683953-1-BLK

Matrix: Solid

LCS Sample Id: 7683953-1-BKS

Prep Method: E300P

Date Prep: 08.09.19

LCSD Sample Id: 7683953-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	253	101	90-110	0	20	mg/kg	08.09.19 21:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

Parent Sample Id: 633554-004

Matrix: Soil

MS Sample Id: 633554-004 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633554-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.0	251	286	99	284	98	90-110	1	20	mg/kg	08.09.19 14:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

Parent Sample Id: 633554-005

Matrix: Soil

MS Sample Id: 633554-005 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633554-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.7	252	292	102	307	108	90-110	5	20	mg/kg	08.09.19 15:42	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 633553

COG Operating LLC Pine Springs St. SWD #001

Analytical Method: Chloride by EPA 300

Seq Number: 3098127

Parent Sample Id: 633576-003

Matrix: Soil

MS Sample Id: 633576-003 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633576-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.69	253	261	101	268	103	90-110	3	20	mg/kg	08.09.19 17:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3098127

Parent Sample Id: 633576-004

Matrix: Soil

MS Sample Id: 633576-004 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633576-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.9	250	4.06	0	256	95	90-110	194	20	mg/kg	08.09.19 18:54	XF

Analytical Method: Chloride by EPA 300

Seq Number: 3098128

Parent Sample Id: 633498-001

Matrix: Sludge

MS Sample Id: 633498-001 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633498-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.76	251	267	105	266	105	90-110	0	20	mg/kg	08.09.19 23:54	

Analytical Method: Chloride by EPA 300

Seq Number: 3098128

Parent Sample Id: 633567-001

Matrix: Soil

MS Sample Id: 633567-001 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633567-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.8	252	287	102	292	104	90-110	2	20	mg/kg	08.09.19 22:15	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098132

MB Sample Id: 7683939-1-BLK

Matrix: Solid

LCS Sample Id: 7683939-1-BKS

Prep Method: TX1005P

Date Prep: 08.09.19

LCSD Sample Id: 7683939-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	1110	111	1100	110	70-135	1	20	mg/kg	08.10.19 17:38	
Diesel Range Organics	<8.13	1000	1070	107	1020	102	70-135	5	20	mg/kg	08.10.19 17:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		125		119		70-135	%	08.10.19 17:38
o-Terphenyl	93		100		97		70-135	%	08.10.19 17:38

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 633553

COG Operating LLC Pine Springs St. SWD #001

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098131

MB Sample Id: 7683938-1-BLK

Matrix: Solid

LCS Sample Id: 7683938-1-BKS

Prep Method: TX1005P

Date Prep: 08.09.19

LCSD Sample Id: 7683938-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	1110	111	1130	113	70-135	2	20	mg/kg	08.10.19 09:06	
Diesel Range Organics	<8.13	1000	1010	101	1050	105	70-135	4	20	mg/kg	08.10.19 09:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	92		114		125		70-135	%	08.10.19 09:06			
o-Terphenyl	94		100		100		70-135	%	08.10.19 09:06			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098132

Parent Sample Id: 633553-021

Matrix: Soil

MS Sample Id: 633553-021 S

Prep Method: TX1005P

Date Prep: 08.09.19

MSD Sample Id: 633553-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	9.06	998	968	96	975	97	70-135	1	20	mg/kg	08.10.19 18:35	
Diesel Range Organics	256	998	1220	97	1210	96	70-135	1	20	mg/kg	08.10.19 18:35	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			112			114			70-135	%	08.10.19 18:35	
o-Terphenyl			91			93			70-135	%	08.10.19 18:35	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098131

Parent Sample Id: 633553-001

Matrix: Soil

MS Sample Id: 633553-001 S

Prep Method: TX1005P

Date Prep: 08.09.19

MSD Sample Id: 633553-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	8.71	997	948	94	958	95	70-135	1	20	mg/kg	08.10.19 10:03	
Diesel Range Organics	209	997	1110	90	1100	89	70-135	1	20	mg/kg	08.10.19 10:03	
Surrogate				MS %Rec	MS Flag		MSD %Rec	MSD Flag	Limits	Units	Analysis Date	
1-Chlorooctane				114			115		70-135	%	08.10.19 10:03	
o-Terphenyl				92			94		70-135	%	08.10.19 10:03	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

COG Operating LLC
Pine Springs St. SWD #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098324

MB Sample Id: 7683899-1-BLK

Matrix: Solid

LCS Sample Id: 7683899-1-BKS

Prep Method: SW5030B

Date Prep: 08.09.19

LCSD Sample Id: 7683899-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.103	103	0.0882	88	70-130	15	35	mg/kg	08.11.19 14:38	
Toluene	<0.000456	0.100	0.0904	90	0.0799	80	70-130	12	35	mg/kg	08.11.19 14:38	
Ethylbenzene	<0.00200	0.100	0.0875	88	0.0781	78	70-130	11	35	mg/kg	08.11.19 14:38	
m,p-Xylenes	<0.00101	0.200	0.172	86	0.155	78	70-130	10	35	mg/kg	08.11.19 14:38	
o-Xylene	<0.000344	0.100	0.0907	91	0.0826	83	70-130	9	35	mg/kg	08.11.19 14:38	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	105		102		103		70-130			%	08.11.19 14:38	
4-Bromofluorobenzene	99		99		104		70-130			%	08.11.19 14:38	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098382

MB Sample Id: 7683929-1-BLK

Matrix: Solid

LCS Sample Id: 7683929-1-BKS

Prep Method: SW5030B

Date Prep: 08.09.19

LCSD Sample Id: 7683929-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.111	111	0.0866	87	70-130	25	35	mg/kg	08.10.19 18:01	
Toluene	0.000650	0.100	0.101	101	0.0807	81	70-130	22	35	mg/kg	08.10.19 18:01	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0816	82	70-130	22	35	mg/kg	08.10.19 18:01	
m,p-Xylenes	<0.00101	0.200	0.204	102	0.164	82	70-130	22	35	mg/kg	08.10.19 18:01	
o-Xylene	<0.000344	0.100	0.104	104	0.0841	84	70-130	21	35	mg/kg	08.10.19 18:01	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	105		101		102		70-130			%	08.10.19 18:01	
4-Bromofluorobenzene	105		101		105		70-130			%	08.10.19 18:01	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098299

MB Sample Id: 7683930-1-BLK

Matrix: Solid

LCS Sample Id: 7683930-1-BKS

Prep Method: SW5030B

Date Prep: 08.09.19

LCSD Sample Id: 7683930-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0980	98	0.0985	99	70-130	1	35	mg/kg	08.11.19 06:58	
Toluene	<0.00200	0.100	0.0962	96	0.0954	95	70-130	1	35	mg/kg	08.11.19 06:58	
Ethylbenzene	<0.00200	0.100	0.109	109	0.109	109	70-130	0	35	mg/kg	08.11.19 06:58	
m,p-Xylenes	<0.00400	0.200	0.224	112	0.223	112	70-130	0	35	mg/kg	08.11.19 06:58	
o-Xylene	<0.00200	0.100	0.106	106	0.111	111	70-130	5	35	mg/kg	08.11.19 06:58	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	100		97		100		70-130	%	08.11.19 06:58			
4-Bromofluorobenzene	101		110		120		70-130	%	08.11.19 06:58			

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$ LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 633553

COG Operating LLC Pine Springs St. SWD #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098382

Parent Sample Id: 633553-008

Matrix: Soil

MS Sample Id: 633553-008 S

Prep Method: SW5030B

Date Prep: 08.09.19

MSD Sample Id: 633553-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0983	98	0.109	110	70-130	10	35	mg/kg	08.10.19 18:41	
Toluene	<0.000455	0.0998	0.0906	91	0.0992	100	70-130	9	35	mg/kg	08.10.19 18:41	
Ethylbenzene	<0.00200	0.0998	0.0913	91	0.0993	100	70-130	8	35	mg/kg	08.10.19 18:41	
m,p-Xylenes	<0.00101	0.200	0.184	92	0.198	99	70-130	7	35	mg/kg	08.10.19 18:41	
o-Xylene	<0.00200	0.0998	0.0944	95	0.102	103	70-130	8	35	mg/kg	08.10.19 18:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	08.10.19 18:41
4-Bromofluorobenzene	106		112		70-130	%	08.10.19 18:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098299

Parent Sample Id: 633553-028

Matrix: Soil

MS Sample Id: 633553-028 S

Prep Method: SW5030B

Date Prep: 08.09.19

MSD Sample Id: 633553-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.102	103	0.0960	96	70-130	6	35	mg/kg	08.11.19 07:38	
Toluene	<0.00198	0.0990	0.0952	96	0.0910	91	70-130	5	35	mg/kg	08.11.19 07:38	
Ethylbenzene	<0.00198	0.0990	0.104	105	0.101	101	70-130	3	35	mg/kg	08.11.19 07:38	
m,p-Xylenes	<0.00396	0.198	0.209	106	0.201	101	70-130	4	35	mg/kg	08.11.19 07:38	
o-Xylene	<0.00198	0.0990	0.107	108	0.103	103	70-130	4	35	mg/kg	08.11.19 07:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		70-130	%	08.11.19 07:38
4-Bromofluorobenzene	125		123		70-130	%	08.11.19 07:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098324

Parent Sample Id: 633270-001

Matrix: Soil

MS Sample Id: 633270-001 S

Prep Method: SW5030B

Date Prep: 08.09.19

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0933	94	70-130	mg/kg	08.11.19 15:19	
Toluene	0.000538	0.0992	0.0813	81	70-130	mg/kg	08.11.19 15:19	
Ethylbenzene	<0.00198	0.0992	0.0771	78	70-130	mg/kg	08.11.19 15:19	
m,p-Xylenes	<0.00101	0.198	0.147	74	70-130	mg/kg	08.11.19 15:19	
o-Xylene	0.000349	0.0992	0.0844	85	70-130	mg/kg	08.11.19 15:19	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		70-130	%	08.11.19 15:19
4-Bromofluorobenzene	115		70-130	%	08.11.19 15:19

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

CONCHO

One Concho Center/500 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

ORIGINAL COPY

103553 Page 1 of 4



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 08/09/2019 11:05:00 AM

Work Order #: 633553

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 08/09/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 08/12/2019



Certificate of Analysis Summary 633554

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	633554-001	633554-002	633554-003	633554-004	633554-005	633554-006
	<i>Field Id:</i>	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-07-19 10:00	Aug-07-19 10:05	Aug-07-19 10:10	Aug-07-19 10:15	Aug-07-19 10:20	Aug-07-19 10:25
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30
	<i>Analyzed:</i>	Aug-11-19 12:00	Aug-11-19 01:23	Aug-11-19 01:43	Aug-11-19 02:03	Aug-11-19 02:24	Aug-11-19 02:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
m,p-Xylenes		<0.00399 0.00399	<0.00396 0.00396	<0.00398 0.00398	<0.00401 0.00401	<0.00396 0.00396	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30	Aug-09-19 13:30
	<i>Analyzed:</i>	Aug-09-19 20:19	Aug-09-19 15:14	Aug-09-19 15:20	Aug-09-19 14:00	Aug-09-19 15:37	Aug-09-19 20:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		54.4 4.98	79.2 24.9	254 50.0	38.0 5.68	35.7 5.04	30.3 4.98
TPH By SW8015 Mod	<i>Extracted:</i>	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 12:00	Aug-09-19 15:00	Aug-09-19 15:00	Aug-09-19 15:00
	<i>Analyzed:</i>	Aug-11-19 00:14	Aug-11-19 00:33	Aug-11-19 00:51	Aug-11-19 06:10	Aug-11-19 06:47	Aug-11-19 07:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	20.1 15.0
Diesel Range Organics		<15.0 15.0	<15.0 15.0	313 15.0	<15.0 15.0	<15.0 15.0	129 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	55.9 15.0	<15.0 15.0	<15.0 15.0	34.5 15.0
Total TPH		<15.0 15.0	<15.0 15.0	369 15.0	<15.0 15.0	<15.0 15.0	184 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 633554

COG Operating LLC, Artesia, NM

Project Name: Pine Springs St. SWD #001



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Fri Aug-09-19 11:05 am

Report Date: 13-AUG-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	633554-007	633554-008				
	Field Id:	SW-7	SW-8				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Aug-07-19 10:30	Aug-07-19 10:35				
BTEX by EPA 8021B	Extracted:	Aug-09-19 13:30	Aug-09-19 13:30				
	Analyzed:	Aug-11-19 03:06	Aug-11-19 03:26				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00200 0.00200				
Toluene		<0.00200 0.00200	<0.00200 0.00200				
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200				
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399				
o-Xylene		<0.00200 0.00200	<0.00200 0.00200				
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200				
Total BTEX		<0.00200 0.00200	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Aug-09-19 13:30	Aug-09-19 13:30				
	Analyzed:	Aug-09-19 20:30	Aug-09-19 20:36				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		82.9 4.95	179 5.01				
TPH By SW8015 Mod	Extracted:	Aug-09-19 15:00	Aug-09-19 15:00				
	Analyzed:	Aug-11-19 07:25	Aug-11-19 07:44				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0				
Diesel Range Organics		<15.0 15.0	139 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	37.4 15.0				
Total TPH		<15.0 15.0	176 15.0				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 633554

for
COG Operating LLC

Project Manager: Sheldon Hitchcock

Pine Springs St. SWD #001

13-AUG-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-AUG-19

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **633554**
Pine Springs St. SWD #001
Project Address: Eddy, NM

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 633554. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 633554 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW-1	S	08-07-19 10:00		633554-001
SW-2	S	08-07-19 10:05		633554-002
SW-3	S	08-07-19 10:10		633554-003
SW-4	S	08-07-19 10:15		633554-004
SW-5	S	08-07-19 10:20		633554-005
SW-6	S	08-07-19 10:25		633554-006
SW-7	S	08-07-19 10:30		633554-007
SW-8	S	08-07-19 10:35		633554-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Pine Springs St. SWD #001

Project ID:
Work Order Number(s): 633554

Report Date: 13-AUG-19
Date Received: 08/09/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098299 BTEX by EPA 8021B

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



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-1**
Lab Sample Id: 633554-001

Matrix: Soil
Date Collected: 08.07.19 10.00

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.4	4.98	mg/kg	08.09.19 20.19		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 00.14	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.11.19 00.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.11.19 00.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.19 00.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.11.19 00.14	
o-Terphenyl	84-15-1	83	%	70-135	08.11.19 00.14	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-1**
Lab Sample Id: 633554-001

Matrix: Soil
Date Collected: 08.07.19 10.00

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 12.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 12.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.11.19 12.00		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.11.19 12.00		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: SW-2
Lab Sample Id: 633554-002

Matrix: Soil
Date Collected: 08.07.19 10.05

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.2	24.9	mg/kg	08.09.19 15.14		5

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 00.33	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.11.19 00.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.11.19 00.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.19 00.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.11.19 00.33	
o-Terphenyl	84-15-1	89	%	70-135	08.11.19 00.33	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: SW-2
Lab Sample Id: 633554-002

Matrix: Soil
Date Collected: 08.07.19 10.05

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 01.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 01.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.11.19 01.23		
4-Bromofluorobenzene	460-00-4	97	%	70-130	08.11.19 01.23		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-3**
Lab Sample Id: 633554-003

Matrix: Soil
Date Collected: 08.07.19 10.10

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	254	50.0	mg/kg	08.09.19 15.20		10

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098132

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 00.51	U	1
Diesel Range Organics	C10C28DRO	313	15.0	mg/kg	08.11.19 00.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	55.9	15.0	mg/kg	08.11.19 00.51		1
Total TPH	PHC635	369	15.0	mg/kg	08.11.19 00.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	08.11.19 00.51	
o-Terphenyl	84-15-1	90	%	70-135	08.11.19 00.51	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-3**
Lab Sample Id: 633554-003

Matrix: Soil
Date Collected: 08.07.19 10.10

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.19 01.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.19 01.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.11.19 01.43		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.11.19 01.43		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-4**
Lab Sample Id: 633554-004

Matrix: Soil
Date Collected: 08.07.19 10.15

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.0	5.68	mg/kg	08.09.19 14.00		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098133

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 15.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 06.10	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.11.19 06.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.11.19 06.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.19 06.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.11.19 06.10	
o-Terphenyl	84-15-1	90	%	70-135	08.11.19 06.10	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-4**
Lab Sample Id: 633554-004

Matrix: Soil
Date Collected: 08.07.19 10.15

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.11.19 02.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 02.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.11.19 02.03		
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.11.19 02.03		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: SW-5
Lab Sample Id: 633554-005

Matrix: Soil
Date Collected: 08.07.19 10.20

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 13.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.7	5.04	mg/kg	08.09.19 15.37		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098133

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.09.19 15.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 06.47	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.11.19 06.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.11.19 06.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.19 06.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.11.19 06.47	
o-Terphenyl	84-15-1	93	%	70-135	08.11.19 06.47	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: SW-5
Lab Sample Id: 633554-005

Matrix: Soil
Date Collected: 08.07.19 10.20

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.11.19 02.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 02.24	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		98	%	70-130	08.11.19 02.24	
1,4-Difluorobenzene	540-36-3		104	%	70-130	08.11.19 02.24	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-6**
Lab Sample Id: 633554-006

Matrix: Soil
Date Collected: 08.07.19 10.25

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.3	4.98	mg/kg	08.09.19 20.25		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098133

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 15.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	20.1	15.0	mg/kg	08.11.19 07.06		1
Diesel Range Organics	C10C28DRO	129	15.0	mg/kg	08.11.19 07.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	34.5	15.0	mg/kg	08.11.19 07.06		1
Total TPH	PHC635	184	15.0	mg/kg	08.11.19 07.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	80	%	70-135	08.11.19 07.06		
o-Terphenyl	84-15-1	75	%	70-135	08.11.19 07.06		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-6**
Lab Sample Id: 633554-006

Matrix: Soil
Date Collected: 08.07.19 10.25

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.19 02.45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.19 02.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.11.19 02.45		
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.11.19 02.45		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-7**
Lab Sample Id: 633554-007

Matrix: Soil
Date Collected: 08.07.19 10.30

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.9	4.95	mg/kg	08.09.19 20.30		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098133

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 15.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 07.25	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	08.11.19 07.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	08.11.19 07.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.19 07.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.11.19 07.25	
o-Terphenyl	84-15-1	93	%	70-135	08.11.19 07.25	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-7**
Lab Sample Id: 633554-007

Matrix: Soil
Date Collected: 08.07.19 10.30

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.11.19 03.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 03.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.11.19 03.06		
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.11.19 03.06		



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-8**
Lab Sample Id: 633554-008

Matrix: Soil
Date Collected: 08.07.19 10.35

Date Received: 08.09.19 11.05

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3098092

Prep Method: E300P

% Moisture:

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	5.01	mg/kg	08.09.19 20.36		1

Analytical Method: TPH By SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3098133

Prep Method: TX1005P

% Moisture:

Date Prep: 08.09.19 15.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	08.11.19 07.44	U	1
Diesel Range Organics	C10C28DRO	139	15.0	mg/kg	08.11.19 07.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.4	15.0	mg/kg	08.11.19 07.44		1
Total TPH	PHC635	176	15.0	mg/kg	08.11.19 07.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.11.19 07.44	
o-Terphenyl	84-15-1	83	%	70-135	08.11.19 07.44	



Certificate of Analytical Results 633554



COG Operating LLC, Artesia, NM

Pine Springs St. SWD #001

Sample Id: **SW-8**
Lab Sample Id: 633554-008

Matrix: Soil
Date Collected: 08.07.19 10.35

Date Received: 08.09.19 11.05

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 08.09.19 13.30

Basis: Wet Weight

Seq Number: 3098299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.19 03.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.19 03.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	08.11.19 03.26		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.11.19 03.26		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 633554

COG Operating LLC Pine Springs St. SWD #001

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

MB Sample Id: 7683921-1-BLK

Matrix: Solid

LCS Sample Id: 7683921-1-BKS

Prep Method: E300P

Date Prep: 08.09.19

LCSD Sample Id: 7683921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	238	95	259	104	90-110	8	20	mg/kg	08.09.19 13:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

Parent Sample Id: 633554-004

Matrix: Soil

MS Sample Id: 633554-004 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633554-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.0	251	286	99	284	98	90-110	1	20	mg/kg	08.09.19 14:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3098092

Parent Sample Id: 633554-005

Matrix: Soil

MS Sample Id: 633554-005 S

Prep Method: E300P

Date Prep: 08.09.19

MSD Sample Id: 633554-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.7	252	292	102	307	108	90-110	5	20	mg/kg	08.09.19 15:42	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098132

MB Sample Id: 7683939-1-BLK

Matrix: Solid

LCS Sample Id: 7683939-1-BKS

Prep Method: TX1005P

Date Prep: 08.09.19

LCSD Sample Id: 7683939-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	1110	111	1100	110	70-135	1	20	mg/kg	08.10.19 17:38	
Diesel Range Organics	<8.13	1000	1070	107	1020	102	70-135	5	20	mg/kg	08.10.19 17:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		125		119		70-135	%	08.10.19 17:38
o-Terphenyl	93		100		97		70-135	%	08.10.19 17:38

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 633554

COG Operating LLC Pine Springs St. SWD #001

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098133

MB Sample Id: 7683942-1-BLK

Matrix: Solid

LCS Sample Id: 7683942-1-BKS

Prep Method: TX1005P

Date Prep: 08.09.19

LCSD Sample Id: 7683942-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	1100	110	1130	113	70-135	3	20	mg/kg	08.11.19 02:06	
Diesel Range Organics	<8.13	1000	993	99	1030	103	70-135	4	20	mg/kg	08.11.19 02:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	90		120		124		70-135	%	08.11.19 02:06			
o-Terphenyl	91		98		107		70-135	%	08.11.19 02:06			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098132

Parent Sample Id: 633553-021

Matrix: Soil

MS Sample Id: 633553-021 S

Prep Method: TX1005P

Date Prep: 08.09.19

MSD Sample Id: 633553-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	9.06	998	968	96	975	97	70-135	1	20	mg/kg	08.10.19 18:35	
Diesel Range Organics	256	998	1220	97	1210	96	70-135	1	20	mg/kg	08.10.19 18:35	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			112		114		70-135	%	08.10.19 18:35			
o-Terphenyl			91		93		70-135	%	08.10.19 18:35			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3098133

Parent Sample Id: 633251-001

Matrix: Soil

MS Sample Id: 633251-001 S

Prep Method: TX1005P

Date Prep: 08.09.19

MSD Sample Id: 633251-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<7.98	997	1190	119	1150	115	70-135	3	20	mg/kg	08.11.19 03:02	
Diesel Range Organics	<8.10	997	1150	115	1170	117	70-135	2	20	mg/kg	08.11.19 03:02	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			127		126		70-135	%	08.11.19 03:02			
o-Terphenyl			116		118		70-135	%	08.11.19 03:02			

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

COG Operating LLC
Pine Springs St. SWD #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098299

MB Sample Id: 7683930-1-BLK

Matrix: Solid

LCS Sample Id: 7683930-1-BKS

Prep Method: SW5030B

Date Prep: 08.09.19

LCSD Sample Id: 7683930-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0980	98	0.0985	99	70-130	1	35	mg/kg	08.11.19 06:58	
Toluene	<0.00200	0.100	0.0962	96	0.0954	95	70-130	1	35	mg/kg	08.11.19 06:58	
Ethylbenzene	<0.00200	0.100	0.109	109	0.109	109	70-130	0	35	mg/kg	08.11.19 06:58	
m,p-Xylenes	<0.00400	0.200	0.224	112	0.223	112	70-130	0	35	mg/kg	08.11.19 06:58	
o-Xylene	<0.00200	0.100	0.106	106	0.111	111	70-130	5	35	mg/kg	08.11.19 06:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		97		100		70-130	%	08.11.19 06:58
4-Bromofluorobenzene	101		110		120		70-130	%	08.11.19 06:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3098299

Parent Sample Id: 633553-028

Matrix: Soil

MS Sample Id: 633553-028 S

Prep Method: SW5030B

Date Prep: 08.09.19

MSD Sample Id: 633553-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.102	103	0.0960	96	70-130	6	35	mg/kg	08.11.19 07:38	
Toluene	<0.00198	0.0990	0.0952	96	0.0910	91	70-130	5	35	mg/kg	08.11.19 07:38	
Ethylbenzene	<0.00198	0.0990	0.104	105	0.101	101	70-130	3	35	mg/kg	08.11.19 07:38	
m,p-Xylenes	<0.00396	0.198	0.209	106	0.201	101	70-130	4	35	mg/kg	08.11.19 07:38	
o-Xylene	<0.00198	0.0990	0.107	108	0.103	103	70-130	4	35	mg/kg	08.11.19 07:38	

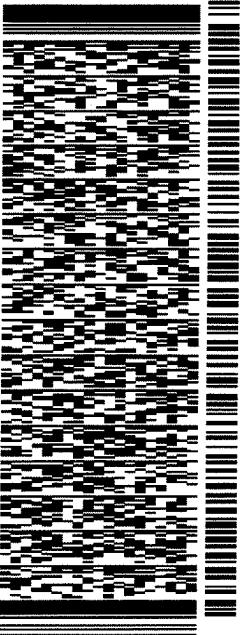
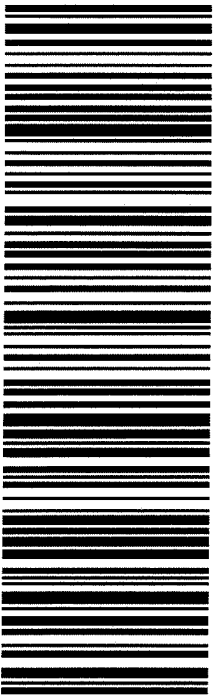
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		70-130	%	08.11.19 07:38
4-Bromofluorobenzene	125		123		70-130	%	08.11.19 07:38

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

132524

of

ORIGINAL COPYFinal 1.000

ORIGIN ID: CACA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 08AUG19 ACTWGT: 55.00 LB CAD: 114488676/NINET4160 DIMS: 13x14x18 IN BILL SENDER
TO SAMPLE RECEIVING	
3600 S COUNTY ROAD 1276 MIDLAND TX 79706 REF: (432) 704-5440 INV: PO: DEPT:	
 	
TRK# 7759 4123 5984 0201	FRI - 09 AUG HOLD PRIORITY OVERNIGHT HLD TX-US LBB 79706
41 MAFA 	

567J3/E9E7/05A2

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 08/09/2019 11:05:00 AM

Work Order #: 633554

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 08/09/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 08/12/2019



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

August 22, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: PINE SPRINGS STATE SWD #001

Enclosed are the results of analyses for samples received by the laboratory on 08/21/19 15:25.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 1 (H902880-01)

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	95.1 %	41-142							
Surrogate: 1-Chlorooctadecane	103 %	37.6-147							

Sample ID: BTM - 2 (H902880-02)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	90.4 %	41-142							
Surrogate: 1-Chlorooctadecane	97.3 %	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

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 3 (H902880-03)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	80.2 %	41-142							
Surrogate: 1-Chlorooctadecane	84.7 %	37.6-147							

Sample ID: BTM - 4 (H902880-04)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	81.9 %	41-142							
Surrogate: 1-Chlorooctadecane	87.8 %	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

Analytical Results For:COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONEReceived: 08/21/2019
Reported: 08/22/2019
Project Name: PINE SPRINGS STATE SWD #001
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NMSampling Date: 08/21/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson**Sample ID: BTM - 5 (H902880-05)**

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	76.0 %	41-142							
Surrogate: 1-Chlorooctadecane	80.2 %	37.6-147							

Sample ID: BTM - 6 (H902880-06)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	98.6 %	41-142							
Surrogate: 1-Chlorooctadecane	106 %	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

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 13 (H902880-07)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	91.1 %	41-142							
Surrogate: 1-Chlorooctadecane	98.1 %	37.6-147							

Sample ID: BTM - 14 (H902880-08)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	95.9 %	41-142							
Surrogate: 1-Chlorooctadecane	102 %	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

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 18 (H902880-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/22/2019	ND	432	108	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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	88.0 %	41-142							
Surrogate: 1-Chlorooctadecane	94.7 %	37.6-147							

Sample ID: BTM - 19 (H902880-10)

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	08/22/2019	ND	432	108	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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	91.8 %	41-142							
Surrogate: 1-Chlorooctadecane	100 %	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

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 20 (H902880-11)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	94.4 %	41-142							
Surrogate: 1-Chlorooctadecane	100 %	37.6-147							

Sample ID: BTM - 21 (H902880-12)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	20.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	88.7 %	41-142							
Surrogate: 1-Chlorooctadecane	92.8 %	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

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 22 (H902880-13)

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	08/22/2019	ND	205	102	200	3.65	
DRO >C10-C28*	16.7	10.0	08/22/2019	ND	195	97.4	200	2.93	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	91.8 %	41-142							
Surrogate: 1-Chlorooctadecane	97.3 %	37.6-147							

Sample ID: BTM - 23 (H902880-14)

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	08/22/2019	ND	205	102	200	3.65	
DRO >C10-C28*	15.6	10.0	08/22/2019	ND	195	97.4	200	2.93	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	94.9 %	41-142							
Surrogate: 1-Chlorooctadecane	102 %	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

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: BTM - 24 (H902880-15)

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	08/22/2019	ND	205	102	200	3.65	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	195	97.4	200	2.93	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	95.8 %	41-142							
Surrogate: 1-Chlorooctadecane	101 %	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

Notes and Definitions

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

Cardinal Laboratories

*=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

Analysis Request of Chain of Custody Record



One Concho Center/600 Illinois
Avenue/Elkland, Texas
Tel (432) 683-7443

Client Name: COG-Artesia		Site Manager: Sheldon Hitchcock	
Project Name: Pine Springs St. SWD #001			
Project Location: (county, state) <u>El Paso, NM</u>		Project #:	
Invoice to: Sheldon Hitchcock		Sampler Name: Sheldon Hitchcock	
Receiving Laboratory: <u>Cardinal</u>			
Comments: <u>Rubb</u>			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	(C)omposite/(G)rab	TPH 8015M (GRO - DRO - MRO)	BTEx 8021B	Chloride	ANALYSIS REQUEST (Circle or Specify Method No.)	
		DATE	TIME	WATER	SOIL	HCL	HNO ₃							ICE
1	Bttn-1	8/21	9:00		X		X		1	X				
2	Bttn-2		9:02						1	X				
3	Bttn-3		9:04						1	X				
4	Bttn-4		9:06						1	X				
5	Bttn-5		9:08						1	X				
6	Bttn-6		9:10						1	X				
7	Bttn-13		9:12						1	X				
8	Bttn-14		9:14						1	X				
9	Bttn-18		9:16						1	X				
10	Bttn-14		9:18						1	X				

Relinquished by: <u>Sheldon Hitchcock</u>	Date: _____	Time: _____	Received by: <u>Sheldon Hitchcock</u>	Date: <u>8/21/19</u>	Time: <u>15:25</u>
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____

LAB USE ONLY

Sample Temperature: 0.42 + 1.00

0.82

#97

REMARKS: ☒ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ORIGINAL COPY

Analysis Request of Chain of Custody Record



One Concho Center/500 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

Client Name: COG-Artesia		Site Manager: Sheldon Hitchcock	
Project Name: Pine Springs St. SWD #001			
Project Location: (county, state) Eddy, NM		Project #:	
Invoice to: Sheldon Hitchcock			
Receiving Laboratory: Cardinal		Sampler Name: Sheldon Hitchcock	
Comments: Rush			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	(C)omposite/(G)rab	TPH 8015M (GRO - DRO - MRO)	BTX 8021B	Chloride	Hold
		YEAR: 2018	DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE						
		11	Bttm - 20		9:26		X								
12	Bttm - 21		9:22							1		X			
13	Bttm - 22		9:24							1		X			
14	Bttm - 23		9:24							1		X			
15	Bttm - 24		9:28							1		X			

Relinquished by: <i>Sheldon Hitchcock</i>	Date: <i>8/21/18</i>	Time: <i>15:25</i>	Received by: <i>Sheldon Hitchcock</i>	Date: <i>8/21/18</i>	Time: <i>15:25</i>
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY	Sample Temperature <i>0.42</i>	RUSH: Same Day 24 hr 48 hr 72 hr	Special Report Limits or TRRP Report	REMARKS:	(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY



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

August 22, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: PINE SPRINGS STATE SWD #001

Enclosed are the results of analyses for samples received by the laboratory on 08/21/19 15:25.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: SW - 3 (H902879-01)

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	74.9 %	41-142							
Surrogate: 1-Chlorooctadecane	80.2 %	37.6-147							

Sample ID: SW - 6 (H902879-02)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	86.3 %	41-142							
Surrogate: 1-Chlorooctadecane	91.8 %	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

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

Received:	08/21/2019	Sampling Date:	08/21/2019
Reported:	08/22/2019	Sampling Type:	Soil
Project Name:	PINE SPRINGS STATE SWD #001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: SW - 8 (H902879-03)

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	08/22/2019	ND	206	103	200	0.821	
DRO >C10-C28*	<10.0	10.0	08/22/2019	ND	216	108	200	5.15	
EXT DRO >C28-C36	<10.0	10.0	08/22/2019	ND					
Surrogate: 1-Chlorooctane	99.9 %	41-142							
Surrogate: 1-Chlorooctadecane	107 %	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

Notes and Definitions

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

Cardinal Laboratories

*=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

ORIGINAL COPY

APPENDIX D

SW

W

NW

210

240

270

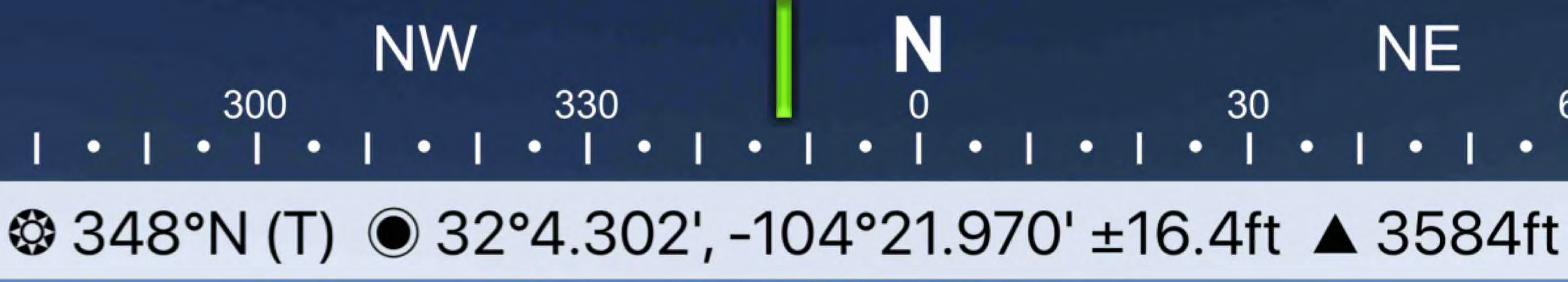
300

330

☼ 275°W (T) ☉ 32°4.299', -104°21.970' ±32.8ft ▲ 3590ft

COG OPERATING LLC
PINE SPRINGS 2 STATE SWD #
UL K SEC.2-T26S-R25E
2500' FSL & 2500' FWL
EDDY COUNTY, NM
API #30-015-42348

26 Aug 2019, 07:26:00



26 Aug 2019, 07:26:37



Date & Time: Tue, Aug 27, 2019, 13:43:59 MDT

Position: +032.071904° / -104.366102°

Altitude: 3588ft

Datum: WGS-84

Azimuth/Bearing: 323° N37W 5742mils (True)

Elevation Angle: -11.3°

Horizon Angle: -00.8°

Zoom: 1X

pine spring3